Unpacking Inequality: Wage Incomes, Disposable Incomes and Living Standards

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by Peter Saunders

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Abstract

This paper focuses on the relationship between the labour market and the distribution of income. It begins with a thorough analysis of the distribution of wage and salary income among the full-time labour force. This analysis shows the importance of the number of earners to the overall distributional location of Australian income units, and also locates the distribution of wage incomes within the broader distributional picture. An analysis of the factors contributing to the change in the distribution of wage incomes over the 1980s is then undertaken before the relationship between the distributions of wage incomes and disposable incomes is explored. There, it is shown that other income components (including government benefits and taxes) can have significant distributional effects which markedly change the distributional rankings of individual workers. These relationships are also explored using a range of international data for OECD countries. Finally, an attempt is made to impute a value to time spent outside of the labour market and the consequences of combining this with wage incomes is explored, both in terms of levels and distributions, for Australia and four other countries: Canada, (West) Germany, Netherlands and the United States.

1   Introduction

The study of income distribution, once a quiet backwater of applied economics, has been transformed into a vibrant subject of intense analytical and policy interest.   Although the separation of questions of efficiency and equality remains fundamental to the study of economics and an article of faith among most economists, such separation cannot withstand the rigours of public policy formulation.   It is thus not surprising to discover that even the Industry Commission cannot ignore the distributional dimensions of its proposals for enhancing allocative efficiency.   There is an increasing demand to know what is happening to inequality, why it is happening, who or what is responsible and what can be done about it.   For those working in the field of social policy where issues of inequality, access to resources and social justice have always been paramount, these developments are most welcome.

The subject of economic inequality is, of course, an extremely broad one.   This paper focuses on the distribution of money income and the role that wage incomes play in influencing that distribution, at a point in time and over time.   This includes not only the disparity of wage incomes among those who receive them, but also inequalities in access to wages - the incidence and effects of unemployment.   The paper draws primarily on Australian material, but international evidence and cross-country comparisons will also be used to illustrate the argument.   The analysis will focus on developments over the 1980s, because that is the period for which detailed income distributional data are currently available.   The conclusions reached will hopefully have relevance for current developments, although the extent to which past trends have withstood the impact of recession must await the release and analysis of more recent data.

Much of the paper focuses on the distribution of wage and salary incomes among individual full-time workers.   This is an important component of overall inequality but one which covers only one source of income and only one segment (albeit a large one) of the population.   It has particular importance for Australia over the last decade or so given the role that the Accord has played in influencing the pattern of wage outcomes and in establishing the pre-conditions for non-inflationary growth.   More generally, focusing on changes in inequality of labour incomes reflects the widespread increase in this dimension of inequality in many OECD countries over the 1980s (OECD, 1993).

What is happening to labour market earnings sets the scene for overall developments in inequality of living standards.   However, understanding the

distribution of living standards also requires analysis of the impact of other sources of market income, of transfer incomes and the incidence of direct taxes and how these impact upon working and non-working people. Furthermore, the distribution of disposable incomes is generally analysed at the family or income unit level, within which income is assumed to be pooled and shared equally among individual members. This requires an adjustment to be made for differences in need using an equivalence scale which allows the distribution of the economic well-being of individuals living in different family circumstances to be estimated. Some account also needs to be taken of the contribution of time spent outside of the labour market to the overall level of well-being.

Understanding how each of the links in this overall distributional chain affects the pattern of inequality provides an indication of the relative importance and impact of market processes, of public redistributive mechanisms and, by implication at least, of private (between and within family) redistributional transfers.

This chain of redistributive processes has been used to shape the paper, which is organised as follows. Section 2 analyses the role of employment and wage incomes in overall inequality and investigates the anatomy of the distribution of income in Australia and how it changed between 1981-82 and 1989-90. Section 3 analyses the distribution of wage incomes among full-time Australian workers, while Section 4 explores the links between the distributions of earnings and disposable incomes in Australia and other countries. Section 5 brings national and international data to bear on the analysis of the links between earnings inequality and the distribution of economic well-being when account is taken of the family circumstances of individual workers and the estimated market value of time spent outside of the paid labour force. The main conclusions of the analysis and some of its implications are briefly discussed in Section 6.

It is worth emphasising at the outset that the main aim of the paper is to describe and analyse the observed distributional developments rather than to seek to explain them in a causal sense. The findings may help to point to possible causes, but no explicit attempt has been made to identify the structural factors or processes which have caused the distribution of income to be as it is, nor why it has changed.

2   The Anatomy of Inequality

In 1989-90, over 62 per cent of total household income was received in the form of wages, salaries and supplements (ABS, Cat. No. 5204.0, 1994). Clearly, wage income represents the primary source of income for the majority of Australian households. In 1989-90, the proportion of gross (before-tax) income accounted for by wage and salary income varied from around 16 per cent in the lowest quintile, rising through the next three quintiles to 40 per cent, 75 per cent and 80 per cent, respectively, before declining slightly to 77 per cent in the top quintile (reflecting a decline in the top decile) (Figure 1). These variations reflect several factors, including the demographic structure of families in each decile (those in the lower deciles are mainly retired), the ways in which earnings vary with age and experience for those below retirement age, and the average number of earners in families within each decile.[1]

The impact of these latter factors is illustrated in Figure 2A, which shows that when families are ranked by their equivalent disposable incomes, the number of earners in each family is a major determinant of distributional position.[2] Most of the families at the bottom of this distributional ranking have at most one wage earner, while most of the families at the top have at least one. This pattern is even more marked if the analysis is restricted to couples, where the percentage of families in each decile with two earners increases even more markedly across the distribution (Figure 2B). There are relatively few single-earner couples in the top half of the distribution, which is dominated by two-earner couples.

Having established the importance of wage incomes, Figure 3 uses unit record data from the *1981-82 Income and Housing Survey* and the *1990 Survey of Income and Housing Costs and Amenities* to illustrate the anatomy of the distribution of income in Australia and how it changed over the period. Six separate distributions are shown, with both the scope of the income concept and

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1   The term 'family' is used for convenience, although Figures 1 and 2 are actually derived on the somewhat narrower income unit concept.

2   The equivalence scale used to derive equivalent disposable income is the Henderson scale which is explained in Appendix F of the First Main Report of the Commission of Inquiry into Poverty (1975). Although subject to extensive criticism, the Henderson scale is still widely used in Australian distributional analysis, including by the Australian Bureau of Statistics (ABS, 1994) and the Australian Institute of Health and Welfare (AIHW, 1993). Among the many attractive features of the the Henderson scale, is the fact that family need increases as more family members join the labour force.

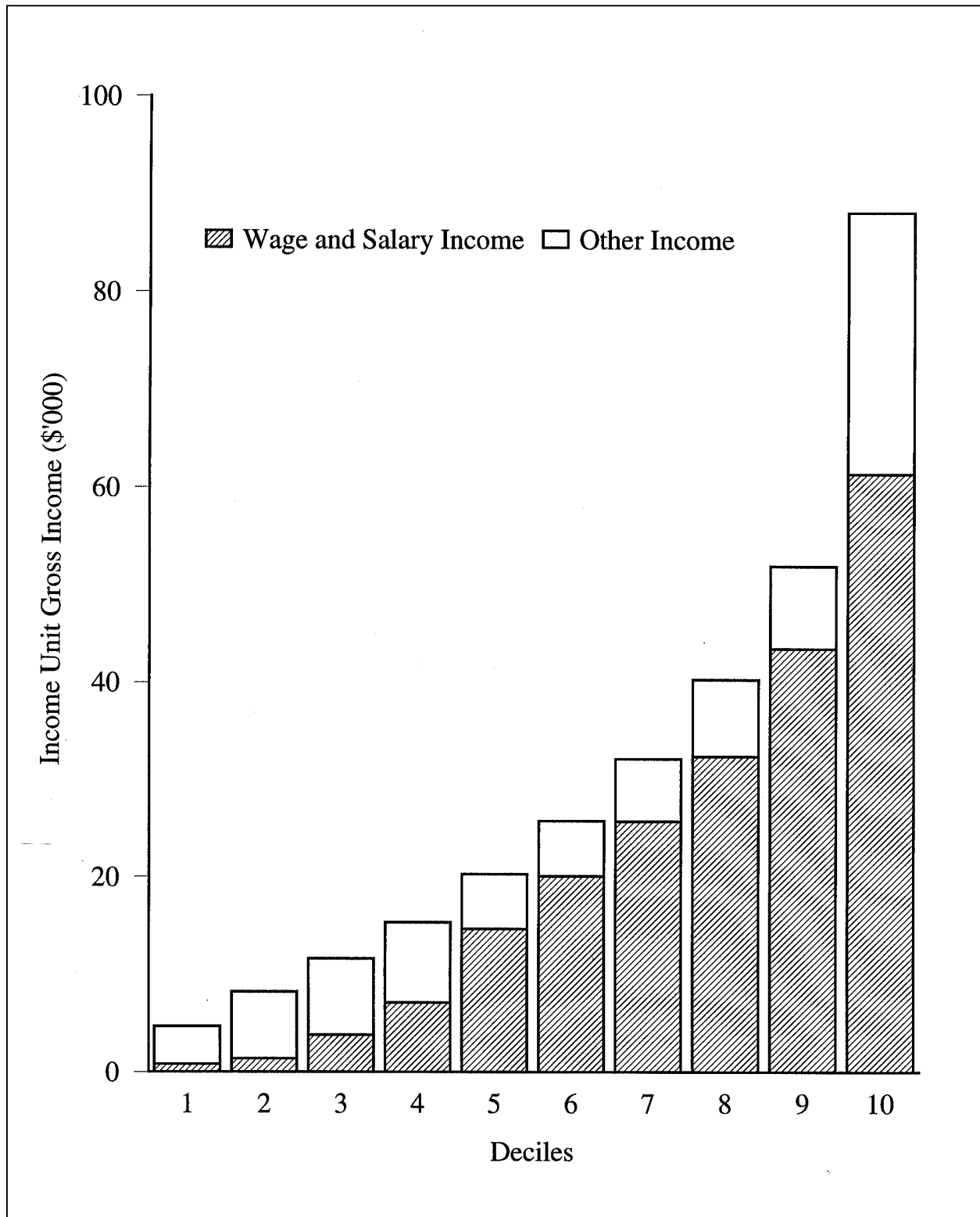**Figure 1: Wage and Salary Income by Deciles of Income Unit Gross Income, 1989-90**

Figure 2A: Number of Wage and Salary Recipients by Decile of Equivalent Disposable Income: All Income Units, 1989-90
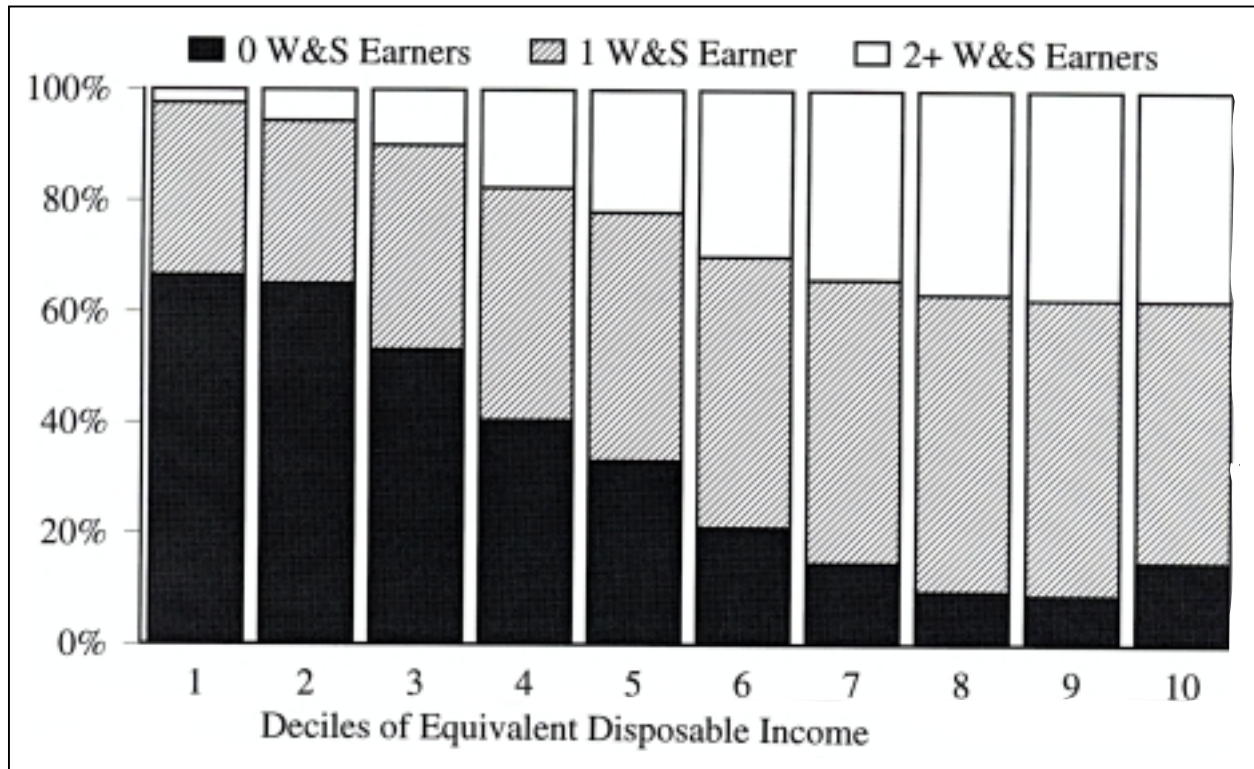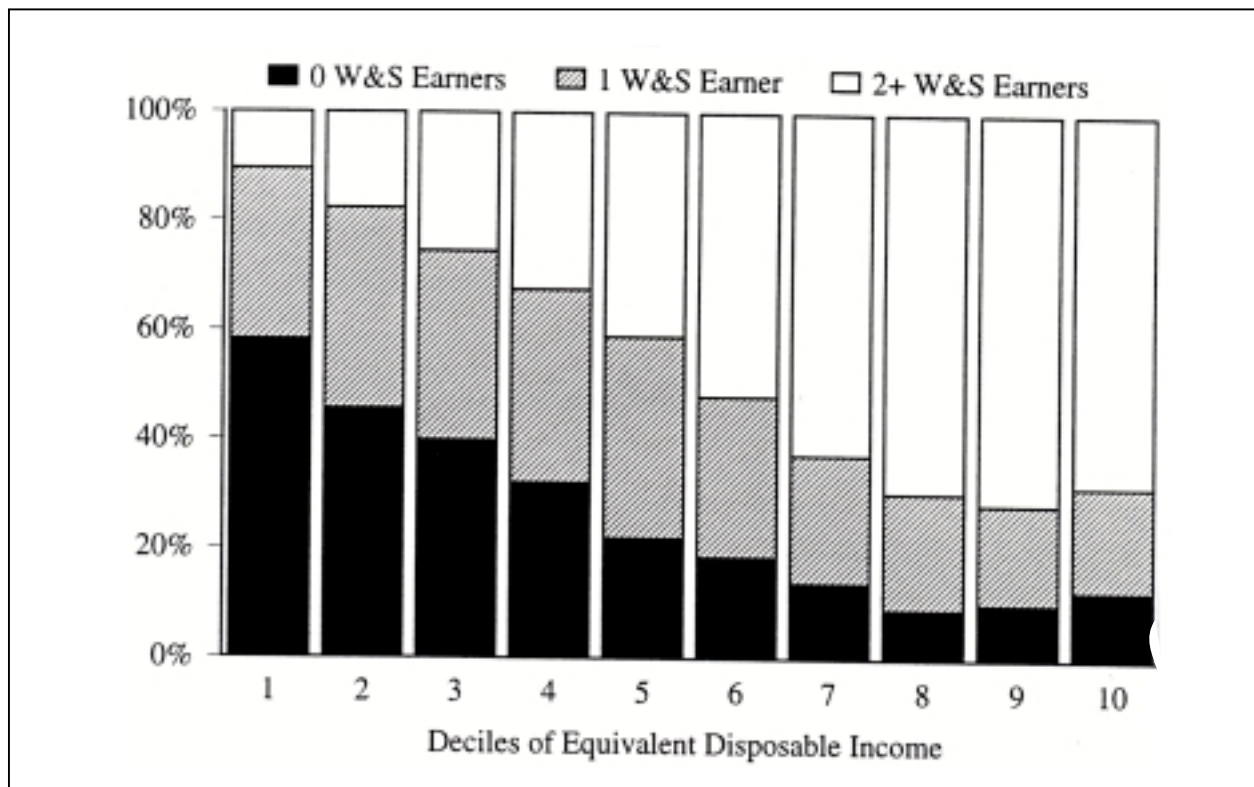

Figure 2B: Number of Wage and Salary Recipients by Decile of Equivalent Disposable Income: Couple Income Units, 1989-90

the coverage of the sample expanding, moving from left to right in the diagram. These separate distributions provide the first overview of distributional developments over the 1980s and the first clue to what factors underlie them.

The first distribution in Figure 3 refers to the distribution of wage and salary income (WS) among full-year full-time (FYFT) workers.[3] The second is the distribution of total earned (or primary) income (wages, salaries and income from self-employment) among all individuals with positive earnings (EY) in each year. The third is the distribution of total private (or market) income among all income units (PY), measured before the receipt of transfers and payment of taxes. The next two distributions show the degree of inequality of post-transfer, pre-tax gross income (GY) and of post-transfer, post-tax disposable income (DY) among all income units. The final distribution uses the detailed Henderson equivalence scale to derive the distribution of equivalent disposable income, which is then person-weighted and expressed on an individual basis (EDYP). This final measure is now widely accepted as the best household income-based indicator of the distribution of economic well-being amongst individuals.

In constructing all six measures, income has been measured on an annual basis and each measure includes all those in the sample for whom annual incomes are recorded in the two surveys. The inequality measure used in Figure 3 is the Gini coefficient, although the broad pattern of results is similar for other conventional inequality measures. The three panels of Figure 3 show, respectively, the degree of inequality in the six distributions in 1981-82, in 1989-90, and the percentage change between the two years.
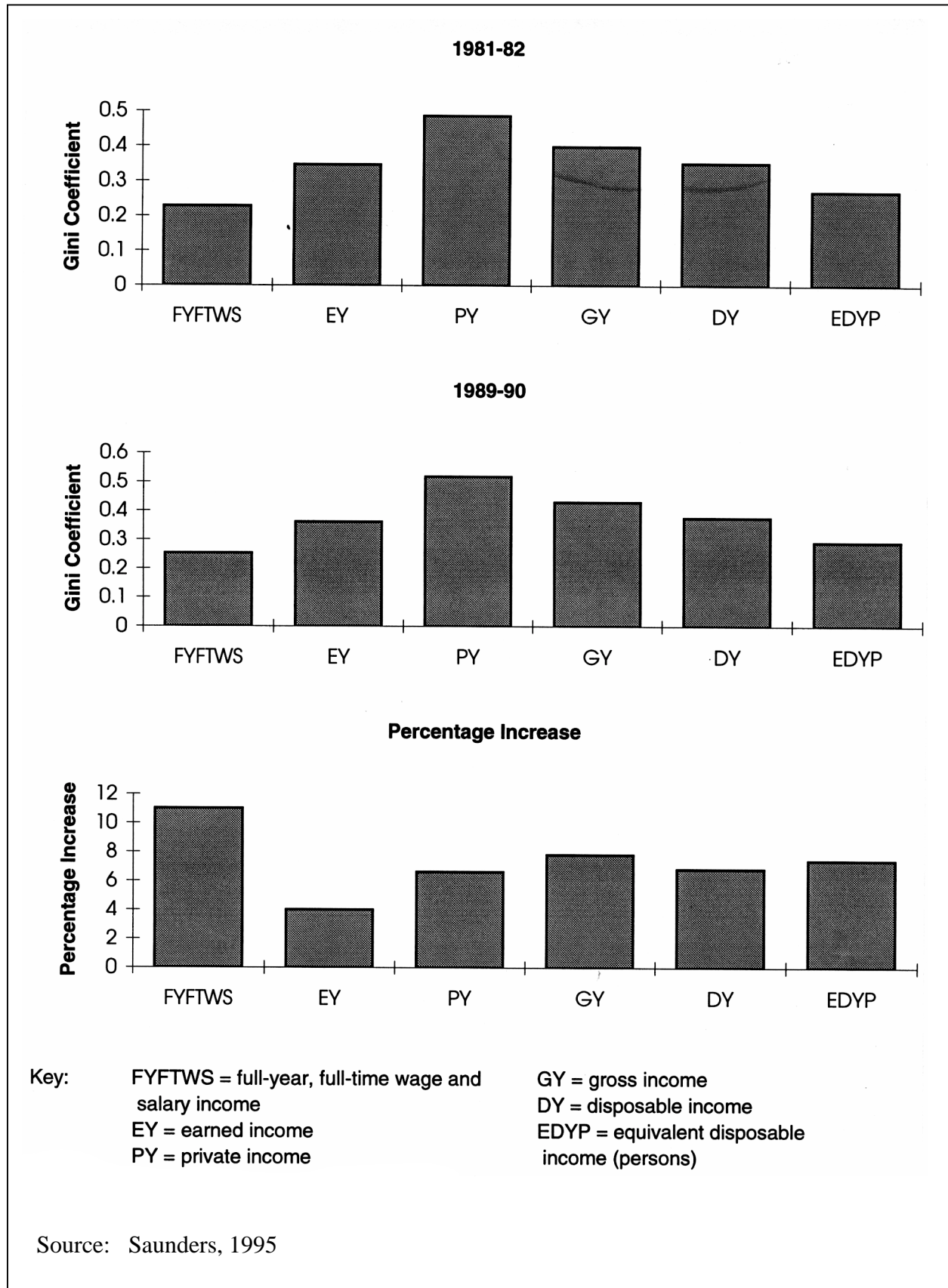
Three features emerge from these results. First, even when focusing on inequality in the narrow sense of the distribution of money incomes, the degree of inequality varies greatly according to the scope of the income concept, the coverage of the sample and the unit of analysis employed. In order to establish the extent of the change in inequality (though not the direction of change) it is thus necessary to first decide which aspect of inequality is being considered. Second, in both years inequality is lowest for the distribution of wage incomes among   FYFT   workers,

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3   FYFT workers are defined as those who worked more than 49 weeks during the course of the year, less than half of which were worked on a part-time basis. This definition of full-time workers is equivalent to that used by the Australian Bureau of Statistics (ABS, 1992). Inequality amongst this group primarily reflects variations in wage rates, because there is little variation in either weeks or hours worked across the sample.

Figure 3: Changes in the Distribution of Income as Measured by the Gini Coefficient: 1981-82 to 1989-90

Key: FYFTWS = full-year, full-time wage and salary income
EY = earned income
PY = private income

GY = gross income
DY = disposable income
EDYP = equivalent disposable income (persons)

Source: Saunders, 1995

but increases considerably once part-time (and part-year) employment, self-employment earnings and unearned incomes - mainly interest, rent and dividends - are included.

Moving from private income (PY) to gross income (GY) and to disposable income (DY) shows that the transfer and income tax systems are both progressive in their incidence. However, the precise degree of progressivity of these two systems should be interpreted with care because they are treated differently in the data. The receipt of government cash transfers is recorded directly by recipients in each survey, while the payment of taxes has been imputed on the basis of information provided on the level and source of pre-tax incomes. The estimates of disposable income thus reflect how much tax should have been paid, not how much actually was paid. Overall, however, the combined effects on inequality of the transfer and tax systems - which primarily address issues of vertical inequality - are similar in magnitude to the equivalence adjustment, which mainly account for the existence of horizontal inequities.

The final point, which emerges from the lower panel of Figure 3, is that all six distributions became more unequal between 1981-82 and 1989-90. The largest proportional increase in inequality took place among the wage incomes of FYFT workers, even though this distribution still remained the most equal of the six distributions in 1989-90. This feature of the change in inequality over the 1980s underlies its characterisation as being essentially a market-driven phenomenon, despite the impact of the Accord and other labour market interventions. It is also worth noting that while the trend in disposable income inequality was only about half that for FYFT wage incomes, disposable income inequality still increased over the period by around six per cent.[4] The tax-transfer system thus managed to stem the rising tide of wage income inequality, but did not reverse it.

What emerges most clearly from this analysis is that the degree of inequality among the primary labour force has a substantial impact on the overall income inequality profile. Other factors, including the impact of unemployment, of part-time work, the receipt of capital income and the correlations between these alternative incomes for particular individuals and between different individuals

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[4]   The Gini coefficient is most sensitive to distributional changes close the modal value of income. If an alternative top-sensitive inequality measure like the coefficient of variation is employed, the changes in inequality are greater than those shown in Figure 3. The increases in inequality of FYFT wage incomes and equivalent disposable incomes over the period then become 11.4 per cent and 19.2 per cent, respectively.

within income units are also important, but what is happening in the labour market and to the structure of wages is critical.

The impact of unemployment on inequality is reflected (though not identified) in Figure 3 in the distributions of earned income (EY) and private income (PY), both of which include people who have been unemployed for all or part of the year. Given the nature of the labour market, the impact of the incidence of unemployment among **individuals** on income inequality among **families** is not as clearcut as it probably once was, although the limited time-series evidence analysed by Saunders (1992) indicates that inequality and unemployment are positively related. Table 1 presents another perspective on this relationship by comparing the wage incomes of those working full time at the time of the 1990 income survey according to whether or not they had experienced a spell of unemployment over the course of 1989-90. These estimates reveal that those who had been unemployed tend to earn less when they regain employment. While around half of all full-time workers were earning less than $500 a week in 1990, this percentage was almost three quarters for those workers who had experienced a spell of unemployment during the year ending in June 1990.

Part of the reason for this may reflect the downward adjustment of the reservation wage during spells of unemployment. In addition, however, it seems that unemployment is more prevalent amongst the low-paid and while this has the effect of reducing the impact of unemployment on inequality, it highlights the perilous position of those in low-paid work and underlines the need for policy interventions which protect them.

3   The Distribution of Full-time Wage Incomes in the 1980s

Despite the growth in part-time and casual work, participation in full-time work still comprises the core of the labour force and accounts for the bulk of wage incomes. In 1981-82, wage and salary income accounted for 69.8 per cent of total gross household income, while the wage incomes of FYFT workers alone accounted for 57.6 per cent of gross income. By 1989-90, both percentages had increased, to 70.8 per cent and 59.3 per cent, respectively, despite the decline in the proportion of full-time employment in total employment (ABS, Cat. No. 6203.0, various isses). Understanding the nature and causes of the trends in the distribution of wage incomes for those in full-time employment thus has a major

Table 1: The Distribution of Full-Time Wages in 1990 by Unemployment Experience During 1989-90

Gross weekly wage income ($)	All full-time workers in 1990	Those who experienced some unemployment during 1989-90	Others
Under 350	14.6	24.4	13.9
350 - 499	35.1	48.3	34.1
500 - 799	37.3	22.3	38.4
800 and over	13.0	5.1	13.5
Total	100.0	100.0	100.0

Source: *1990 Survey of Income and Housing Costs and Amenities,* unit record file.

bearing on the nature and causes of the overall distributional trend. Although this relationship is by no means exact, investigation of wage income inequality is a logical stage at which to begin to consider overall income inequality, not least because of what is shown in Figure 3.

The distributions summarised in the first three columns of Table 2 indicate that the change in inequality of wage incomes among FYFT workers over the 1980s took the form of a decline in the shares of the four lowest quintiles and an increase in the share of the top quintile, particularly the top decile.[5] If, instead of defining the deciles in the conventional way according to the basis of the overall distributional ranking, the technique used by King, Rimmer and Rimmer (1992) and Gregory (1993) is applied in which the decile boundaries are held constant relative to median income, the issue of whether or not there has been a 'disappearing middle' in the distribution of wage incomes can be investigated.

The results from such an exercise need to be treated with caution, particularly in a situation where the change in inequality is itself influencing the relationship between the median and other measures of central location.[6] As Belchamber

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[5] Replicating this analysis on a current income basis for full-time workers at the time of the 1982 and 1990 surveys indicates a much smaller increase in inequality (a rise in the Gini coefficient of 4.3 per cent compared with 11.4 per cent for period incomes) with the main distributional change being a decline in the share of the second quintile and an increase in the share of the top quintile.

[6] Between 1981-82 and 1989-90, the ratio of the mean to the median of the distributions shown in Table 2 increased from 1.068 to 1.117.

Table 2: Changes in the Distribution of Wage Incomes Among Full-Year Full-Time (FYFT) Workers Between 1981-82 and 1989-90

Decile	Income share in 1981-82	Income share in 1989-90	Change in share	Percentage of FYFT workers in income brackets held constant relative to the median
First	3.81	3.66	-0.15	10.13
Second	6.28	5.95	-0.33	10.64
Third	7.35	6.93	-0.42	9.42
Fourth	8.10	7.77	-0.33	8.76
Fifth	8.91	8.61	-0.30	11.04
Sixth	9.74	9.48	-0.26	7.69
Seventh	10.80	10.58	-0.22	9.12
Eighth	12.02	11.87	-0.15	10.43
Ninth	13.84	13.85	+0.01	10.68
Tenth	19.16	21.29	+2.13	12.09

Source: *1981-82 Survey of Income and Housing Costs* and *1990 Survey of Income and Housing Costs and Amenities,* unit record files.

(1995) has demonstrated with the use of a counter-example, it is possible for job growth which is concentrated in the middle and upper sections of the distribution to increase the median of the distribution and for the resulting increase in boundary cut-offs expressed relative to the median to give the semblance of an increase in the number of jobs at the bottom of the distribution. His analysis of earnings data between 1985 and 1991 leads him to reject the 'disappearing middle' hypothesis in favour of a 'vanishing bottom' characterisation of developments over the period (Belchamber, 1995, Figure 3).

Despite the problems highlighted by Belchamber, the estimates presented in the final column of Table 2 provide little evidence of a disappearing middle in the distribution of wage incomes between 1981-82 and 1989-90. The main overall feature of the changes indicated by both these estimates and those shown in the other columns of Table 2 is perhaps more accurately described as one of an 'accelerating top' than a 'disappearing middle'. It is certainly the case that however you look at these data, those in the top decile fared best in terms of recorded wage incomes over the 1980s.

Further insight into the factors contributing to the change in wage income inequality can be gained by applying the technique of inequality decomposition.

This technique has been employed in previous analyses of income distribution in Australia by Meagher and Dixon (1986), Saunders (1993a) and Raskall, McHutchison and Urquhart (1994). Following these studies, the measure of inequality used is half the squared coefficient of variation ($CV^2/2$) which is a member of the generalised entropy family of decomposable inequality indices derived by Shorrocks (1984).

Each member of this class of inequality measures has the property that total inequality can be decomposed into the weighted sum of inequality within a series of exclusive and exhaustive population sub-groups and a between-group inequality based only on mean incomes and the size of each of the sub-groups. The latter term indicates how much inequality would exist overall if each member of each sub-group had the mean income of the group as a whole (Jenkins, 1991).

There are, of course, an infinite number of ways in which the sub-groups can be defined for the purpose of such analysis. If the number of sub-groups is small, it is to be expected that most of the inequality will be within groups - all of it by definition in the limiting case of only one group. As the number of groups increases, more inequality will be due to the between-group component - all of it by definition in the limiting case where each group contains only one individual (or income unit). Despite these reservations, the method has the advantage that it can provide an insight into the relative importance of the factors which determine overall inequality at a point in time and help to identify what factors are contributing to the change in inequality over time.

In practice, the decomposition analysis is restricted by the availability of data on a consistent basis across the two income surveys. Unfortunately, classification changes introduced in the mid-1980s make it difficult to undertake a consistent decomposition by occupation for the two years. Four decompositions were thus undertaken on the basis of gender, age, education and industry. The categories used in the last three of these were: **age:** less than 25 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years, and 65 years and over; **education:** highest level attained less than HSC, HSC, trade certificate, other certificate or diploma, and degree; **industry:** agriculture, mining, manufacturing, utilities, construction, wholesale and retail trades, transport, communications, financial services, public administration and defence, community services, and recreation

and culture. The decomposition results for the wage incomes of FYFT workers for each categorisation and for each year are presented in Table 3.[7]

These results confirm previous research which indicates that most of the inequality of Australian income unit incomes exists within rather than between socioeconomic categories.[8] The estimates for 1989-90, for example, imply that if all FYFT males received the average wage income of all men, while all FYFT females received the average wage income of all women, total wage inequality would virtually disappear, even if the average male-female wage income differential remained unchanged. The implication is that the great bulk of inequality among FYFT wage incomes occurs within gender groups, not between them.

Table 3 indicates that among FYFT workers, inequality between the sexes is less important than inequality between different industries, age-groups or levels of educational attainment. The between-group inequality term contributes most to overall inequality when the groups are classified by the highest level of educational attainment, although the relative importance of this factor declined by about a third between 1981-82 and 1989-90. These results, although highly aggregative and relatively simple, cast some doubt on the role of increased returns to education as an explanation of the trend towards wage inequality in Australia in the 1980s.

If that factor were important, one would expect to find that the relative size of between-group inequality for different education groupings had increased over the 1980s, not decreased as Table 3 indicates.[9] Finally, the fact that the between-group term is lowest (and declines most) for the decomposition by industry groups suggests that the so-called 'de-industrialisation thesis' which attributes the rise in earnings inequality to structural changes associated with the decline in manufacturing cannot explain much of the level or trend in wage income inequality in Australia over the 1980s.

Table 3: Inequality Decomposition by Gender, Age, Education and Industry for Full-Year Full-Time Workers: 1981-82 and 1989-90 (Decomposition of $CV^2/2$)

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7   Replicating these results on a current (weekly) income basis at the time of survey produces very similar results to those shown in Table 3.

8   It is worth emphasising that use of the income unit as the unit of analysis precludes the existence of any income inequality within income units.

9   These findings are consistent with those derived from the more thorough analysis of the same data undertaken and reported by Borland and Wilkins (1994). They find that while changes in the distribution of, and return to, unobservable skills acted to increase earnings dispersion between 1982 and 1990, this was not true for changes in the distribution of, and return to, educational attainment or years of experience.

Basis of decomposition	1981-82			1989-90		
	Overall inequality	Within group inequality[a]	Between group inequality[a]	Overall inequality	Within group inequality[a]	Between group inequality[a]
Gender	0.094	0.087 (92.6)	0.007 (7.4)	0.145	0.138 (95.2)	0.007 (4.8)
Age	0.094	0.081 (86.2)	0.013 (13.8)	0.145	0.133 (91.7)	0.012 (8.3)
Education	0.094	0.078 (83.0)	0.016 (17.0)	0.145	0.127 (87.6)	0.018 (12.4)
Industry	0.094	0.084 (89.4)	0.010 (10.6)	0.145	0.138 (95.2)	0.007 (4.8)

Note: a)   Percentage contributions to overall inequality are shown in brackets.

Source: See Table 2.

4   From Wage Incomes to Disposable Incomes

Given their aggregate size, it is not surprising that the distribution of wage incomes exerts a considerable influence on the distribution of disposable incomes. That influence will, however, be conditioned by the pattern of receipt of non-wage market incomes, as well as by the redistributive impact of tax and transfer instruments. Furthermore, if an equivalence scale is used to adjust for family needs, how needs vary with wage incomes will influence how wage incomes translate into equivalent disposable incomes (EDY). These factors suggest that while the relation between the distributions of wage income and equivalent disposable income may be close, it will not be exact.

This is illustrated for the sample of FYFT workers in Table 4, which shows for 1989-90 the movements between the distributional quintiles when the basis on which people are ranked is changed from wage and salary income (vertical scale)

Table 4: Cross-Classification of the Quintile Rankings of Wage Incomes and Equivalent Disposable Incomes for Full-Year Full-Time Workers in 1989-90

		Quintiles of the Distribution of Equivalent Disposable Incomes				
		1	2	3	4	5
Quintiles	1	**7.6**	5.9	4.0	1.3	1.1
of the	2	4.2	**4.3**	5.7	4.7	1.2
Distribution	3	3.9	3.2	**3.8**	6.0	3.1
of Wage	4	3.2	3.6	3.5	**4.4**	5.4
Incomes	5	1.1	3.0	3.1	3.7	**9.3**

Source: See Table 1.

to individual equivalent disposable income (horizontal scale). The entries in each cell of the matrix in Table 4 indicate the percentage of FYFT workers who fall into each quintile combination of the two alternative distributional rankings. Thus, for example the top left hand entry indicates that 7.6 per cent of the sample fall within the lowest quintile of the distributions of both wage and equivalent disposable incomes, the next entry indicates that 5.9 per cent fall in the first quintile of wage incomes and the second quintile of equivalent disposable incomes, and so on.

If the rankings of the two distributions were identical, the diagonal entries in Table 4 would all equal 20 per cent and the off-diagonal entries would all be zero. In fact, the five diagonal entries sum to only 29.4 per cent, implying that over 70 per cent of FYFT workers move at least one quintile when the basis on which their distributional ranking is determined changes from wage income to equivalent disposable income. The distributional ranking of one third of the sample moves by more than one quintile, while almost 11 per cent of the sample move their ranking by more than two quintiles.

The reasons for these changes have relatively little to do with the progressive impact of transfers and taxes, because these tend to narrow vertical income differences without greatly altering the income rankings. Rather, the changes reflect several factors, including the impact of tax and transfer instruments such as family and rent assistance measures on the transfer side and the dependent spouse rebate on the tax side which influence horizontal equity by affecting families with given levels of income in different ways. Even these only affect

the distributional rankings to the extent that the structure of provision does not mirror differences in need as captured by the equivalence scale.

More significant is the fact that the rankings will also change if incomes from sources other than wages and salaries are not positively correlated with wage incomes. Included here are incomes from self-employment, from interest, rent and dividends and from superannuation - each of which will not necessarily be closely associated with **current** wage incomes. Finally, there is the fact that some of the individual FYFT workers in the sample will be members of the same income unit (as husband and wife) and will thus have a level of family disposable income (even after the equivalence scale adjustment) which may be considerably higher than their individual wage incomes. For all of these reasons, it is clear from Table 4 that while in aggregate the distribution of wage incomes exerts a considerable influence on the distribution of overall economic well-being, this relation is far less exact at the level of the individual worker - even among those who are working on a full-time basis.

A similar exercise to that described above for Australia has been undertaken on a comparative basis for nine countries by Fritzell (1991).[10] Using data from the Luxembourg Income Study covering years in the mid-1980s, Fritzell compares how the distributional position of individuals changes when the ranking basis changes from factor income (earnings plus capital income) to disposable income. Both income measures were adjusted for need using the OECD equivalence scale in an attempt to allow for cross-country differences in demographic structure.[11] The indicator of distributional change used by Fritzell is the percentage of people whose ranking changes by more than one decile: Table 5 summarises his results for the entire population in each country and for the economically active population (aged 20-64 years) only.

The cross-country differences shown in Table 5 are considerable, even after older and younger people are excluded. In Sweden, one quarter of the economically active sample change their distributional position by more than one decile when moving from a factor income to a disposable income ranking. In   Germany   and

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10   The issue of how distributional rankings alter in Australia when the income concept changes has also been addressed by Saunders (1994) and Travers and Richardson (1995).

11   The OECD equivalence scale assigns a weight of 1.0 to the first adult in each unit, 0.7 to other adults and 0.5 to each child.

Table 5: Percentage of Individuals whose Distributional Ranking Changes by More than One Decile when Moving from Factor to Disposable Income[a]

Country	Entire sample	Economically active sample
Australia	8.3 (0.4)	2.3 (0.3)
Canada	9.6 (0.5)	3.6 (0.4)
Germany[b]	44.2 (1.9)	18.5 (1.7)
Netherlands	47.2 (1.5)	10.1 (1.1)
Norway	27.3 (0.9)	13.2 (0.8)
Sweden	47.4 (1.0)	25.4 (1.0)
United Kingdom	24.2 (1.0)	19.8 (1.1)
United States	12.5 (0.5)	4.8 (0.4)

Notes: a)   The absolute size of the 5 per cent confidence intervals are shown in brackets.

           b)   Pre-unification (West) Germany.

Source: Fritzell, 1991, Tables 2 and 4.

the United Kingdom, the ranking of one fifth of the population changes by more than one decile, while in Australia the figure is much lower - close to one fortieth. Of course, the degree of inequality in the distributions themselves will have some impact on the results, because a move of one decile is more substantial when the deciles themselves are more widely spaced. These differences are not, however, large enough to explain the variations shown in Table 5, the broad pattern of differences remaining even after the degree of income inequality in each country has been standardised to that existing in the United States (Fritzell, 1991, Table 3). Fritzell concludes that the degree of market dependence - by which he means the extent to which an individual's factor income ranking determines their disposable income ranking - differs greatly between countries, reflecting differences in tax and social policies as embodied in the welfare state of each country.

Australia lies at one end of this spectrum, being the country where the hierarchy of market rewards has the largest determining influence on the eventual ranking of economic well-being. This will come as no surprise to those familiar with the role of the Australian wage determination system and the evolution of what Castles refers to as a 'wage earners' welfare state' (Castles, 1985; 1994). However, in light of the trend to increasing wage income inequality described earlier, these results suggest that, if past patterns persist, either a greater degree

of inequality in overall economic well-being will have to be tolerated, or the redistributive role of the tax and transfer systems will have to be strengthened. From this perspective, moves to further 'free-up' the Australian labour market and expand the scope of enterprise bargaining will need to be accompanied by offsetting tax and benefit measures if the trend to inequality is not to accelerate.

This research has relevance for the more general debate over alternative strategies for achieving income equality. That debate distinguishes between those strategies which seek equality by influencing the distribution of primary incomes generated in the labour market and those which seek to achieve greater equality of disposable incomes through redistribution. Policies pursued under the former strategy include direct intervention in the wage determination process and education and training programs designed to change wage differentials indirectly by influencing patterns of relative labour supply. Included under the latter strategy are tax and transfer policies which redistribute market incomes leading to a more equal distribution of disposable (or secondary) incomes.[12]

Investigation of the relationship between the distributions of primary and disposable incomes using a comparative framework can help to shed light on the extent to which different countries have followed these different strategies, and to what effect. Figure 4 contributes to this task by comparing the degree of inequality in the distributions of primary and disposable income in a range of OECD countries.[13] The distributional estimates used in Figure 4 have been produced as part of a study of income distribution in OECD countries which uses data from the Luxembourg Income Study (Atkinson, Rainwater and Smeeding, 1995). Because primary incomes can be so low for those with no or only a marginal attachment to the labour force, the inequality measure used in Figure 4 is P75/P25, the ratio of the 75th to the 25th percentile.

Given the difficulties involved in interpreting these data, particularly those relating to the counterfactual problems alluded to earlier, not too much weight should be placed on any single explanation. Where tax and benefit systems guarantee a generous and comprehensive minimum income, for example, primary

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12   The very formidable conceptual and practical problems associated with specifying a counterfactual against which the actual redistributive impact of these policies can be assessed are acknowledged but not addressed.

13   Primary income is defined, as before, to equal to the sum of total wage and salary income and income from self-employment.

Figure 4: Inequality in Primary Income and Disposable Income (Ratio of 75th to 25th Percentile)

Source: Atkinson, Rainwater and Smeeding, 1995.

income is likely to be low as a consequence for those explanation. Where tax and benefit systems guarantee a generous and comprehensive minimum income, for example, primary income is likely to be low as a consequence for those so protected. Highly targeted benefit systems can also cause substitution effects which depress primary income leading to the appearance of a highly redistributive benefit system. These issues of cause and effect are deeply intertwined in the observed data and are extremely difficult to unravel.

However, the main point to note from Figure 4 is that there is a positive and statistically significant association between the degree of inequality in primary and disposable incomes.[14] International evidence thus supports the proposition that the final degree of inequality of disposable income follows closely the degree of inequality which emerges in the labour market. This finding, albeit preliminary and extremely tentative, adds weight to the need to understand how labour market processes and institutions influence inequality in labour earnings, and thus shape the overall income inequality profile.

5   From Earnings to Living Standards

Section 3 analysed the distribution of the wage incomes of full-time Australian full-time workers. That analysis is now extended to trace through the relationships between inequality in individual earnings and family earnings, and to provide an estimate of the distributional impact of the value of time spent not participating fully in the labour market. The single most important feature which distinguishes earnings from other sources of income is that the receipt of earnings requires the immediate sacrifice of something else. That something else is time, or what economists rather quaintly refer to as 'leisure'.

Although microeconomic theory emphasises the distinction between income and utility (or standard of living) the implications of that distinction has not permeated much of the distributional literature. This situation is beginning to change, as researchers embark on the task of computing indices of living standards which include estimates of the value of time spent in both paid (market) and unpaid (non-market) activities.[15] To the extent that estimates of the marginal value of non-market time are positive, the living standards of

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14   The cross-national correlation coefficient between inequality in primary and disposable incomes is 0.63 and highly significant at the five per cent level, almost so at the one per cent level.

15   The two main approaches to the valuation of non-market time are the replacement cost and opportunity cost methods. Both are discussed in ABS (1990). The approach adopted here is similar to that employed to estimate the value of the non-employed time component of full income by Travers and Richardson (1993).

families with the same monetary incomes will differ if they enjoy different amounts of non-market time. This will generally be the case even if the equivalence scale incorporates an adjustment for the costs of work, as the Henderson scale does, for example.

In exploring the distributional consequences of imputing a value to non-market time, a comparative framework is again applied using data for five countries from the Luxembourg Income Study: Australia, Canada, (West) Germany, the Netherlands and the United States. Such an approach has the potential to provide insight into how different national policies with respect to child care and family taxation affect the extent and nature of female labour supply. It also allows the sensitivity of results to different rates of labour force participation to be investigated.

The methodology is used here to investigate two specific issues. The first concerns how inequality changes when the focus shifts from the earnings of individuals to family earnings, or at least to the combined earnings of both partners in couples.[16] The second is the distributional impact of the fact that not all individuals are fully employed in paid work, whilst some who are employed may not be paid their full potential earnings.

These two issues are not unrelated in the broader context of changes in the level and distribution of family well-being. To the extent that additional labour supply by family members has helped to supplement market incomes which might otherwise have declined, there is a consequential fall in the amount of leisure or time spent in unpaid domestic work or other activities. This in turn implies that comparisons of market income alone provide a misleading basis for comparing standards of living which incorporate an estimate of the value of time spent outside the labour market. Where total labour supply varies between families and is changing over time, estimates of the distribution of economic well-being and how it is changing will also be distorted.

The first part of the analysis is undertaken using the 'zero earning counterfactual' to estimate the impact of female earnings on family earnings, by comparing the distributions of male and family earnings. The key to the second part of the analysis involves replacing actual market earnings (which will be zero for those who are unemployed or engaged in full-time domestic or other unpaid work) by an estimate of earnings capacity. This involves estimating earnings functions for those workers who are engaged in full-year full-time

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16   The analysis is restricted to couples where both partners are aged between 25 and 55 years.

market work, from which an estimate of the full-time earnings capacity of each individual is obtained as a prediction.[17] Actual earnings (whether positive or zero, full-time or part-time) are then replaced by the regression model prediction of earnings capacity and the degree of inequality is re-calculated.[18]

The details of the variables used in the earnings function estimation are provided in Table A.1 in the Appendix and the preferred results are shown in Tables A.2 and A.3. The model specifications were chosen after a good deal of experimentation with alternative formulations and variable definitions.[19] The results confirm the role of the two human capital variables (education and experience) in all five countries, although only weak effects were found for Australian women. In general, the results indicate that the returns to education are higher in North America than in Europe, with Australia close to North America for women but with the return to education for Australian men being particularly low.[20] The lifetime earnings-experience profile follows an inverted U-shaped pattern in each country, with earnings peaking between 30 and 35 years after labour force entry.

Surprisingly, the presence of young children does not always have a significant impact on female earnings, while only in Australia is the size of the impact of young children on female earnings larger in absolute terms than the impact of older children. The results also reveal that there is a pronounced negative earnings differential for those born overseas in four of the five countries for men, though not for women. Finally, the results indicate that married men have higher earnings than single men in all five countries, whereas the earnings of married women tend to be lower than those of single women. The presence of children also tends to depress women's earnings but not men's. These aspects of the results thus suggest that, at least in terms of foregone earnings, women bear a direct financial burden associated with both marriage and child-rearing. In stark contrast, there is a clear 'marriage premium' in the male earnings structure in all five countries.

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17   The method used to predict earnings capacity follows that originally developed by Garfinkel and Haveman (1977) and amended recently by Haveman and Buron (1993) to allow for a stochastic influence on the earnings capacity of individuals with given age, education and other characteristics. It is described in more detail in Saunders, O'Connor and Smeeding (1994).

18   The earnings functions were estimated separately for males and females and were based on samples of all FYFT workers (married and single) in the relevant age range.

19   Further details are provided by Saunders, O'Connor and Smeeding (1994: 31-5) and are not repeated here.

20   This finding is consistent with the relatively low within-group inequality term shown in Table 3 for the decomposition by level of education.

Many features of the results reported in Tables A.2 and A.3 are of interest in themselves and warrant further discussion. In particular, the cross-country differences need to be analysed in the context of how wage determination structures and processes and other public policies (e.g. education, training and child-care) operate in each country. However, their main purpose here is to predict the earnings capacity of each individual in each country's sample of couples aged 25-55, from which it is possible to investigate how the distributions of earnings capacity and observed market earnings differ in each country.[21]

The results of this exercise are reported in Table 6. The first two columns summarise for each country the actual distributions of earnings - first for the earnings of the male member of each couple and then for the combined earnings of both partners. Two aspects of these distributions are worth drawing attention to. First, there is a good deal of cross-country variation in earnings inequality among prime-aged males, with Australia falling between North America, where the degree of inequality is greatest, and Europe where it is lowest.[22]

On the basis of these results, the distribution of Australian earnings in the mid-1980s looks similar to that in North America at the bottom of the distribution and much like that in Europe at the top. The second feature of the results in Table 6 worth noting is that when the market earnings of spouses are also taken into account, the Gini coefficient declines in all five countries, though only marginally in Australia, Canada and the Netherlands. However, only in Canada and the United States do wives' earnings lead to an unambiguous decline in earnings inequality.[23]

The last two columns of Table 6 investigate how inequality varies when actual earnings are replaced by earnings capacity. This substitution is undertaken in two stages. First, in column 3, the earnings of all those with positive earnings is

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21   The earnings capacity estimates are derived directly from the predictions of the earnings function for each individual in the sample in each country. These predictions are then disturbed by a stochastic factor which can be thought of as reflecting the impact of chance on earnings outcomes; further details are provided in Saunders, O'Connor and Smeeding (1994).

22   The male earnings distributions shown in Table 6 are similar to those derived from the Luxembourg Income Study data by Green, Coder and Ryscavage (1992).

23   Saunders (1993b) has estimated that the impact of wives' earnings on family income inequality among Australian couples aged 25-54 was equalising in both 1981-82 and 1989-90.

Table 6: The Distribution of Individual Earnings, Family Earnings and Earnings Capacity in Five Countries (Quintile Shares)

	Earnings of the (male) family head	Family earnings (head and spouse combined)	Earnings capacity (earners only)[a]	Earnings capacity (all adults)[a]
Australia, 1985-86				
First	5.8	6.6	6.7	10.3
Second	15.8	15.0	13.6	14.7
Third	19.6	19.4	18.4	18.6
Fourth	23.8	23.9	24.3	22.7
Fifth	34.9	35.0	37.0	33.7
Gini coefficient	0.285	0.282	0.303	0.233
Canada, 1987				
First	5.0	6.8	7.8	10.9
Second	14.2	14.2	13.9	15.0
Third	19.4	18.9	18.5	18.5
Fourth	24.7	23.8	23.8	22.7
Fifth	36.6	35.8	36.1	33.0
Gini coefficient	0.314	0.291	0.283	0.222
(West) Germany, 1984				
First	8.8	9.7	9.3	12.9
Second	15.8	14.6	14.7	16.3
Third	18.5	18.4	18.9	18.9
Fourth	22.8	23.4	23.3	22.2
Fifth	34.2	33.8	33.8	29.6
Gini coefficient	0.251	0.244	0.246	0.169
Netherlands, 1987				
First	8.3	9.1	8.3	13.7
Second	15.5	14.4	13.9	16.8
Third	18.6	18.0	18.5	19.1
Fourth	22.7	23.4	24.5	21.9
Fifth	35.0	35.0	34.7	28.4
Gini coefficient	0.262	0.261	0.269	0.147
United States, 1986				
First	5.3	6.8	7.2	9.7
Second	13.0	13.5	13.2	14.2
Third	18.1	18.2	17.8	18.0
Fourth	24.0	23.8	23.7	23.0
Fifth	39.4	37.8	38.2	35.2
Gini coefficient	0.345	0.310	0.308	0.256

Note: a) The derivation of the earnings capacity estimates is explained in the text, with supporting estimates presented in the Appendix.

Source: Saunders, O'Connor and Smeeding, 1994, Tables 4 and 11.

replaced by their earnings capacity. Because the earnings capacity estimates assume that everyone works full time and is paid their full earnings potential (as captured in the estimated earnings functions) comparisons of the results in columns 2 and 3 show how the incidence of part-time work, part-year spells of unemployment and the receipt of earnings below market potential (which may reflect discrimination in the labour market) affect inequality. The replacement of actual earnings by the earnings capacity of those in work leads to no clearly discernible pattern of distributional effects - within or between countries. In aggregate, the overall effects are small, except in Australia, where inequality rises by 7.4 per cent, reflecting an increase in the share of the top quintile.

Finally, in column 4 of Table 6 all individuals are assumed to receive their estimated full-time earnings capacity. Comparison with the estimates in column 3 indicates the change in inequality if the unemployed and those not in the labour force (e.g. those involved in full-time domestic work) were to become fully-employed at market earnings. In interpreting these estimates, it should be remembered that no account has been taken of how wage levels themselves would adjust in the face of such large scale increases in labour supply. Nor does the method allow for differences between those who have chosen their existing hours of paid work and others (e.g. the unemployed) whose choices have been involuntarily constrained. Despite these limitations, the main point to note is that there is a very large reduction in inequality in all five countries moving from actual earnings (column 2) to earnings capacity (column 4), ranging from 17 per cent in Australia and the United States to over 44 per cent in the Netherlands.

Such comparisons provide an indication of the combined impact on inequality of part-time work, unemployment and non-participation in the labour market. To the extent that each of these activities involves those affected in supplying fewer hours of paid-work to the labour market thus leaving more time to devote to other pursuits, the distribution of earnings capacity incorporates an estimate of the value of time involved in non-market activities. In this sense, they provide a more comprehensive measure of the distribution of living standards or economic well-being than is provided by observed earnings alone.

6 Concluding Discussion

This paper has ranged over a number of topics associated with wages and the distribution of income. The common thread which links them is the impact of employment and access to a labour market income on the level and distribution

of wage incomes, earnings, disposable incomes and living standards. The widening disparities in earnings, now well-documented, has become a matter of considerable concern in Australia, as it has in many other countries (EPAC, 1995). The recent OECD *Jobs Study* has noted that this trend has been accompanied by falling real wages at the bottom of the wage distribution in several OECD countries (including Australia) and that a new class of 'working poor' has emerged (OECD, 1995: 21-2).

The results indicate that the wage incomes of full-time Australian workers are distributed more equally than broader income concepts. Although the distribution of wage incomes among full-time workers became more unequal over the 1980s, it does not appear that the trend can be described as reflecting a disappearing middle; rather, it reflects a pulling away of those in the top decile of the distribution from the remainder. Several pieces of evidence indicate that increasing unemployment is associated with greater inequality of total earnings, although the nature of this relationship requires further study. Among the full-time workforce, the substantial increase in inequality over the 1980s appears to reflect an increase within rather than between socioeconomic categories.

Overall, the results confirm that Australian developments broadly mirror those identified by Atkinson (1993) for the United Kingdom, with the rise in inequality reflecting two factors: the shift from full-time work and the increased disparity in labour market earnings. Finally, the cross-national comparisons highlight the very important role which the distribution of factor incomes (mainly earnings) plays in Australia in shaping the distribution of disposable incomes.

Sustained levels of unemployment have given rise to increased concern that full employment may not become a reality in the foreseeable future. Instead, industrial economies look set to experience periods of economic growth associated with increased participation and thus accompanied by little or no decline in unemployment, interupted by sharp recessionary interludes during which the levels of unemployment and long-term unemployment ratchet ever-upward. Whatever the truth of such scenarios, it does seem that what happens in the labour market will continue to hold the key to the attainment of social justice in Australia - both within the workforce and within society as a whole.

This explains why such intense interest has focused on labour market and industrial relations policies and the arguments which underlie them. At one extreme are those who favour a deregulatory approach designed to increase flexibility encourage growth and the rising real wages which will ultimately

flow from the growth in national income. At the other are those who stress that Australian wage and labour market policies have, on the whole, performed well in the past and should form the foundation on which to build further reforms. The results in this paper do not directly address the relative merits of these alternative positions. They do, however, highlight the central role which labour market incomes - and access to those incomes - play in the broader distributional context.

Appendix

This Appendix presents the detailed earnings function estimates which were used to derive the earnings capacity estimates presented in Table 5 in the main paper. The variables used in the regression models are defined in Table A.1, while Tables A.2 and A.3 present the earnings function estimates for females and males, respectively. These estimates were derived from observations for each country on a sample of all individuals in the relevant age range (25-55 years), including both single and married people.

Table A.1: List of Explanatory Variables Included in the Estimated Earnings Functions[a]

Variable name	Definition
EXPER	Age in years **minus** years of education **minus** five
EXPSQD	EXPER squared
EDUCI	No or very low education
EDUC2	Low education
EDUC3[*]	Education to high school level or equivalent
EDUC4	Education beyond high school but below college level
EDUC5	College level education or higher
OCC1	Professional or administrative occupation
OCC2	Sales, service or clerical occupation
OCC3[*]	Blue collar occupation
INDI	Primary industry
IND2[*]	Manufacturing industry
IND3	Commerce industry
IND4	Other service industry
IND5	Financial service industry
IND6	Utilities industry
IND7	Construction industry
NATIVE	Equals 1 if native born, equals zero otherwise (i.e. overseas-born)
MARRIED	Equals 1 if married, equals zero otherwise
YNGCHILD	Equals 1 if youngest child aged under 6, equals zero otherwise
OLDCHLD	Equals 1 if youngest child aged 6 or over, equals zero otherwise

Note: a)   Variables indicated with an asterisk(*) were used as the control in the estimated regression equations.

Table A.2: Regression Estimates for Women Aged 25-55 who Worked Full Year, Full Time
(Dependent variable = log wage: standard errors in parentheses)

	United States 1986	Canada 1987	Australia 1986	Nether-lands 1987	Germany 1984
Sample size	1811	1747	951	267	405
Constant	9.398*	9.581*	9.42*	10.003*	10.060*
	(0.070)	(0.096)	(0.134)	(0.081)	(0.116)
Experience	0.034*	0.029*	0.009	0.052*	0.019*
	(0.006)	(0.007)	(0.011)	(0.007)	(0.010)
Experience Squared (X10,000)	-7.912*	-5.132*	-1.251	-8.322*	-2.826
	(1.3410)	(1.615)	(2.718)	(1.660)	(2.459)
Low/No education[a]	-0.254*	-0.307*	na	-0.371*	na
	(0.096)	(0.071)		(0.041)	
Low education	-0.135*	-0.186	-0.019	-0.135*	-0.222*
	(0.049)	(0.043)	(0.065)	(0.036)	(0.051)
Other education	-0.138*	0.108*	0.095	na	-0.010
	(0.031)	(0.034)	(0.065)		(0.061)
College education	0.366*	0.330*	0.321*	0.299*	0.268*
	(0.034)	(0.043)	(0.082)	(0.053)	(0.072)
Professional[b]	0.254*	0.375*	0.405*	na	0.309*
	(0.049)	(0.065)	(0.072)		(0.078)
Sales, service, clerical	0.034	0.094	0.155*	na	0.119*
	(0.056)	(0.062)	(0.058)		(0.058)
Primary[c]	-0.194*	-0.045	-0.222	0.211	0.430
	(0.106)	(0.097)	(0.151)	(0.220)	(0.347)
Commerce	-0.308*	-0.218*	-0.193*	-0.079	-0.109
	(0.045)	(0.060)	(0.072)	(0.054)	(0.072)
Other service	-0.172*	-0.148*	0.100	0.099*	-0.053
	(0.038)	(0.053)	(0.062)	(0.044)	(0.054)
Financial services	-0.074	-0.142*	0.093	na	0.070
	(0.048)	(0.064)	(0.083)		(0.074)
Utilities	0.122*	0.014	-0.034	0.113	0.092
	(0.057)	(0.071)	(0.099)	(0.074)	(0.132)
Construction	0.106	-0.016	0.126	0.065	0.234
	(0.115)	(0.126)	(0.209)	(0.105)	(0.162)
Native-born	0.019	-0.009	0.006	na	0.001
	(0.027)	(0.037)	(0.042)		(0.050)
Married	-0.037	-0.085*	0.022	0.039	0.005
	(0.027)	(0.029)	(0.042)	(0.028)	(0.040)
Child < 6	-0.104*	0.000	-0.338*	0.007	-0.138*
	(0.036)	(0.042)	(0.065)	(0.084)	(0.066)
Child > = 6	-0.126*	-0.156*	-0.150*	-0.155*	-0.128*
	(0.027)	(0.032)	(0.048)	(0.052)	(0.043)

Notes: a) The missing education category is High school education.
b) The missing occupational category is Blue collar.
c) The missing industry category is Manufacturing.
* = statistically significant at the 10 per cent level.

Table A.3: Regression Estimates for Men Aged 25-55 who Worked Full Year, Full Time
(Dependent variable = log wage: standard errors in parentheses)

	United States 1986	Canada 1987	Australia 1986	Nether- lands 1987	Germany 1984
Sample size	3352	3460	2709	1776	1603
Constant	9.483*	9.835*	9.572*	10.203*	10.005*
	(0.055)	(0.051)	(0.067)	(0.051)	(0.151)
Experience	0.029*	0.033*	0.026*	0.051*	0.043*
	(0.005)	(0.004)	(0.006)	(0.004)	(0.004)
Experience Squared (X10,000)	-4.287*	-5.135*	-4.851*	-6.984*	-8.010*
	(1.063)	(0.842)	(1.370)	(0.819)	(0.977)
Low/No education[a]	-0.492*	-0.221*	na	-0.479*	na
	(0.079)	(0.034)		(0.025)	
Low education	-0.252*	-0.090*	-0.059*	-0.173*	-0.119*
	(0.034)	(0.024)	(0.035)	(0.025)	(0.025)
Other education	0.168*	0.087*	0.025	na	0.090*
	(0.027)	(0.022)	(0.033)		(0.023)
College education	0.411*	0.286*	0.220*	0.271*	0.290*
	(0.028)	(0.028)	(0.042)	(0.031)	(0.028)
Professional[b]	0.147*	0.107*	0.236*	na	0.276*
	(0.027)	(0.023)	(0.026)		(0.026)
Sales, service, clerical	-0.035	-0.058*	0.078*	na	0.102*
	(0.029)	(0.024)	(0.031)		(0.020)
Primary[c]	-0.224*	0.069	-0.209*	-0.085	-0.013
	(0.061)	(0.032)	(0.045)	(0.062)	(0.050)
Commerce	-0.165*	-0.170*	-0.113*	0.001	-0.062*
	(0.031)	(0.027)	(0.034)	(0.024)	(0.026)
Other service	-0.228*	-0.156*	-0.070*	-0.002	-0.096*
	(0.027)	(0.025)	(0.031)	(0.020)	(0.021)
Financial services	0.019	-0.101*	0.012	na	0.140*
	(0.051)	(0.045)	(0.041)		(0.038)
Utilities	0.083*	-0.003	0.095*	-0.014	-0.061*
	(0.034)	(0.027)	(0.033)	(0.030)	(0.028)
Construction	-0.043	-0.154	-0.015	-0.032	-0.096*
	(0.039)	(0.036)	(0.043)	(0.028)	(0.029)
Native-born	0.178*	0.062*	0.018	na	0.060*
	(0.025)	(0.024)	(0.023)		(0.024)
Married	0.112*	0.054*	0.090*	0.057*	0.018
	(0.025)	(0.023)	(0.029)	(0.022)	(0.022)
Child < 6	0.014	0.002	0.002	0.022	0.025
	(0.027)	(0.023)	(0.028)	(0.021)	(0.022)
Child > = 6	0.029	0.005	-0.004	0.021	0.005
	(0.022)	(0.020)	(0.027)	(0.020)	(0.017)

Notes: a) The missing education category is High school education.
   b) The missing occupational category is Blue collar.
   c) The missing industry category is Manufacturing.
   * = statistically significant at the 10 per cent level.

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