



# Gender Pay Differentials in Low-Paid Employment

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# Contents

## Executive summary

<b>1. Introduction</b>	<b>8</b>
1.1 Background of this project	8
1.2 Approach and research methods	9
<b>2. Gendered patterns of work in Australian labour markets</b>	<b>11</b>
2.1 Introduction	11
2.2 Identifying low-paid industries and occupations	11
2.3 Recent trends in the gender composition of employment by industry and occupation	14
2.4 Summary	18
<b>3. Raw gender pay differences by industry and occupation</b>	<b>19</b>
3.1 Introduction	19
3.2 Full-time employees	19
3.3 All employees	22
3.4 Recent trends in female earnings and the raw gender pay gap by industry and occupation	25
3.5 Summary	27
<b>4. Minimum wages and raw gender pay differentials</b>	<b>28</b>
4.1 Introduction	28
<b>5. Determinants of men's and women's earnings</b>	<b>34</b>
5.1 Introduction	34
5.2 Data and method	34
5.3 Understanding the gender pay gaps in low-paid employment	37
5.4 Causal processes and gender pay gaps – some insights from a qualitative project	44
5.5 Summary	47
<b>6. Gender pay differentials and women's labour supply</b>	<b>49</b>
6.1 Introduction	49
6.2 Links between wages and women's labour supply	49
6.3 Discussion and summary	51
<b>7. Summary and conclusion</b>	<b>52</b>
<b>8. References</b>	<b>54</b>
<b>Appendix A: Blinder and Oaxaca decomposition approach</b>	<b>56</b>
<b>Appendix B: Regression results for separate industry wage equations</b>	<b>57</b>
<b>Appendix C: Within-industry male and female wage equations</b>	<b>62</b>
<b>Appendix D: Summaries of studies of women's elasticity of labour supply</b>	<b>67</b>



## Executive summary

This report was prepared in response to the Australian Fair Pay Commission Secretariat's Request For Proposal 08/16, seeking the production of a research paper which addresses issues relevant to gender pay differentials in employment. The research outlined in this report has been designed to address the following issues identified by the Commission:

1. analyse the gender composition of a range of industries and occupations in Australia and identify any broad trends over time;
2. identify any important differences between major industry and occupational sub-divisions and draw appropriate comparisons with trends in the broader labour market;
3. identify any factors that might explain gender pay differentials between particular industries and occupations;
4. identify the role, if any, that minimum wages play in shaping any identified gender pay differentials;
5. examine how the hourly earnings of women have varied over time in industries and occupations and how these trends compare with female earnings overall;
6. examine how these trends have affected any gender pay differentials identified; and
7. identify how any identified gender pay differentials could affect the work decisions of women and what scope minimum wages might play in influencing those decisions.

By addressing these issues the report contributes new information on the trends in Australian wages, employment and institutional settings that have particular relevance to gender wage equity.

### Identifying low-paid industries and occupations

Different methods may be used to identify low-paid industries and occupations. In this report, low-paid industries and occupations are identified by reference to hourly cash earnings and the proportion of employees in the relevant industry/occupation who earn less than 110 per cent of the minimum wage. Using this approach, six industries are defined as low paid for the purposes of this report:

- Agriculture;
- Wholesale trade;
- Retail trade;
- Accommodation, cafés and restaurants;
- Cultural and recreational services; and
- Personal and other services.

Due to a concentration of high-paid jobs in just three occupational groups – Managers and administrators, Professionals and Associate professionals – a large number of occupations are defined as low paid:

- all categories of Clerical, sales and service workers;
- Intermediate production and transport workers;
- Labourers and related workers; and
- Tradespersons and related workers.

## **Patterns of low pay**

Gender pay differentials exist across paid industries and occupations. Generally gender differences are lower in low-paid industries than the differences estimated for higher paying industries.

Gender differences can also be identified within industries and occupations and these vary across the earnings distribution. Within low-paid industries and occupations, gender differences in earnings tend to be lower among those in the bottom quartile of the earnings distribution compared with those at the top.

Recent trends show that gender pay gaps within low-paid industries and occupations are neither uniform nor stable over time.

## **Minimum wages and gender pay differences**

This report uses an analytical method developed by Fortin and Lemieux (1997) to identify links between minimum wage decisions and gender differences in earnings in the Australian labour market between 1995–96 and 2005–06.

Analysis of data from the Australian Bureau of Statistics *Survey of Income and Housing* identifies a growth in real wages for men and women between 1995–96 and 2005–06. This increase was greatest for workers on relatively high wages and, thus, over the decade wage inequality increased for both men and women.

Previous international studies have identified a role for changes in the real value of the minimum wage in determining changes in wage inequality. However, in Australia between 1995–96 and 2005–06, the real and relative values of the minimum wage rate were maintained. Thus, changes in the real value of the minimum wage rate cannot be identified as a source of the increases in wage inequality observed over the study period.

Women's over-representation in low-paid jobs implies that the current gender pay gap would be greater if minimum wage adjustments had not been introduced during 1995 and 2005. Analysis shows that the minimum wage adjustments awarded between 1995 and 2005 contributed to a reduction in the gender pay gap by approximately 1.2 percentage points.

## **Explaining differences in men's and women's earnings**

Gender pay gaps are frequently attributed to women's over-representation in part-time and casual forms of employment. However, there are limits to which patterns of part-time or casual work can provide a full explanation of gender differences in earnings, particularly hourly earnings.

There are two low-paid industry groups, Wholesale trade and Cultural and recreational services, where part-time or casual status among men is associated with higher relative wages and, after controlling for other variables, attracts an hourly premium. This does not occur for women in any of the low-paid industries identified in this study and there is an earnings penalty for part-time or casual status for women working in Wholesale trade and Cultural and recreational services.

Other employee characteristics, such as being single, having dependent children and union membership, have different links in terms of the effects on women's and men's earnings. These characteristics are associated with greater reductions in earnings for women than is



the case for men. These links, however, vary across industries and there is little uniformity across low-paid sectors.

In Retail trade, Wholesale trade and Cultural and recreational services the main driver of the observed gender pay gap appears to be gender differences in the form of contract (casual) and employment status (with women more likely to be employed in part-time work). In Personal and other services, gender difference in union membership is the key underpinning factor.

Standard economic theory alone is unable to explain the identified links and studies of gender differences in pay. Institutional factors are likely to play an important role in the valuation of women's skills.

Previous qualitative research gives some insights into the role that centrally determined wage decisions can play in the clear identification and implementation of minimum wages. This is important in contexts where individual employees or employers face challenges in the negotiation or determination of appropriate employment conditions.

### **Links between wages and decisions about workforce participation**

Standard economic theory posits a relatively straightforward link between wage levels and individuals' decisions to engage in paid work. Generally higher wages are linked with higher levels of labour force participation.

However, predictions for women's labour force participation differ for increases in women's own wages compared with increases in family income. Increases in women's own wages are predicted to increase their participation in the labour force. Increases in family income are predicted to reduce women's labour force participation.

Earnings structures which entrench relatively low earnings among women act to reinforce existing divisions of labour in which women become the secondary earners in their families and, in many cases, forgo formal labour market participation. In this context, labour market structures which reduce gender pay gaps play a potentially important role in reducing traditional gendered divisions of labour within households and are likely to have a long-term positive impact on gender pay equality.

### **Key finding**

This study concludes that minimum wage decisions are one of a range of important factors influencing gender differences and patterns of women's labour market participation. Such decisions cannot be isolated from the broad social and economic environment in which they operate. The role that minimum wage decisions play appears to be linked not only to their role as an important source of wage growth for many women but also as a determinant of women's involvement in paid work. This latter effect of minimum wages may have long-lasting effects on gender-based pay equality in the Australian labour market.

## 1. Introduction

### 1.1 Background of this project

The extent of low-paid work and particular features of its distribution are important public policy issues. The growth in low-paid work in recent decades has been an important contributory factor in the increasing levels of pay inequality in Australia and other industrialised countries. At the same time, a continuing focus of policy debate is the persistence of a substantial gender pay gap.

Previous work (Austen, 2003; Austen, Jefferson and Thein, 2003; Preston and Austen, 2001) has shown that those workers who were at the low end of wage distribution in Australia in the mid-1990s and, thus, most likely be affected by changes in minimum wage rates were women, immigrants, those workers with low levels of marketable skills (such as educational qualifications) and workers in part-time jobs in small firms. Women's high representation among low-wage earners contributes to a widely recognised gap, or difference, between men's and women's earnings, often referred to as a 'gender pay gap'.

Women's relatively low earnings are commonly attributed to a complex and linked range of factors including:

- individual characteristics such as workforce experience and occupational choice;
- social characteristics such as household structures and responsibilities, employer preferences and organisational policies and practices; and
- institutional factors associated with wage setting and welfare policies and structures.

Typically it is recognised that these factors are not discrete and that combinations of individual preferences and choices, together with socially prescribed norms, will contribute to women's labour market experiences.

Literature from both Australia and overseas suggests that wage-setting institutions and minimum wage laws are particularly important factors affecting gender wage ratios: 'The ability of countries to influence the gender pay ratio depends on labour market institutions' (Gregory, 1999: 277).

In general terms, decentralised approaches to wage determination are held to be less favourable to women, particularly women at the lower end of the earnings distribution (Blau and Kahn, 1992; Daly *et al.*, 2006; Gregory and Daly, 1990; Gregory and Ho, 1985; Rubery, 1992; Whitehouse, 1992). Centralised wage fixing processes appear to be important in providing minimum conditions for those in relatively weak bargaining positions. This has special relevance for women as they are less unionised than men and it has been argued that this has resulted in lower levels of access to one means of support and advocacy (Lee, 1994).

In recent years, there has been a concern that women are in a relatively vulnerable position in an increasingly individualised labour market (Preston, Jefferson and Seymour, 2006). Contrary to expectations, however, Australia's national gender wage ratio has remained remarkably stable throughout a prolonged era of significant labour market deregulation since the mid 1990s. Less aggregated statistics show, however, that a stable national gender wage ratio neglects important changes at disaggregated levels of analysis (Preston and Jefferson, 2007) and demonstrates the significance of studies that focus on specific sectors of the labour market. Supporting this, evidence compiled in a range of studies has indicated that the move in Australia towards individual employment contracts away

from industry-based awards and collective agreements particularly disadvantages specific groups of women (Gregory, 1999; Lee and Sheldon, 1997).

This report is highly relevant in the context of these issues and trends. It was prepared specifically in response to the Australian Fair Pay Commission Secretariat's Request For Proposal 08/16, seeking the production of a research paper which addresses issues relevant to gender pay differentials in low-paid employment. The research outlined in this report has been designed to address the following issues identified by the Commission:

- analyse the gender composition of a range of industries and occupations in Australia; and identify any broad trends over time;
- identify any important differences between major industry and occupational sub-divisions and draw appropriate comparisons with trends in the broader labour market;
- identify any factors that might explain gender pay differentials between particular industries and occupations;
- identify the role, if any, that minimum wages play in shaping any identified gender pay differentials;
- examine how the hourly earnings of women have varied over time in industries and occupations and how these trends compare with female earnings overall;
- examine how these trends have affected any gender pay differentials identified; and
- identify how any identified gender pay differentials could affect the work decisions of women and what scope minimum wages might play in influencing those decisions.

By addressing these issues the report contributes new information on the trends in Australian wages, employment and institutional settings that have particular relevance to gender wage equity.

## 1.2 Approach and research methods

The Commission's list of issues requires, first, a comprehensive description of the gender composition of industry and occupational sectors of the Australian labour market and an analysis of recent trends in this composition. This task is addressed in **section 2** of this report, where we use data from a range of sources to first identify low-paid industries and occupations and then to examine the gender composition of employment across industry and occupational groups. Data on changes in the gender breakdown of jobs in industries and occupations over the 10 years to 2005–06 are also provided in this section.

**Section 3** of the report responds to the request for information on the trends in women's earnings, how these have compared with the growth in men's earnings, and how they have varied across low- and high-paid industries and occupations. In this section we also identify the extent of, and trends in, gender wage differentials based on measures of weekly and hourly earnings.

**Section 4** addresses the request for information on the role of minimum wages in shaping gender pay differentials. In this part of the report we use unpublished data from the 1995–96 and 2005–06 Australian Bureau of Statistics (ABS) *Survey of Income and Housing* (SIH)<sup>1</sup> to explore the relationship between the minimum wage rate and the

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1. The survey, formerly known as the *Survey of Income and Housing Costs* (SIHC), provides information on the sources of household income and amounts received, as well as information on other household and personal characteristics. The survey includes only usual residents in private dwellings and covers 98 per cent of persons living in Australia.

distribution of male and female hourly earnings. In this section we also report the results of our study of the effects of changes in the minimum wage rate on the raw gender pay gap.

**Section 5** is devoted, first, to a quantitative analysis of the possible causes of observed differences in the earnings of Australian men and women. Data from the Household Income and Labour Dynamics in Australia (HILDA) Survey are used to identify employee characteristics that might help explain these differences. The procedures implemented in this stage of the analysis, informed especially by human capital theory, also identify the extent of the 'unexplained' gender pay gap, and how this varies across industries and occupations.

Questions about the causes of wage differences between men and women that are not associated with measured employee or workplace characteristics are relatively more complex. The second part of **section 5** uses insights from recent qualitative data collection and analysis on the negotiation and implementation of wages and employment conditions among low-paid women. Insights from the quantitative and qualitative analysis are then discussed with reference to national and international literature on low-paid work and its determinants.

The key focus of **section 6** is the potential impact of gender wage differentials on women's working decisions. A comprehensive review of recent literature on the determinants of Australian women's labour force participation and the elasticity of women's labour supply is provided in this section. This analysis provides a basis for a discussion of the possible effects on labour supply of change in gender wage differentials in low-wage industries and occupations.

It should be noted that while the project requires an analysis of gender pay differentials, the data used throughout this report is wage data. It should be noted that, for the purposes of this report, wage data are assumed to be a proxy for the potentially broader term of 'pay' and the terms 'wage' and 'pay' are treated as largely interchangeable in this report.

The final section of the report provides an analysis of the interplay between the various determinants of patterns of low pay that have been identified in each stage. The discussion consolidates and integrates the project's findings.

## 2. Gendered patterns of work in Australian labour markets

### 2.1 Introduction

This section identifies and discusses:

- industries and occupations that may be considered as having relatively low levels of earnings;
- the gender composition of industries and occupations and broad changes over time; and
- differences between major industry and occupation categories and their comparison with trends in the broader labour market.

### 2.2 Identifying low-paid industries and occupations

There are different approaches to defining low-paid industries and occupations. One method, recently used by McGuinness *et al.* (2007), defines a specific hourly wage as a 'low' rate and examines the number and proportion of employees who are paid at or below that rate. This approach can be used to identify industry and occupational concentrations of low-paid work among full-time and part-time employees. Another approach is to look at relative earnings between industries and occupations and to define the low paid with reference to which groups are paid less than the national average. Table 1, below, provides a summary of industry-level wages information relevant to both approaches. Columns 1 and 2 show average hourly earnings data from the May 2006 ABS *Survey of Employee Earnings and Hours* (Australian Bureau of Statistics, 2007). These data show that employees in seven industries have both average hourly ordinary and total cash earnings below the national average: Manufacturing; Wholesale trade; Retail trade; Transport and storage; Accommodation, cafés and restaurants; Cultural and recreational services; and Personal and other services.

The figures in columns 3 and 4 show the proportion of workers in each industry earning an hourly wage rate at or below 110 per cent of the minimum wage in 2006. This approach to identifying low-paid industries is the one used by McGuinness *et al.* (2007) in their analysis of low-paid employment based on HILDA data for workers aged over 21 years. The figures in columns 3 and 4 are derived from 2005–06 SIH data for all wage and salary workers. This survey provides a measure of total weekly employee income for 10,266 workers with positive hours of work and reliable industry and occupational information. The SIH also provides a measure of the number of hours usually worked in both main and secondary jobs. It is thus possible to construct a measure of hourly earnings from the SIH results.

There is a high degree of consistency between the industries identified as low paid in columns 1 and 2 and those identified using the alternative approach in column 3. That is, in the case of full-time employment (to which columns 1 to 3 relate), with the exception of Manufacturing, industries with below-average hourly cash earnings also have above-average percentages of low-paid employees. There is also a relatively high incidence of low-paid part-time workers in these particular industries.

In summary, applying the common methods of identifying low-paid work yields six industries that can be defined as low paid:

- Agriculture;
- Wholesale trade;
- Retail trade;
- Accommodation, cafés and restaurants;
- Cultural and recreational services; and
- Personal and other services.

These industries form the basis of much of the analysis conducted in the remainder of this report.

**Table 1: Average earnings and incidence of low-paid employees by industry, 2006**

<b>Industry (ANZSIC 1993)</b>	<b>1 Average total hourly cash earnings*</b>	<b>2 Average ordinary-time cash earnings</b>	<b>3 % of full-time employees that are low paid</b>	<b>4 % of part-time employees that are low paid</b>
Agriculture forestry and fishing	N/A	N/A	50.0	40.4
Mining	37.50	37.40	1.9	0.0
Manufacturing	24.90	24.20	15.2	25.7
Electricity gas and water supply	33.60	32.40	2.7	9.1
Construction	26.60	25.60	18.9	21.1
Wholesale trade	24.10	23.80	19.0	25.6
Retail trade	19.60	19.40	31.2	49.6
Accommodation, cafés and restaurants	19.20	19.10	28.5	43.2
Transport and storage	26.30	25.60	13.5	20.3
Communication services	31.50	31.30	8.0	11.1
Finance and insurance	29.80	29.80	6.9	16.0
Property and business services	26.90	26.80	11.6	22.1
Government administration and defence	27.50	27.30	3.1	16.5
Education	31.50	31.50	5.5	15.8
Health and community services	27.30	26.60	13.2	16.2
Cultural and recreational services	25.40	25.20	15.8	34.1
Personal and other services	25.50	25.00	17.5	41.1
All industries	26.30	26.00	15.4	30.8

Sources: \*Columns 1 and 2, for full-time non-managerial employees, Australian Bureau of Statistics (2007a) *Employee Earnings and Hours*, Catalogue 6306.0 Table 7; Columns 3 and 4, *Survey of Income and Housing 2005–06*.

A similar approach can be taken to compare average hourly cash earnings and the concentration of low-waged employees between different occupational groups. This is shown in Table 2 below.

Due to a concentration of high-paid jobs in just three occupational groups – Managers and administrators, Professionals and Associate professionals – a large number of occupations have below-average full-time earnings. These include: Tradespersons; all categories of Clerical, sales and service workers; Intermediate production and transport workers; and

Labourers and related workers. The 110 per cent approach applied to adjusted hourly earnings data from the SIH identifies a similar range of occupations as low-wage for both full-time and part-time employment.

**Table 2: Average earnings and incidence of low-paid employees by occupation, unadjusted earnings data, 2006**

Occupation (ASCO)	1 Average total hourly cash earnings*	2 Average ordinary time hourly cash earnings*	3 % of full-time employees that are low paid	4 % of part-time employees that are low paid
Managers and administrators	N/A	N/A	11.2	11.8
Professionals	34.00	33.80	5.2	8.7
Associate professionals	29.80	29.60	12.4	18.7
Tradespersons and related workers	25.20	24.20	22.9	31.4
Advanced clerical and service workers	24.40	24.20	15.0	14.7
Intermediate clerical, sales and service workers	21.80	21.60	17.3	27.3
Intermediate production and transport workers	23.60	22.70	15.0	38.8
Elementary clerical, sales and service workers	19.40	19.00	29.1	49.6
Labourers and related workers	20.80	19.90	30.2	44.8
All occupations	26.30	26.00	15.4	30.8

Sources: \*Columns 1 and 2, For full-time non-managerial employees, Australian Bureau of Statistics (2007a) *Employee Earnings and Hours*, Table 6306001b.; Columns 3 and 4, *Survey of Income and Housing* 2005–06.

Before we proceed with our analysis of low-paid employment across industries and occupations, some important limitations with the data used in the identification of low-paid workers must be highlighted. These relate to the comparability of earnings data from important groups of workers. This study uses the 'raw' or unadjusted earnings data in the SIH. That is, we do not adjust the earnings data from this survey to take account of, for example, casual employment status. This will cause some inaccuracies in our analysis of gender pay gaps. First, the unadjusted earnings data will overstate the actual earnings of casual employees (the majority of whom are part-timers and female). This is because the data do not take into account the wage premiums typically paid to casual workers as compensation for their lack of access to holiday and sick leave.<sup>2</sup> By not taking this into account, the figures shown in Table 1 and Table 2 understate the proportion of low-paid workers, especially in industries with a high proportion of casual employees.

The unadjusted earnings data also tend to understate the measured earnings of workers aged under 21 years. Many state wage-fixing tribunals set youth wages as a proportion of the adult-wage rate sets. For example, in South Australia the minimum wage rate for 15- and 16-year olds is set at 50 per cent of the adult rate; for 17-year olds it is set at 60 per cent; for 18-year olds the rate is 70 per cent; for 19-year olds, 80 per cent; and for 20-year olds, 90 per cent. Due to this practice many young workers tend to be classified as low paid when, in fact, by community norms for young workers, they might not be thought of as low paid. Adjusting the data to take account of this would push down the measured

<sup>2</sup> A standard wage premium is 16.7 per cent.

proportion of low-paid workers, especially in those industries with high numbers of young workers.

The reason unadjusted earnings data were used in this report relates to the complexities involved in making adjustments to take account of casual employment status in particular. For example, the SIH does not identify casual employment status. Additionally, it is not possible to identify whether a young person is, in fact, paid according to standard practice. We do, however, comment on the effects of the use of unadjusted earnings data on critical issues such as the measured gender pay gap at a number of points throughout the report.

### 2.3 Recent trends in the gender composition of employment by industry and occupation

An important step in understanding the significance of low-paid employment for gender wage differentials is the analysis of the pattern of men's and women's employment across industries and occupations. This section presents data on these patterns and the trends that have been evident over the last decade.

#### Industry composition

Table 3 shows the proportion of employees in each industry by gender and full-time or part-time employment status. Across all industries, 46.6 per cent of all employees are males working full-time, 8.3 per cent are males working part-time, 24.4 per cent are females working full-time and 20.7 per cent are females working part-time.

The data in the table indicate that there is not a particularly high concentration of female full-time employment in the industries that have been classified as low paid. (These are highlighted in Table 3 and subsequent tables by **bold font**.) However, female part-time workers comprise a relatively large share of total employment in three low-paid industries: Wholesale trade; Retail trade; and Cultural and recreational services.



**Table 3: Composition of employment by industry, gender and employment status, 2006**

Industry (ANZSIC 1993)	Male Full-time %	Male Part-time %	Female Full-time %	Female Part-time %	Total employees ('000)
<b>Agriculture forestry and fishing</b>	<b>61.8</b>	<b>8.4</b>	<b>15.7</b>	<b>14.2</b>	<b>353.2</b>
Mining	87.0	1.9	8.4	2.6	123.7
Manufacturing	69.5	4.0	18.6	7.9	1,054.2
Electricity gas and water supply	74.7	1.3	19.4	4.5	85.5
Construction	79.8	8.0	5.1	7.1	892.4
<b>Wholesale trade</b>	<b>62.4</b>	<b>6.3</b>	<b>20.9</b>	<b>10.4</b>	<b>485.2</b>
<b>Retail trade</b>	<b>32.1</b>	<b>14.7</b>	<b>19.5</b>	<b>33.7</b>	<b>1,495.6</b>
<b>Accommodation, cafés and restaurants</b>	<b>24.9</b>	<b>16.7</b>	<b>22.2</b>	<b>36.3</b>	<b>476.8</b>
Transport and storage	66.4	8.4	15.7	9.5	463.0
Communication services	64.2	6.5	19.9	9.4	179.2
Finance and insurance	43.4	4.0	37.6	15.0	376.5
Property and business services	45.4	8.3	28.9	17.3	1,256.1
Government administration and defence	47.5	2.8	37.4	12.3	506.5
Education	23.8	7.4	38.6	30.2	696.5
Health and community services	16.5	5.0	38.8	39.7	1,061.6
<b>Cultural and recreational services</b>	<b>34.9</b>	<b>16.3</b>	<b>23.4</b>	<b>25.4</b>	<b>267.6</b>
<b>Personal and other services</b>	<b>43.4</b>	<b>8.0</b>	<b>28.8</b>	<b>19.8</b>	<b>398.5</b>
All industries	46.6	8.3	24.4	20.7	10,172.0

Source: Australian Bureau of Statistics (2007b) *Australian Labour Market Statistics*, Catalogue 6105.0 original series Table 3.Note: The **bold font** identifies industries that have been classified as low paid.

Table 4 shows the growth in the number of full-time and part-time employees between 1996 and 2006 across industry groups. These data show the relatively large growth in part-time employment for both men and women. The number of men in part-time employment, coming from a low base, grew by 52.6 per cent between 1996 and 2006, and has grown at higher-than-average rates in eight industries: Mining; Construction; Accommodation, cafés and restaurants; Transport and storage; Communication services; Finance and insurance; Property and business services; and Health and community services. Comprising the majority of part-time employees, the growth in the number of women in part-time employment was lower, at 32.6 per cent, than that of men between 1996 and 2006. However, this growth was much higher than the increase in full-time employment for both men and women. Above-average rates of growth in women's part-time employment were recorded in a relatively wide range of industries, including three low-paid industries: Accommodation, cafés and restaurants; Cultural and recreational services; and Personal and other services.

**Table 4: Percentage change in number of employees by industry, gender and employment status, 1996–2006**

Industry (ANZSIC 1993)	Male full-time %	Male part-time %	Female full-time %	Female part-time %	All employees %
<b>Agriculture forestry and fishing</b>	<b>-13.7</b>	<b>-11.1</b>	<b>-13.3</b>	<b>-17.5</b>	<b>-14.0</b>
Mining	40.6	123.8	2.5	13.3	36.4
Manufacturing	-7.8	23.2	-15.9	12.1	-7.2
Electricity gas and water supply	9.9	46.1	101.4	74.1	23.2
Construction	50.2	77.8	64.0	21.1	50.2
<b>Wholesale trade</b>	<b>-3.2</b>	<b>46.2</b>	<b>-3.4</b>	<b>-0.8</b>	<b>-0.9</b>
<b>Retail trade</b>	<b>4.8</b>	<b>37.4</b>	<b>16.3</b>	<b>32.4</b>	<b>19.7</b>
<b>Accommodation, cafés and restaurants</b>	<b>0.6</b>	<b>61.8</b>	<b>12.3</b>	<b>43.4</b>	<b>24.9</b>
Transport and storage	10.2	62.2	19.3	52.5	17.9
Communication services	9.9	197.3	-5.8	6.2	10.4
Finance and insurance	20.4	236.3	7.9	20.4	18.3
Property and business services	46.2	74.3	58.8	60.3	54.1
Government administration and defence	19.8	13.8	62.0	53.2	36.6
Education	-1.7	45.8	13.1	35.1	16.5
Health and community services	11.7	136.5	30.7	55.0	38.5
<b>Cultural and recreational services</b>	<b>41.0</b>	<b>50.9</b>	<b>36.2</b>	<b>42.7</b>	<b>41.8</b>
<b>Personal and other services</b>	<b>32.3</b>	<b>57.8</b>	<b>26.5</b>	<b>38.9</b>	<b>33.5</b>
All industries	13.4	52.6	20.7	36.4	22.1

Source: Australian Bureau of Statistics (2007b) *Australian Labour Market Statistics*, Catalogue 6105.0 original series Table 3.Note: The **bold font** identifies industries that have been classified as low paid.

### Occupational composition

Table 5 shows the gender composition of part- and full-time employment across the major occupational groups in 2006. The main features of the data in this table include the dominance of full-time work in the relatively high-paid occupations: Managers and administrators; Professionals; and Associate professionals. The lower-paid occupations, Tradespersons and Intermediate production and transport workers, have a relatively high proportion of male full-time workers. Other low-paid occupations are characterised by a higher-than-average proportion of female employees, most noticeably in the areas of clerical, sales and service work.

**Table 5: Composition of employment by occupation, gender and employment status, 2006**

Occupation (ASCO)	Male Full-time %	Male Part-time %	Female Full-time %	Female Part-time %	Total employees ('000)
Managers and administrators	69.0	4.1	21.3	5.6	853.1
Professionals	42.5	5.9	32.9	18.6	1,965.0
Associate professionals	50.1	4.5	32.2	13.2	1,283.6
<b>Tradespersons and related workers</b>	<b>83.3</b>	<b>6.7</b>	<b>6.2</b>	<b>3.9</b>	<b>1,287.4</b>
<b>Advanced clerical and service</b>	<b>10.2</b>	<b>2.8</b>	<b>43.6</b>	<b>43.3</b>	<b>393.9</b>
<b>Intermediate clerical, sales and service workers</b>	<b>21.9</b>	<b>5.7</b>	<b>37.4</b>	<b>35.0</b>	<b>1,693.3</b>
<b>Intermediate production and transport workers</b>	<b>75.0</b>	<b>12.4</b>	<b>6.6</b>	<b>6.0</b>	<b>851.2</b>
<b>Elementary clerical, sales and service workers</b>	<b>17.5</b>	<b>16.2</b>	<b>17.8</b>	<b>48.5</b>	<b>974.4</b>
<b>Labourers and related workers</b>	<b>43.9</b>	<b>20.1</b>	<b>14.4</b>	<b>21.6</b>	<b>870.0</b>
All occupations	46.6	8.3	24.4	20.7	10,172.0

Source: Australian Bureau of Statistics (2007b) *Australian Labour Market Statistics*, Catalogue 6105.0.Note: The **bold font** identifies occupations that have been classified as low paid.

The data in Table 6 show the change in the number of male and female employees working full-time and part-time in the major occupational groups between 1996 and 2006. An important feature of this table is the strong growth in the importance of part-time employment across the occupational groups and genders. While males employed part-time represent only a relatively small proportion of the total workforce, the growth of this employment category is relatively high among occupational groups that are generally aligned with higher levels of skill, education and or workforce experience. Lower rates of growth in the share of male part-time work occurred in intermediate and elementary occupational levels. The growth of women's part-time employment overall was lower. However, part-time employment growth was particularly high amongst Associate professionals and Tradespersons. Female full-time employment grew by a relatively large amount in the high-paid occupational groups: Managers and administrators, Professionals and Associate professionals.

**Table 6: Percentage change in number of employees by occupation, gender and employment status, 1996–2006**

Occupation (ASCO)	Male full-time %	Male part-time %	Female full-time %	Female part-time %	All employees %
Managers and administrators	26.7	103.0	71.5	18.6	35.8
Professionals	28.7	95.8	38.9	63.4	40.5
Associate professionals	22.7	100.5	70.8	136.3	48.1
<b>Tradespersons and related workers</b>	<b>7.7</b>	<b>67.4</b>	<b>17.0</b>	<b>48.8</b>	<b>12.1</b>
<b>Advanced clerical and service workers</b>	<b>25.9</b>	<b>103.0</b>	<b>-17.9</b>	<b>8.7</b>	<b>-2.4</b>
<b>Intermediate clerical, sales and service workers</b>	<b>7.5</b>	<b>69.8</b>	<b>10.2</b>	<b>41.0</b>	<b>21.2</b>
<b>Intermediate production and transport workers</b>	<b>4.1</b>	<b>44.8</b>	<b>-20.2</b>	<b>38.0</b>	<b>7.2</b>
<b>Elementary clerical, sales and service workers</b>	<b>-5.1</b>	<b>39.3</b>	<b>-11.3</b>	<b>28.1</b>	<b>13.6</b>
<b>Labourers and related workers</b>	<b>1.7</b>	<b>19.8</b>	<b>0.1</b>	<b>-2.4</b>	<b>3.7</b>
All occupations	13.4	52.6	20.7	36.4	22.1

Source: Australian Bureau of Statistics (2007b) *Australian Labour Market Statistics*, Catalogue 6105.0 original series Table 4.  
 Note: The **bold font** identifies occupations that have been classified as low paid.

## 2.4 Summary

Based on a range of indicators, six industries have been identified as low paid:

- Agriculture;
- Wholesale trade;
- Retail trade;
- Accommodation, cafés and restaurants;
- Cultural and recreational services; and
- Personal and other services.

There is a more diverse spread of low pay among occupational groups, with six of the nine major Australian Standard Classification of Occupations (ASCO) classifications showing some indication of low pay.

ABS data on the composition of industry employment indicate that there may be some relationship between gender, part-time employment and earnings. This is particularly important given growth in part-time employment over the past decade. However the potential links between these aspects of the labour market are not straightforward and it is not possible to define their existence and significance on the basis of the broad descriptive data considered so far. Further analysis constitutes the remainder of this report.

### 3. Raw gender pay differences by industry and occupation

#### 3.1 Introduction

The previous section demonstrated the large differences in the patterns of work of men and women. This section examines the raw gender pay differences that can be associated with these differences. The differences are 'raw' because they look at differences in average earnings that do not take into account possible differences in the characteristics of the men and women who comprise these groups of employees, such as education, employment experience and a range of other potentially important factors. The extent to which gendered patterns of earnings can be explained by the different characteristics of men and women employees is a later stage of analysis covered in section 5.

#### 3.2 Full-time employees

Ordinary-time earnings, rather than total earnings, are generally used as the basis for gender earnings comparisons for full-time workers. This is because, on average, men and women exhibit different patterns of full-time working hours: men typically work more overtime hours which increases their total earnings relative to women. Comparisons of ordinary-time earnings reduce the effects of gender differences in the working of overtime hours as an influence on relative earnings.

Table 7 and Table 8 contain 2006 ABS *Employee Earnings and Hours* (EEH) Survey data comparing average ordinary-time earnings for men and women by major industry and occupation groups. Both weekly and hourly comparisons are included. Gender pay differences vary considerably between industries and occupations. On average, women earn 90 per cent of the hourly ordinary-time cash earnings of men. Most of the low-paid industries record wage gaps that are greater than this. However, in the Accommodation, cafés and restaurants industry there is no measurable wage gap. The pattern for weekly earnings is similar, although the gap appears slightly larger on average, reflecting men's higher average weekly ordinary-time working hours.

The pattern of gender pay differences among occupational groups is mixed. A smaller-than-average gap exists in the low-paid occupational group of Elementary clerical sales and service workers. A relatively large gap exists in the high-paid occupational group of Associate professionals. However, a similar gap is evident for the low-paid group of Intermediate production and transport workers. In sum, it is not possible to identify a strong pattern in gender pay gaps across the broad ASCO occupational groups.

**Table 7: Average ordinary-time hourly cash earnings for full-time non-managerial adult employees, by gender and industry, May 2006**

Industry (ANZSIC 1993)	Average ordinary-time hourly cash earnings			Average ordinary-time weekly cash earnings		
	Male	Female	Female % of Male	Male	Female	Female % of Male
Mining	38.40	29.90	77.9	1,684.50	1,259.60	74.8
Manufacturing	24.70	22.50	91.1	945.80	858.00	90.7
Electricity gas and water supply	33.40	27.40	82.0	1,239.10	1,007.80	81.3
Construction	26.10	21.40	82.0	999.20	820.20	82.1
<b>Wholesale trade</b>	<b>24.90</b>	<b>21.60</b>	<b>86.7</b>	<b>961.50</b>	<b>825.50</b>	<b>85.9</b>
<b>Retail trade</b>	<b>20.20</b>	<b>17.90</b>	<b>88.6</b>	<b>776.80</b>	<b>680.80</b>	<b>87.6</b>
<b>Accommodation, cafés and restaurants</b>	<b>19.10</b>	<b>19.10</b>	<b>100.0</b>	<b>757.00</b>	<b>754.20</b>	<b>99.6</b>
Transport and storage	26.60	22.60	85.0	1,027.40	853.00	83.0
Communication services	32.40	28.90	89.2	1,198.10	1,059.20	88.4
Finance and insurance	33.90	26.00	76.7	1,296.50	982.30	75.8
Property and business services	29.00	23.70	81.7	1,121.70	898.20	80.1
Government administration and defence	27.50	27.20	98.9	1,019.90	996.20	97.7
Education	33.10	30.60	92.4	1,199.50	1,103.70	92.0
Health and community services	30.90	24.90	80.6	1,177.60	943.10	80.1
<b>Cultural and recreational services</b>	<b>26.80</b>	<b>23.10</b>	<b>86.2</b>	<b>1,016.00</b>	<b>877.70</b>	<b>86.4</b>
<b>Personal and other services</b>	<b>26.70</b>	<b>22.50</b>	<b>84.3</b>	<b>1,022.00</b>	<b>854.20</b>	<b>83.6</b>
All industries	27.00	24.30	90.0	1,035.90	915.30	88.4

Source: Australian Bureau of Statistics (2007a) *Employee Earnings and Hours*, Table 6306002.Notes: The industry classification of Agriculture is not included in the ABS estimates; the **bold font** identifies industries that have been classified as low paid.

**Table 8: Average ordinary-time hourly cash earnings for full-time non-managerial adult employees, by gender and occupation, May 2006**

Industry (ANZSIC 1993)	Average ordinary-time hourly cash earnings			Average ordinary-time weekly cash earnings		
	Male	Female	Female % of Male	Male	Female	Female % of Male
Professionals	36.00	31.60	87.8	1,356.00	1,168.70	86.2
Associate professionals	32.30	25.50	78.9	1,251.90	968.20	77.3
<b>Tradespersons and related workers</b>	<b>24.50</b>	<b>18.90</b>	<b>77.1</b>	<b>938.40</b>	<b>724.00</b>	<b>77.2</b>
<b>Advanced clerical and service workers</b>	<b>28.80</b>	<b>23.20</b>	<b>80.6</b>	<b>1,060.00</b>	<b>869.70</b>	<b>82.0</b>
<b>Intermediate clerical, sales and service workers</b>	<b>23.60</b>	<b>20.50</b>	<b>86.9</b>	<b>898.80</b>	<b>775.10</b>	<b>86.2</b>
<b>Intermediate production and transport workers</b>	<b>23.20</b>	<b>18.60</b>	<b>80.2</b>	<b>906.80</b>	<b>713.80</b>	<b>78.7</b>
<b>Elementary clerical, sales and service workers</b>	<b>19.90</b>	<b>18.10</b>	<b>91.0</b>	<b>766.80</b>	<b>684.50</b>	<b>89.3</b>
<b>Labourers and related workers</b>	<b>20.40</b>	<b>17.80</b>	<b>87.3</b>	<b>781.10</b>	<b>671.50</b>	<b>86.0</b>
All occupations	27.00	24.30	90.0	1,035.90	915.30	88.4

Source: Australian Bureau of Statistics (2007a) *Employee Earnings and Hours*, Table 6306001b.Note: The **bold font** identifies occupations that have been classified as low paid.

Gender pay differences can also be identified within industries. Table 9 uses wage distribution data to compare men's and women's weekly total cash earnings at the 10th, 25th, 50th, 75th and 90th percentile points on men's and women's earnings distributions. The data in the table show a pattern of higher gender earnings differences in the higher percentile earnings brackets of almost all industry groups. Across all industries, the gender wage difference at the 10th percentile of men's and women's earnings is only 7.9 per cent. At the 90th percentile point on the earnings distribution there is a 21 per cent difference between men's and women's earnings. This is consistent with research showing that there is a much larger gender pay gap among high-paid workers compared with low-paid workers (Miller, 2005).

**Table 9: Female/Male quartile, 10 per cent and 90 per cent earnings comparison, weekly total cash earnings, full-time non-managerial adult employees – by industry**

Industry (ANZSIC 1993)	10%	25%	50%	75%	90%
Mining	75.5	75.9	71.6	68.5	74.8
Manufacturing	90.2	89.7	83.7	80.2	82.3
Electricity gas and water supply	91.5	85.3	71.6	71.3	64.4
Construction	84.4	80.2	75.7	69.2	70.0
<b>Wholesale trade</b>	<b>94.3</b>	<b>89.1</b>	<b>87.0</b>	<b>82.8</b>	<b>74.4</b>
<b>Retail trade</b>	<b>96.4</b>	<b>91.5</b>	<b>86.4</b>	<b>81.9</b>	<b>85.1</b>
<b>Accommodation, cafés and restaurants</b>	<b>97.2</b>	<b>98.6</b>	<b>101.8</b>	<b>100.2</b>	<b>104.8</b>
Transport and storage	79.9	78.9	75.6	76.1	80.1
Communication services	93.1	86.7	90.4	85.7	82.0
Finance and insurance	91.0	87.0	78.1	73.6	73.6
Property and business services	91.8	87.8	82.0	73.8	69.1
Government administration and defence	103.8	101.9	97.2	93.7	92.9
Education	94.5	95.1	93.7	91.8	88.3
Health and community services	93.3	90.7	87.0	79.1	60.5
<b>Cultural and recreational services</b>	<b>98.3</b>	<b>92.8</b>	<b>92.2</b>	<b>90.3</b>	<b>81.9</b>
<b>Personal and other services</b>	<b>86.6</b>	<b>86.1</b>	<b>75.7</b>	<b>79.9</b>	<b>83.0</b>
All industries	92.1	89.7	87.3	83.8	78.6

Source: Australian Bureau of Statistics (2007a) *Employee Earnings and Hours*, Catalogue 6306.0, Table 6306004.

Notes: Total earnings rather than ordinary-time earnings are used as ordinary-time earnings are not measured in the EEH series. Earnings for the Agriculture industry classification are not included in this series. The **bold font** identifies industries that have been classified as low paid.

### 3.3 All employees

Gender earnings comparisons of full-time employees neglect the important role played by part-time work in the employment of women. Given that 46 per cent of all women work on a part-time basis and that 20.7 per cent of employees are women working in part-time jobs, this is an important omission. However, there are limited available data from which to undertake such an analysis and this has been an ongoing concern for researchers in this area (see for example, Preston & Jefferson, 2007, pp. 69–84). As noted above, the ABS EEH Survey publishes average working hour estimates for full-time employees only. The ABS *Average Weekly Earnings* (AWE) Survey also only provides estimates for full-time employees and, in addition, contains no estimates of working hours from which an hourly average can be derived. Furthermore, as described by the ABS (2008, p. 29) 'average weekly earnings statistics represent average gross (before tax) earnings of employees and do not relate to average award rates nor to the earnings of the "average person"'.

Data are available on the weekly earnings of both part-time and full-time workers. However, this still leaves some difficulties with gender earnings comparisons because the weekly hours of work of men and women differ significantly. Table 10 and Table 11 report weekly earnings data across industry and occupational groups. As might be expected, the gender differences in earnings are shown to be relatively large, primarily as a result of the high incidence of part-time work among female employees.



**Table 10: Average weekly total cash earnings for all employees, by gender and industry, May 2006**

Industry (ANZSIC 1993)	Male \$	Female \$	Female % of male
Mining	1,825.60	1,193.60	65.4
Manufacturing	1,060.00	778.20	73.4
Electricity gas and water supply	1,442.80	978.50	67.8
Construction	1,067.00	692.90	64.9
<b>Wholesale trade</b>	<b>1,037.30</b>	<b>751.40</b>	<b>72.4</b>
<b>Retail trade</b>	<b>612.40</b>	<b>395.90</b>	<b>64.6</b>
<b>Accommodation, cafés and restaurants</b>	<b>545.00</b>	<b>439.40</b>	<b>80.6</b>
Transport and storage	1,090.50	784.20	71.9
Communication services	1,189.20	885.80	74.5
Finance and insurance	1,555.60	899.20	57.8
Property and business services	1,097.40	702.90	64.1
Government administration and defence	1,095.40	890.70	81.3
Education	1,029.70	794.90	77.2
Health and community services	1,136.00	700.70	61.7
<b>Cultural and recreational services</b>	<b>783.70</b>	<b>550.40</b>	<b>70.2</b>
<b>Personal and other services</b>	<b>919.10</b>	<b>624.00</b>	<b>67.9</b>
All occupations	1,020.30	677.80	66.4

Sources: Australian Bureau of Statistics (2007a) *Employee Earnings and Hours*, Table 6306013. Earnings for the Agriculture industry classification are not included in this series.

Note: The **bold font** identifies industries that have been classified as low paid.

**Table 11: Average weekly total cash earnings for all employees, by gender and occupation, May 2006**

Occupation (ASCO)	Male \$	Female \$	Female % of male
Managers and administrators	1,816.90	1,387.50	76.4
Professionals	1,298.30	965.30	74.4
Associate professionals	1,179.20	833.40	70.7
<b>Tradespersons and related workers</b>	<b>951.80</b>	<b>579.10</b>	<b>60.8</b>
<b>Advanced clerical and service workers</b>	<b>906.20</b>	<b>697.00</b>	<b>76.9</b>
<b>Intermediate clerical, sales and service workers</b>	<b>770.20</b>	<b>561.20</b>	<b>72.9</b>
<b>Intermediate production and transport workers</b>	<b>939.60</b>	<b>558.70</b>	<b>59.5</b>
<b>Elementary clerical, sales and service workers</b>	<b>521.70</b>	<b>375.30</b>	<b>71.9</b>
<b>Labourers and related workers</b>	<b>699.40</b>	<b>434.00</b>	<b>62.1</b>
All occupations	1,020.30	677.80	66.4

Source: Australian Bureau of Statistics (2007a) *Employee Earnings and Hours*, Table 6306014.

Note: The **bold font** identifies occupations that have been classified as low paid.

A preferable approach to comparing men's and women's incomes is on the basis of the hourly earnings of both part-time and full-time employees. The data we derived from the SIH on the hourly earnings of all wage and salary earners enable this type of comparison. The information on average hourly earnings of male and female employees is presented in Table 12 and Table 13. As could be expected, the gender pay gap is smaller when hourly

instead of weekly earnings are used. Also to be expected, the gender pay gap is larger when hourly earnings are compared across all workers (as is done in Table 12 and Table 13) rather than full-time workers (as is done in Table 7 and Table 8).

**Table 12: Gender wage differences in the hourly total earnings of all males and female employees by industry, unadjusted earnings data, 2005–06**

Industry (ANZSIC 1993)	Male average	Female average	Female % of male
<b>Agriculture, forestry and fishing</b>	<b>16.37</b>	<b>17.24</b>	<b>105.3</b>
Mining	35.06	25.72	73.4
Manufacturing	22.94	19.70	85.8
Electricity gas and water supply	29.80	25.71	86.3
Construction	22.97	23.75	103.4
<b>Wholesale trade</b>	<b>21.60</b>	<b>19.13</b>	<b>88.6</b>
<b>Retail trade</b>	<b>17.31</b>	<b>15.71</b>	<b>90.8</b>
<b>Accommodation, cafés and restaurants</b>	<b>18.07</b>	<b>15.84</b>	<b>87.7</b>
Transport and storage	24.41	20.76	85.1
Communication services	25.92	20.16	77.8
Finance and insurance	31.77	22.11	69.6
Property and business services	27.73	21.98	79.3
Government administration and defence	28.42	25.72	90.5
Education	27.90	23.92	85.7
Health and community services	27.23	22.24	81.7
<b>Cultural and recreational services</b>	<b>22.38</b>	<b>21.79</b>	<b>97.4</b>
<b>Personal and other services</b>	<b>22.80</b>	<b>18.81</b>	<b>82.5</b>
All industries	23.85	20.60	86.4

Source: Australian Bureau of Statistics (2006) SIH unpublished data.

Note: The **bold font** identifies industries that have been classified as low paid.

**Table 13: Gender wage differences in hourly total earnings of all males and females employees by occupation, unadjusted earnings data, 2005–06**

Occupation	Male average	Female average	Female % male
Managers and administrators	31.91	28.76	90.1
Professionals	30.93	26.87	86.9
Associate professionals	26.64	21.21	79.6
<b>Tradespersons and related workers</b>	<b>20.99</b>	<b>15.87</b>	<b>75.6</b>
<b>Advanced clerical and service workers</b>	<b>26.31</b>	<b>22.31</b>	<b>84.8</b>
<b>Intermediate clerical, sales and service workers</b>	<b>20.36</b>	<b>18.47</b>	<b>90.7</b>
<b>Intermediate production and transport workers</b>	<b>20.99</b>	<b>16.86</b>	<b>80.3</b>
<b>Elementary clerical, sales and service workers</b>	<b>16.89</b>	<b>15.06</b>	<b>89.2</b>
<b>Labourers and related workers</b>	<b>17.65</b>	<b>15.85</b>	<b>89.8</b>
All occupations	23.85	20.60	86.4

Source: Australian Bureau of Statistics (2006), SIH unpublished data.

Note: The **bold font** identifies occupations that have been classified as low paid.

It is not possible to discern clear patterns in gender wage differences across industries and occupations from this data. The industry with the lowest hourly wage rates, Agriculture, forestry and fishing, also features a very small difference in the average hourly earnings of men and women. In contrast, Mining is characterised by both high average hourly wages and a large gender-based wage difference. However, a clear pattern does not exist across the other industries or the occupational groups. This indicates that an important source of gender wage differences across the economy as a whole is the differences in wage outcomes across industries and the segregation of men and women into different occupational and industry groups.

Before we proceed from this section it is important to note that the gender pay gaps identified in Table 12 and Table 13 are sensitive to the measure of earnings used in the analysis. As was noted at the conclusion to section 2.2, we have relied on unadjusted earnings figures that do not, for example, take account of the wage premiums typically received by casual workers to compensate for their lack of access to paid holiday and sick leave. Using SIH data, the only way of taking this into account is to adjust downwards (for example, by 16.7 per cent – the amount that would compensate for a typical casual loading of 20 per cent) the wages of all part-time workers. As many of these workers are women, this adjustment increases the measured gender pay gap. Specifically, when part-timers' wages are reduced by 16.7 per cent and juniors' wages are increased according to the details of the practices followed by a typical wage-setting authority (set out in section 2.2), the gender pay gap across the economy is estimated to be 4.9 percentage points larger than that shown in Table 12 and Table 13. That is, women's average earnings as a proportion of male average earnings falls from 86.4 per cent to 81.5 per cent. However, the pattern of the gender pay gap across industries and occupations remains unchanged.

### **3.4 Recent trends in female earnings and the raw gender pay gap by industry and occupation**

For the purposes of examining how the hourly earnings of men and women in low-paid industries have varied over time, we again rely on data from the SIH. In coming years, as additional waves of the HILDA Survey are completed it is likely to become a key resource for examining changes in the gender gap in hourly earnings over time. However, at present only the SIH provides data on hourly earnings for all workers for more than six years.

Table 14 presents hourly earnings data from the SIH that show the growth in women's real hourly earnings and changes in the gender pay gap for all industry groups between 1995–96 and 2005–06.<sup>3</sup> The table shows that women's real hourly earnings growth was relatively high in three low-paid industries: Agriculture, Cultural and recreational services and Personal and other services. However, it was substantially below the industry average in the other three low-paid industries: Wholesale trade, Retail trade and Accommodation, cafés and restaurants.

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<sup>3</sup> Measures of the changes in earnings across occupations were not possible due to changes in the occupational classifications used in the SIH between 1995–96 and 2005–06.

**Table 14: All female average hourly total earnings per cent change by industry, unadjusted earnings data, 1995–96 to 2005–06**

Industry (ANZSIC 1993)	Average hourly earnings 1995–06 (\$2005)	Average hourly earnings 2005–06 (\$2005)	Growth in real hourly earnings 1995–96 to 2005–06 %
<b>Agriculture, forestry and fishing</b>	<b>12.77</b>	<b>17.28</b>	<b>35.3</b>
Mining	24.83	25.78	3.8
Manufacturing	16.37	19.74	20.6
Electricity gas and water supply	20.60	25.76	25.1
Construction	20.58	23.81	15.7
<b>Wholesale trade</b>	<b>17.63</b>	<b>19.18</b>	<b>8.8</b>
<b>Retail trade</b>	<b>14.27</b>	<b>15.74</b>	<b>10.3</b>
<b>Accommodation, cafés and restaurants</b>	<b>15.28</b>	<b>15.88</b>	<b>3.9</b>
Transport and storage	18.34	20.82	13.5
Communication services	19.07	20.22	6.0
Finance and insurance	17.74	22.16	24.9
Property and business services	18.42	22.03	19.6
Government administration and defence	20.60	25.79	25.2
Education	21.16	23.99	13.4
Health and community services	19.69	22.29	13.2
<b>Cultural and recreational services</b>	<b>17.70</b>	<b>21.84</b>	<b>23.4</b>
<b>Personal and other services</b>	<b>15.36</b>	<b>18.86</b>	<b>22.8</b>
All industries	17.83	20.65	15.8

Source: Australian Bureau of Statistics (2006) SIH, unpublished data.

Note: The **bold font** identifies industries that have been classified as low paid.

Table 15 uses the same earnings data to construct estimates of the percent point change in gender earnings differences between 1995–96 and 2005–06. There is no clear relationship across industries between the growth in women's real hourly earnings through this period and changes in gender wage differences. However, it is notable that Retail trade and Accommodation, cafés and restaurants experienced both limited earnings growth and an increase in the gender disparity in earnings through this period.

**Table 15: Gender differences in hourly total earnings of all males and females and percentage change, unadjusted earnings data, by industry, 1995–06 to 2005–06**

Industry (ANZSIC 1993)	Female % male earnings 1995–96	Female % male earnings 2005–06	% point change 1995–95 to 2005–06
<b>Agriculture, forestry and fishing</b>	<b>91.1</b>	<b>105.3</b>	<b>14.2</b>
Mining	82.4	73.4	–9.1
Manufacturing	82.7	85.8	3.1
Electricity gas and water supply	86.5	86.3	–0.3
Construction	113.6	103.4	–10.2
<b>Wholesale trade</b>	<b>88.1</b>	<b>88.6</b>	<b>0.5</b>
<b>Retail trade</b>	<b>99.1</b>	<b>90.8</b>	<b>–8.3</b>
<b>Accommodation, cafés and restaurants</b>	<b>95.7</b>	<b>87.7</b>	<b>–8.1</b>
Transport and storage	82.3	85.1	2.8
Communication services	85.6	77.8	–7.9
Finance and insurance	63.6	69.6	6.0
Property and business services	78.6	79.3	0.7
Government administration and defence	87.4	90.5	3.1
Education	90.3	85.7	–4.6
Health and community services	84.4	81.7	–2.7
<b>Cultural and recreational services</b>	<b>89.8</b>	<b>97.4</b>	<b>7.6</b>
<b>Personal and other services</b>	<b>77.4</b>	<b>82.5</b>	<b>5.1</b>
All industries	87.5	86.4	–1.1

Source: Australian Bureau of Statistics (2006) SIH, unpublished data.

Note: The **bold font** identifies industries that have been classified as low paid.

### 3.5 Summary

The information in this section illustrates that gender patterns of low-paid employment are relatively complex. It is not possible to identify simple, direct relationships between changes in the industry and occupation composition of employment as a source of change in the gender wage differential. However, it is important to note that in the last decade women's employment increased in occupational categories associated with relatively high pay and this is likely to have contributed to a reduction in the overall gender pay gap. The information presented in this section also shows that gender pay differentials exist within low-paid industries and occupations. However, these differences are often less than the differences estimated for higher paying industries. Further, the gender pay differences within industries and occupations vary across the earnings distribution. Within low-paid industries and occupations, gender differences in earnings tend to be lower among those in the bottom part of the earnings distribution compared with those at the top. However, recent trends show that gender pay gaps within low-paid industries and occupations are neither uniform nor stable over time.

In general, industry and occupation earnings estimates are consistent with literature that indicates gender differences in earnings are related to institutional and structural features associated with part-time work and women's under-representation in high-paying industry and occupational groups. Specific aspects of the links and possible causal relationships between low pay and gender are analysed in the following sections.

## 4. Minimum wages and raw gender pay differentials

### 4.1 Introduction

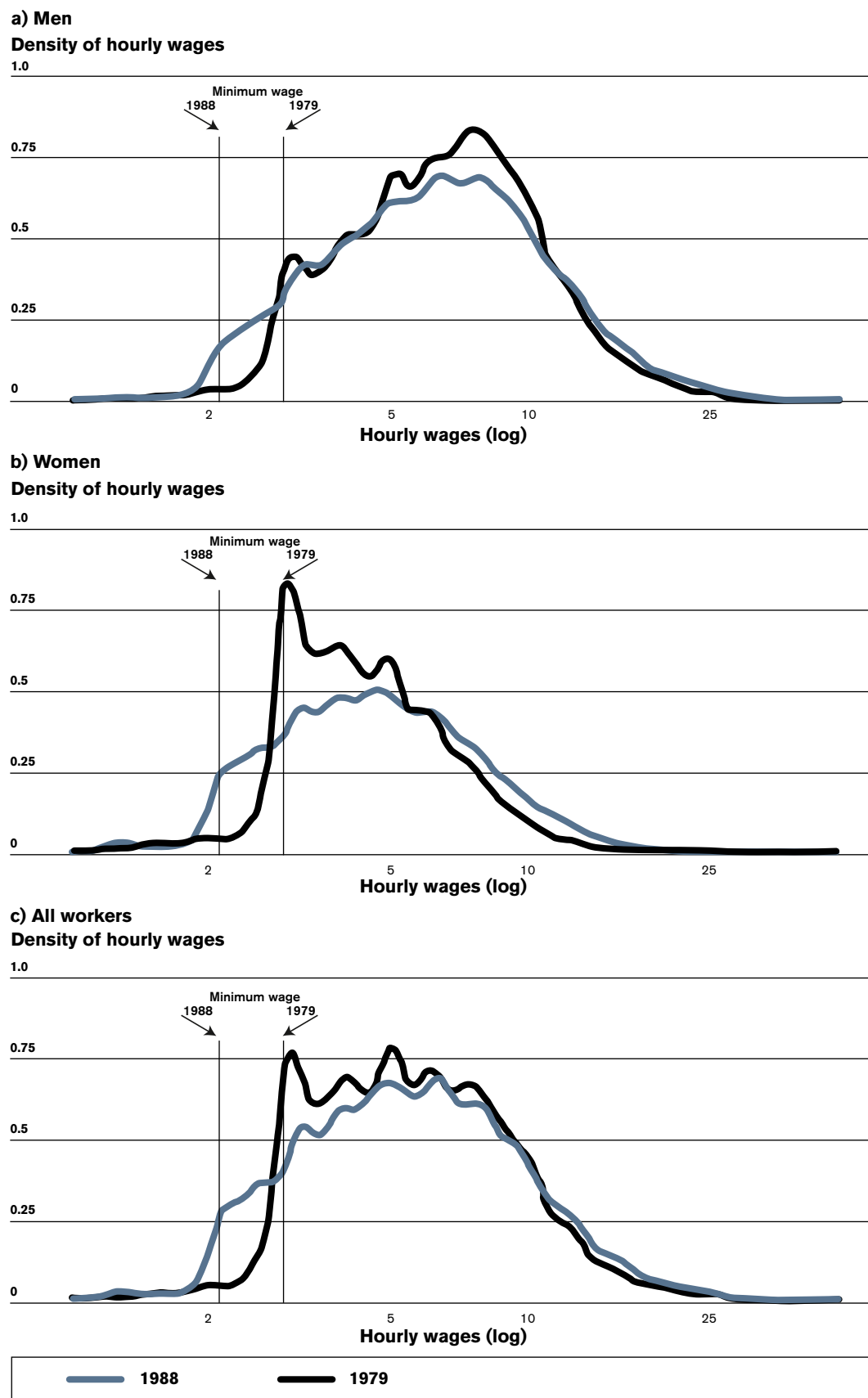
This section discusses the role, if any, that minimum wages play in shaping any identified gender pay differentials. It makes use of data from the SIH in 1995–96 and 2005–06 and methods developed for the analysis of the effect of changes in the minimum wage by Fortin and Lemieux (1997). The aims of this part of the project were to identify changes in the distribution of male and female wages over the last decade and to identify the possible role contributed by changes in the minimum wage rate. As such, the section adds further information on the gender differences in earnings in the Australian labour market and how this changed over the decade to 2005–06.

The analysis of the distribution of male and female earnings presented in this section is based on kernel density functions<sup>4</sup> for real hourly wage rates (expressed in logs) that were estimated for all workers and for women and men separately in 1995–96 and 2005–06. These functions provide a graphical representation of the wage distributions in each year, the changes that occurred in these distributions over the 10-year period, and the position of the minimum wage rate in these distributions. This information can be used to gauge the effect of the minimum wage rate on wage outcomes, as well as the effect of changes in the minimum wage rate on the distribution of earnings over time.

Fortin and Lemieux (1997) applied these methods to their analysis of changes in the distribution of wages in the United States (US) between 1979 and 1988. As is shown in the diagrams from Fortin and Lemieux reproduced in Figure 1, it was identified that, in the US in 1978, the minimum wage was the mode of the distribution of women's wages and that the density of wage outcomes below the minimum wage was relatively small. It was thus apparent that the US minimum wage at that time constrained especially women's wages at the lower end of the earnings distribution. By 1988, however, the real value of the minimum wage rate had fallen dramatically in the US and substantially fewer low-paid female workers were affected by its operation. Fortin and Lemieux (1997:83) also identified an increased proportion of female workers earning relatively low wages in 1988 as compared with 1979. They attributed this change in large part to the reduced influence of the minimum wage rate on the wage outcomes of low-paid workers.

4 Kernel density functions are similar to histograms, in that they provide non-parametric estimates of the density of a variable between given values or within what are known as 'bins'. The difference between kernel density functions and histograms is that the end points of the bins used to organise the data are replaced by actual data points and the widths of the bins (known as the bandwidth) are altered to reflect the characteristics of the data.

Figure 1: Fortin and Lemieux's (1997) representation of the hourly wages of US workers



Source: Fortin and Lemieux (1997: 83)

Note: The graphs are smoothed histograms that integrate to 1. As such the area below each line at the left of any wage level shows the percentage of workers earning less than that (hourly) wage rate.

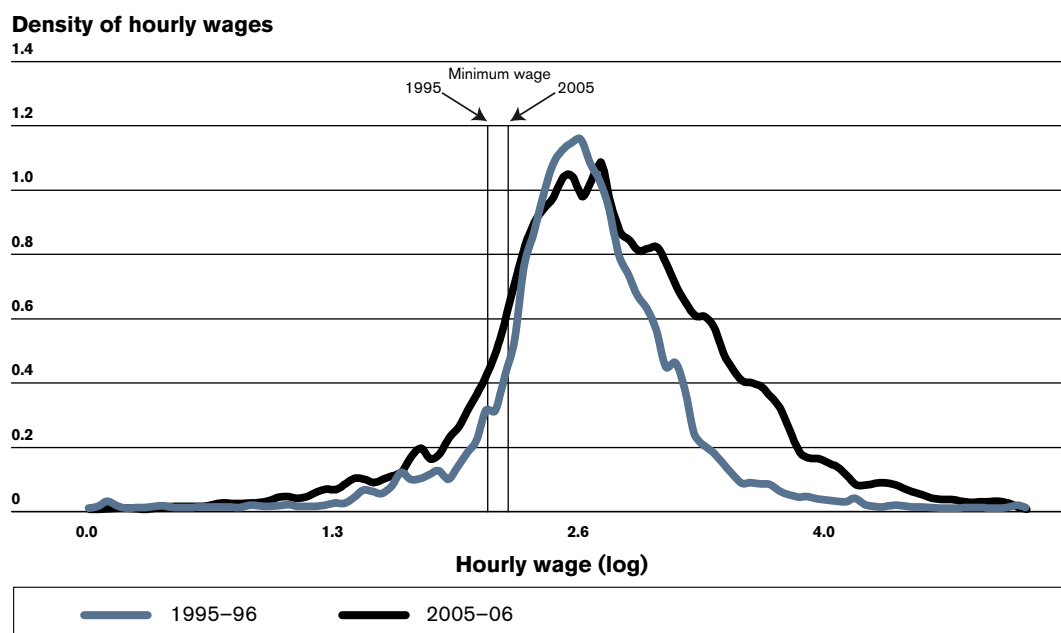
The methods used in the current study are largely based on Fortin and Lemieux's approach. The selected SIH sample comprises wage and salary earners aged 15 years and over. Real log hourly wage rates (1995 dollars) were used as the basis of comparison of wage outcomes across years and different groups of workers, and all observations in the sample were weighted by the number of weekly hours of work. This latter adjustment ensures that the contribution of each worker to the labour market is more accurately reflected in the analysis. However, it also has the effect of reducing the measured importance of the minimum wage since a large proportion of low-wage workers are employed on a part-time basis, as shown in Table 1. Observations were also weighted by the sample weights provided in the SIH data.

The diagrams below show the kernel density functions for male and female wages in 1995–96 and 2005–06. They also identify the minimum wage rate in terms of these distributions. In 1995 the minimum wage had a value of 2.1 (in logs); in 2007 its real value was 2.2 (WorkplaceInfo, 2008). An important contrast thus exists between the Australian experience between 1995–96 and 2005–06 and the US experience documented by Fortin and Lemieux (1997): the real value of the minimum wage was maintained in Australia between 1995 and 2005, whilst it fell significantly in the US between 1979 and 1988. Furthermore, the position of the minimum wage rate relative to median earnings remained largely unchanged in Australia between 1995 and 2005. In 1995 the minimum wage was around 80 per cent of median earnings, and in 2005 it was 81.5 per cent of median earnings. In contrast, in the US the minimum wage fell from being close to median wages to being at the bottom end of the wage distribution between 1979 and 1988.

A further contrast that can be drawn between the US (1979–88) and Australian (1995–2005) experiences with minimum wage rates relates to their role in providing a 'backstop' to the wage distribution. As noted above, Fortin and Lemieux (1997) identified this role for the US minimum wage in 1979. However, the Australian minimum wage rate does not appear to perform this function. As is shown in the figures below, a relatively large proportion of Australian workers reported hourly wage rates below the minimum wage in both 1995–96 and 2005–06. Furthermore, neither the distribution of female nor male wage rates 'drops off' below the minimum rate as it did for female workers in the US in 1979. Thus, from the evidence compiled here, it does not appear that the minimum wage rate exactly defines the wage rate paid to substantial numbers of Australian women. This finding is in concurrence with Healy and Richardson's observations that up to 10 per cent of adult employees receive wages below or equal to the minimum wage (Healy and Richardson, 2006:1).

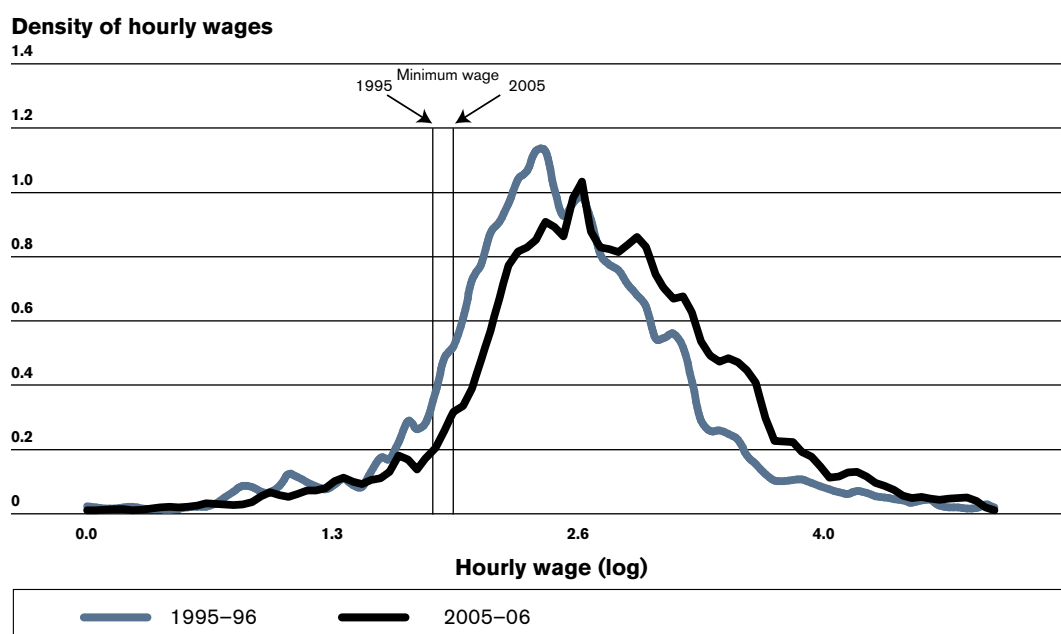


Figure 2: Distribution of hourly wages in constant 1995 dollars: all Australian workers

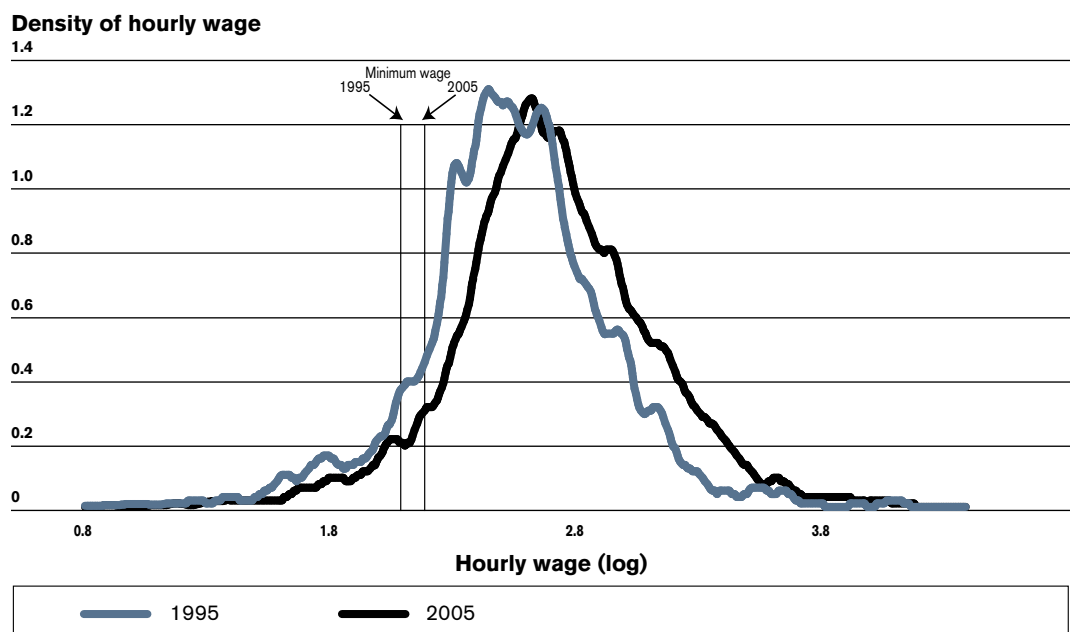


Note: The graphs are smoothed histograms that integrate to 1. As such the area below each line at the left of any wage level shows the percentage of workers earning less than that (hourly) wage rate.

Figure 3: Distribution of hourly wages in constant 1995 dollars: Australian male workers



Note: See explanatory notes on Figure 2.

**Figure 4: Distribution of hourly wages in constant 1995 dollars: Australian female workers**

Note: See explanatory notes on Figure 2.

Before we proceed to a discussion of the implications for gender wage differences, it is worthwhile to note some additional features of the above graphs. Figure 2 features a rightward shift in the distribution of wage rates between 1995–96 and 2005–06, reflecting the growth in real wages over the decade as shown earlier in Table 14. It also features a greater proportionate shift in the distribution of wages to the right of the mode, indicating a growth in earnings inequality. Real earnings grew fastest for high-wage workers and by a relatively small amount for low-wage workers, consistent with the information previously shown in Table 14 and Table 15. Figure 2 and Figure 3 indicate that the distributions of men's and women's earnings followed a similar pattern: that is, real wages grew over the decade but this growth was concentrated in the top half of the distribution. A comparison of Figure 2 and Figure 3 reveal, additionally, the lower hourly earnings of women as compared to men, shown earlier in Table 15.

In Fortin and Lemieux's (1997) study, the impact of change in the real value of the minimum wage was identified with reference to the concurrent changes in the distribution of wages. As the real value of the minimum wage did not vary in a substantial way in Australia in our study period, this approach would not reveal any impacts of the minimum wage on gender wage differences or, indeed, on levels of wage inequality more generally.

A variation of Fortin and Lemieux's (1997) approach was therefore devised. This involved posing the following question: what would the 2005–06 distributions of wages look like if 'minimum wage-dependent' workers had received no minimum wage adjustment since 1995–96? 'Minimum wage-dependent' workers are defined as the group of workers with hourly earnings up to \$2 (real 1995 values) more than the minimum wage.<sup>5</sup> If this group of workers had not received an Australian Industrial Relations Commission (AIRC) or the Australian Fair Pay Commission wage adjustment, it is likely that their wage increase between 1995–96 and 2005–06 would have been limited to that recommended by the

5 Healy & Richardson (2006) use a similar approach in defining minimum wage workers.

Australian Chamber of Commerce and Industry (ACCI) at the relevant wage inquiries.<sup>6</sup> For workers on the C10 rate, this increase was \$25.20 per week (1995–96 values) over the 10-year period and compared to real increases totalling \$111.95 awarded by the Commissions (O'Neill, 2005).<sup>7</sup> Thus, to model the effect of the minimum wage decisions, the observed 2005–06 wages of workers earning up to \$2 more than the minimum wage were reduced by \$2.35 per hour. The wages of workers earning more than \$2 above the minimum wage rate were left unchanged.

The outcomes of this modelling exercise are fairly easy to anticipate given the information on the characteristics of low-paid workers already presented in this report. Specifically, given the over-representation of women in low-paid jobs, removing minimum wage increases from the wage outcomes of low-paid workers increases the gender pay gap. At mean values, using unadjusted earnings figures, the gender pay gap is 86.4 per cent when minimum wage adjustments are included in measured wages, and 85.2 per cent when minimum wage adjustments are removed from the measured wage outcomes of workers in relatively low-paid jobs. This change is due to the greater effect of the minimum wage adjustment on the wage outcomes of women, as compared to men, at the lower end of the wage distribution. Removing minimum wage increases from the wage outcomes of low-paid workers reduces the hourly earnings of women at the 10th percentile by 26.3 per cent. The effect of this adjustment on the wage outcomes of men located at the 10th percentile is 24.4 per cent.

In summary, information from the SIH on the distribution of male and female wages in 1995–96 and 2005–06 identifies a growth in real wages for men and women between 1995–96 and 2005–06. This increase was greatest for workers on relatively high wages and, thus, over the decade wage inequality increased for both men and women.

Previous international studies have identified a role for changes in the real value of the minimum wage in determining changes in wage inequality. However, in Australia between 1995–96 and 2005–06, the real and relative value of the minimum wage rate was maintained. Thus, changes in the real value of the minimum wage rate cannot be identified as a source of the increases in wage inequality observed over the study period.

However, changes in minimum wage rates are widely recognised as a significant source of wage growth for workers in low-paid jobs. Thus, it is reasonable to conjecture that, in the absence of adjustments of minimum wage rates over recent years, wage outcomes for low-paid workers would be worse than they currently are and wage inequality would be greater. Given that women are over-represented in low-paid jobs, this implies that the gender pay gap would be greater than it currently is if minimum wage adjustments had not occurred. Analysis in this section identified that the minimum wage adjustments awarded between 1995 and 2005 reduced the gender wage gap by approximately 1.2 percentage points.

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6 The assumption to limit the wage increases to those recommended by the ACCI is conservative. An alternative is to limit the wage increases to growth in the CPI.

7 Through the 1990s, national wage decisions moved towards a system of 'safety net adjustments' alongside enterprise bargaining. Within this system, safety net adjustments were generally discussed with reference to occupational classifications within the Metal Industrial Awards. C10 refers to a tradesperson's base wage, commonly used as a benchmark in submissions to the AIRC.

## 5. Determinants of men's and women's earnings

### 5.1 Introduction

This section investigates factors that might explain gender pay differentials and the causes of low pay among men and women in particular industries and occupations. It uses data from the Household Income and Labour Dynamics Australia (HILDA) Survey to undertake a quantitative analysis of the determinants of patterns of low-pay gender-pay differentials based on human capital theory. This is complemented with insights from recent qualitative data collection and analysis that suggest some of the causal mechanisms underlying low pay.

### 5.2 Data and method

In contemporary economic literature a dominant framework used to study wage determination and wage relativities is the human capital model. The model may be stated algebraically as follows:

$$\ln \hat{Y}_i = \beta_0 + V_i \hat{\beta}_i \quad (1)$$

where  $\ln \hat{Y}$  denotes the natural logarithm of weekly earnings,  $V$  is a vector of human capital characteristics known to affect wages (e.g. qualifications, demographic characteristics, workplace and industry characteristics); and  $\hat{\beta}$  is a vector of estimated slope coefficients associated with these characteristics. The latter provides a measure of the rates of return to the characteristics controlled for in the wage equation.

In this section the above-wage equation is estimated using data from the sixth wave of the HILDA Survey. The advantages of the HILDA data include the ability to estimate hourly earnings and thus include part-timers in the study. HILDA also has an advantage over the SIH of containing a detailed set of controls for employment arrangements, such as firm size, union membership and contract type.

The sixth wave of the HILDA Survey was conducted in 2006 and contains a range of variables known to be correlated with earnings, including education, location, industry, firm size, etc. There are 12,905 individual observations in this, however, when the sample is reduced to those in full-time and part-time employment and the analysis restricted to observations with full information on variables in the models for estimation, the sample size is equal to 5803. The sample includes only individuals who gave their employment status as 'employee'. Individuals who gave their employment status as either 'employee of own business', 'employer/self-employed' or 'unpaid family worker' are not included in the sample.

#### Variables and variable means

The construction of the variables from the HILDA data, including the choice of control groups, largely follows the approach adopted by Kee (2006) and Watson (2005) and is described in Table 16 below (along with the variable means). The average age of the sample population is 37. As may be seen from the data in Table 16, half the respondents are women; 83 per cent were born in Australia; 33 per cent have a dependent child under the age of 16; and 30 per cent are single (never married and not living in a de facto relationship) and 63 per cent reside in an urban location.

In terms of employment status, the majority (66 per cent) are employed full-time, with 66 per cent of the sample on a permanent contract. The majority (38.5 per cent) of respondents also work in a medium-sized firm (20–99 employees), with the dominant industries including Retail trade (16 per cent), Health and community services (12.2 per cent), Education (10.9

per cent) and Manufacturing (10.7 per cent). Twenty-six per cent of respondents are a member of a trade union, while a quarter (25.5 per cent) of the sample works on a casual basis. Twenty-three per cent have a tertiary degree (bachelor and post-graduate), 21 per cent are employed as Professionals and 8.5 per cent as Labourers and related workers.

**Table 16: Demographic, education and employment variables, HILDA, 2006**

Name	Mean	Definition
Age < 21	0.133	= 1 if respondent is less than 21; 0 otherwise. (This is the control group.)
Age21_24	0.109	= 1 if respondent is between 21 and 24; 0 otherwise.
Age25_34	0.212	= 1 if respondent is between 25 and 34; 0 otherwise.
Age35_44	0.229	= 1 if respondent is between 35 and 44; 0 otherwise.
Age45_54	0.211	= 1 if respondent is between 45 and 54; 0 otherwise.
Age55_and_up	0.106	= 1 if respondent is 55 or greater; 0 otherwise.
Occ_ten	8.069	= respondent's tenure in current occupation (years).
Occ_ten <sup>2</sup>	157.786	= respondent's tenure in current occupation (years) squared.
Job_ten	5.618	= respondent's tenure with current employer (years).
Gender	0.500	= 1 if female; = 0 if male.
Kids0_15	0.332	= 1 if respondent has own/non-resident kids aged 0–15.
Bornoz	0.829	= 1 if respondent was born in Australia; 0 otherwise.
Single	0.300	= 1 if respondent is single; 0 otherwise.
Contract	0.089	= 1 if respondent is on a fixed-term contract; 0 otherwise.
Casual	0.255	= 1 if respondent is a casual employee; 0 otherwise.
Permanent	0.656	= 1 if respondent is on a permanent contract. (This is the control group.)
Part-time	0.338	= 1 if respondent is employed part-time; 0 otherwise.
Postgrad	0.084	= 1 if respondent has a postgrad qual; 0 otherwise.
Bachelor	0.145	= 1 if respondent's highest qual is bachelor; 0 otherwise.
Diploma	0.092	= 1 if respondent's highest qual is diploma; 0 otherwise.
Cert	0.232	= 1 if respondent's highest qual is a cert; 0 otherwise.
Year11_less	0.259	= 1 if respondent's highest level of education is Year 11 or less; 0 otherwise.
Year 12	0.188	= 1 if respondent's highest level of education is Year 12 (This is the control group.)
Urban	0.631	= 1 if respondent resides in a major city; 0 otherwise.
Size1_19	0.250	= 1 if employed in firm with 1–19 employees (This is the control group.)
Size20–99	0.385	= 1 if employed in firm with 20–99 employees.
Size100–499	0.267	= 1 if employed in firm with 100–499 employees.
Size500	0.098	= 1 if employed in firm with 500+ employees.
Union	0.260	= 1 if respondent is a union member.
Agriculture	0.023	= 1 if employed in Agriculture, forestry or fishing; 0 otherwise.
Mining	0.014	= 1 if respondent is employed in Mining; 0 otherwise.
Manufacturing	0.107	= 1 if employed in Manufacturing; 0 otherwise.
ElectGasWater	0.006	= 1 if employed in Electricity, gas or water supply; 0 otherwise.
Construction	0.060	= 1 if employed in Construction; 0 otherwise.
Wholesale Trade	0.041	= 1 if employed in Wholesale trade; 0 otherwise.
Retail Trade	0.160	= 1 if employed in Retail trade; 0 otherwise.
AccomCaféRest	0.063	= 1 if employed in Accommodation, cafés or restaurants; 0 otherwise.
Transport	0.037	= 1 if employed in Transport or storage; 0 otherwise.
Communication	0.018	= 1 if employed in Communication services; 0 otherwise.
Finance	0.032	= 1 if employed in Finance and insurance; 0 otherwise.
PropBusServices	0.096	= 1 if employed in Property or business services; 0 otherwise.
Government	0.049	= 1 if employed in Government administration or defence; 0 otherwise.
Education	0.109	= 1 if employed in Education; 0 otherwise.
HlthCommServices	0.122	= 1 if employed in Health or community services; 0 otherwise.
Personal Services	0.036	= 1 if employed in Personal or other services; 0 otherwise.
Culture	0.026	= 1 if employed in cultural or recreational services; 0 otherwise (This is the control group.)
Manager	0.054	= 1 if respondent's occupation is Manager; 0 otherwise.

## Gender Pay Differentials in Low-Paid Employment

<b>Name</b>	<b>Mean</b>	<b>Definition</b>
<i>Professional</i>	0.211	= 1 if occupation is <i>Professional</i> ; 0 otherwise ( <i>This is the control group.</i> )
Associate professional	0.122	= 1 if occupation is Associate professional; 0 otherwise.
Tradesperson	0.109	= 1 if occupation is Tradesperson; 0 otherwise.
Advanced clerk	0.026	= 1 if occupation is Advanced clerk; 0 otherwise.
Inter-clerk	0.206	= 1 if occupation is Intermediate clerk; 0 otherwise.
Inter-production	0.079	= 1 if occupation is Production; 0 otherwise.
Elementary clerk	0.108	= 1 if occupation is Elementary clerk; 0 otherwise.
Labourer	0.085	= 1 if occupation is Labourer; 0 otherwise

### 5.3 Understanding the gender pay gaps in low-paid employment

To understand the factors explaining gender wage differentials within low-paid industries and occupations we use the standard Blinder (1973) and Oaxaca (1973) decomposition approach. (The approach is described in Appendix A). The technique allows us to measure the contribution different characteristics make to the size of the 'raw' gender pay gap.<sup>8</sup> Through controlling for the characteristics of individuals such as age (a proxy for general labour market experience), occupational and job tenure, qualifications, employment status, union membership, firm size, etc., it is possible to compute an adjusted gender pay gap (i.e. a revised gap after accounting for gender differences in these variables).<sup>9</sup>

#### Gender pay gap – national level

Table 17 shows the estimation results associated with equation (1) estimated using HILDA data. At a national level the data show that the adjusted gender pay gap in hourly earnings (i.e. the gender pay gap after controlling for qualifications, demographic characteristics, geographic location and work-related variables such as employment status, contract status, union membership, firm size and industry of employment) was equal to 8.5 per cent in 2006.

Other features of the results are as follows. At the national level, for example, there is a significant and positive return to education, with those with a bachelor degree earning 20 per cent more than those with Year 12 qualifications (the control group). Employment characteristics are also an important determinant. Individuals in small firms (1–19 employees) earn significantly less than their counterparts in larger workplaces; for medium-size workplaces (20–99 employees) the earnings advantage is 6.1 per cent, for workplaces of 100–499 employees the advantage (relative to small firms) is 8.8 per cent, while for those in large workplaces (500+) the earnings advantage is 16.1 per cent.

There is also considerable variation in earnings across industries, with employees in Mining earning 44.9 per cent more than those employed in Cultural or recreational services (the control group). Industries where the average return is significantly below that of the control group include: Retail trade, Accommodation cafés and restaurants, and Personal services. Estimates also show that union members earn, on average, 5.0 per cent more than non-union members and that persons residing in a rural area are at a significant earnings disadvantage, receiving earnings which are, on average, 5.6 per cent lower than those of their urban counterparts.

<sup>8</sup> The raw gender wage gap (GWG) is defined as the difference in the simple common mean earnings of men and women. In other words it is the mean difference before taking into account any factors (e.g. union membership) likely to affect wage outcomes. There are some small differences between the measured gender pay gaps produced using HILDA data and those generated with SIH data (see Table 12). These are likely to be due to sample variation.

<sup>9</sup> There is some debate about including controls such as part-time employment in a wage equation where the focus of analysis is on gender pay discrimination. Using variables such as part-time employment as an exogenous explanatory variable does not capture many of the social norms which restrict women's 'choice' of employment form and see women channelled into jobs where their skills are undervalued. We discuss the importance of institutional and social norms at the end of Section 5 in this report.

Table 17: Maximum likelihood estimates for the determinants of hourly earnings, Australia, 2006

<b>Dependent variable</b>	Natural log of hourly earnings		
<b>Mean of Y</b>	Mean = 2.9779		
<b>F-test</b>	75.147		
<b>R<sup>2</sup> adjusted</b>	0.344		
<b>Sample size</b>	n = 5803		

	<b>Coefficients</b>	<b>t-statistics</b>	<b>Significance</b>
Constant	2.551	53.796	0.000
Age21_24	0.212	8.752	0.000
Age25_34	0.287	12.015	0.000
Age35_44	0.329	12.683	0.000
Age45_54	0.308	11.572	0.000
Age55_and_up	0.326	10.859	0.000
Occ_tenure	0.010	5.437	0.000
Occ_tenure2	0.000	-2.474	0.013
Job_tenure	0.003	2.677	0.007
Gender (female=1)	-0.085	-6.728	0.000
Kids0_15	0.036	2.475	0.013
Bornoz	0.010	0.653	0.514
Single	-0.120	-7.462	0.000
Contract	0.014	0.719	0.472
Casual	0.055	3.370	0.001
Part-time	0.014	0.959	0.338
Postgrad	0.291	11.640	0.000
Bachelor	0.200	9.743	0.000
Diploma	0.091	3.971	0.000
Cert	-0.026	-1.465	0.143
Year11_less	-0.129	-7.465	0.000
Urban	0.056	4.605	0.000
Size20-99	0.061	4.142	0.000
Size100-499	0.088	5.396	0.000
Size500	0.161	7.402	0.000
Union	0.050	3.580	0.000
Agriculture	-0.235	-4.622	0.000
Mining	0.449	7.672	0.000
Manufacturing	-0.001	-0.027	0.978
ElectGasWater	0.229	2.953	0.003
Construction	0.096	2.289	0.022
Wholesale trade	0.013	0.304	0.761
Retail trade	-0.104	-2.796	0.005
AccomCaféRest	-0.087	-2.136	0.033
Transport	0.017	0.368	0.713
Communication	0.071	1.317	0.188
Finance	0.166	3.556	0.000
PropBusServices	0.107	2.740	0.006
Government	0.121	2.816	0.005
Education	-0.058	-1.456	0.145
HlthCommServices	-0.029	-0.744	0.457
Personal services	-0.079	-1.732	0.083



## Gender pay gap – within industries

In section 2, the six lowest paying industries were identified as Agriculture, Wholesale trade, Retail trade, Accommodation cafés and restaurants, Cultural and recreational services and Personal and other services. In our HILDA sample data set 34.9 per cent of the sample is employed within these six industries (see Table 18).

**Table 18: Employment shares of low-paid industries (based on HILDA sample), 2006**

Industry	Share of sample %
Agriculture	2.3
Wholesale trade	4.1
Retail trade	16.0
Accommodation, cafés and restaurants	6.3
Cultural and recreational services	2.6
Personal and other services	3.6
Total	34.9

Source: Table 16

Table 19 summarises the estimated gender pay gaps in hourly earnings within each of these low-paying industries. The model used to compute the within-industry gender pay gaps is equivalent to that estimated at Table 17 (with the obvious exception of the industry controls). A full set of results used to derive Table 19 are contained in Appendix B.

Consistent with the findings in section 2, the results show variability in the size and significance of the gender pay gaps within low-paid industries. It is largest within Wholesale trade, equal to 21.7 per cent, followed by Retail trade (4.8 per cent). In the other industries shown here the observed gender pay gaps are not statistically significant. It should, however, be noted that the causal factors leading to low pay for men and women in low-paid industries exhibit important and statistically significant differences.

As discussed earlier in this report, 46 per cent of female employees work on a part-time basis. Table 20 summarises the regression results with respect to employment status. As with the gender pay gap there is also variability in the size and significance of the part-time/full-time hourly wage gap (even after controlling for other characteristics). In Retail trade there is a significant wage penalty associated with part-time employment equal to 6.4 per cent. The close association between part-time work and women's employment calls into question whether the relatively lower earnings of part-time workers are an explanation of women's low earnings or a pattern of earnings that itself requires explaining. As discussed later, these links make it difficult to separate economic explanations of women's and men's earnings from the social and institutional contexts in which labour markets are embedded.

**Table 19: Gender pay gaps in low-paid industries, 2006**

Industry	Gender pay gap (coefficient)	t-stat (absolute)	Significance
Agriculture	-0.097	0.790	0.431
Wholesale trade	-0.217	3.229	0.001
Retail trade	-0.048	1.939	0.053
Accommodation, cafés and restaurants	0.021	0.523	0.601
Cultural and recreational services	-0.084	1.005	0.317
Personal and other services	0.123	1.467	0.144

Source: Appendix B

**Table 20: Part-time / full-time wage gap in low-paid industries, 2006**

Industry	Part-time/full-time wage gap (coefficient)	t-stat (absolute)	Significance
Agriculture	0.193	1.557	0.122
Wholesale trade	0.146	1.486	0.139
Retail trade	-0.064	1.933	0.054
Accommodation, cafés and restaurants	0.029	0.606	0.545
Cultural and recreational services	-0.079	0.713	0.477
Personal and other services	-0.113	1.077	0.283

Source: Appendix C

To gain further understanding of the gendered nature of low pay and its possible causes, the following tables (Table 21 to Table 25) summarise the calculations associated with the Blinder-Oaxaca decomposition for each of the above industry sectors. In other words the tables summarise the contributions various characteristics make to the size of the explained component of the gender pay gap. (As previously indicated, the method is described in more detail in Appendix A).

The full set of male and female wage regressions upon which the summary calculations in Table 21 to Table 25 are based are reported in Appendix C. Agriculture is not reported as the female wage equation was not significant, reflecting the large variability in earnings and the range of different determinants in this sector.

We begin with Wholesale trade (the summary results of which are shown in Table 21). In this industry, the raw gender pay gap is equal to 12.4 per cent and the adjusted gap (after accounting for differences in male and female characteristics) is equal to 20.6 per cent. Casual employment is an important contributing factor to the gender pay gap in this sector. Of all men employed in this sector, 12 per cent work on a casual basis; for women the corresponding share is 20 per cent. Men receive a 3.5 per cent premium if they are employed on a casual basis; amongst women there is a pay penalty equal to 17 per cent. Size of firm also shows up as an important determinant. Twenty per cent of women and 16.7 per cent of men work in firms of between 100 and 400 employees. Women in these firms earn 14.4 per cent less than their counterparts in firms of less than 20 employees. For men the pay penalty is lower, equal to 1.1 per cent.

Table 22 shows that according to HILDA data, in 2006 in the Retail trade industry, the raw gender pay gap in hourly earnings was equal to 9.4 per cent. Gender differences in characteristics such as occupational tenure, incidence of part-time employment and

distribution across firms of different size were important drivers of this observed gap. Indeed, following the Blinder-Oaxaca decomposition approach it would appear that such differences can account for 6.2 percentage points of the 9.4 per cent gender pay gap (or 65 per cent of the observed gap). Once these gender differences are taken into account, the adjusted gender pay gap in Retail trade falls to 3.3 per cent. In other words, 3.3 per cent of the gender pay gap in Retail trade cannot be explained by gender differences in characteristics and is therefore attributed to unmeasured factors and possibly discrimination.

Turning to Accommodation, cafés and restaurants, from Table 23 we can see that there is a very small raw gender pay gap in this industry. Once we take into account gender differences in employment distribution across firms of different size and gender differences in occupational tenure, the gender gap disappears; indeed the adjusted gender pay gap of –0.049 percentage points favours women. This is consistent with previous discussions identifying low gender wage differences in workforce sectors characterised by relatively lower earnings.

In Cultural and recreational services, shown in Table 24, the raw gender pay gap is equal to 12 per cent and the adjusted gap equal to 9.9 per cent. In this sector part-time employment is an important factor contributing to the gender pay gap. As shown in Table C.4 in Appendix C, 59.7 per cent of women in Cultural and recreational services work on a part-time basis. The corresponding share amongst men is 33 per cent. Women employed part-time earn 26 per cent less than their full-time counterparts, while men employed part-time earn 36 per cent more. The gender difference in returns to qualifications is a similarly important factor. Of all women in this sector, 21.3 per cent have a bachelor degree as their highest qualification. The equivalent share amongst men is 8.3 per cent. Women with a bachelor degree earn 24 per cent more than their female counterparts with Year 12 qualifications. For men the corresponding rate of return is 32 per cent.

Table 25 shows a raw gender pay gap of 25 per cent for Personal and other services. In this industry the main driver or explanatory factor of observed gender differences in hourly earnings appears to derive from gender differences in occupational tenure and gender differences in union membership. According to the HILDA data, 57.3 per cent of men in this sector are union members; the corresponding share for women is 24 per cent (see Table C.5 in Appendix C). Once differences in characteristics are taken into effect the adjusted gender pay gap is equal to –0.143.

**Table 21: Wholesale trade – raw GWG = 0.124**

Variable groups	Explained	% of Explained	Coefficients	Constants	Adjusted GWG
Age (experience)	–0.006	7.0			
Qualifications	–0.028	34.0			
Occ and job tenure	0.020	–23.6			
Demographics	–0.018	22.0			
Contract and employment form	–0.026	31.8			
Location	–0.008	9.8			
Firm size	–0.009	11.1			
Union membership	–0.007	7.9			
Total	–0.083	100%	0.215	–0.009	0.206

Source: Appendix Table C.1

**Table 22: Retail trade – raw GWG = 0.09452**

Variable groups	Explained	% of Explained	Coefficients	Constants	Adjusted GWG
Age (experience)	0.017	27.9			
Qualifications	0.011	18.2			
Occ and job tenure	0.009	14.2			
Demographics	0.000	–0.3			
Contract and employment form	0.026	42.1			
Location	0.000	0.4			
Firm size	0.000	–0.8			
Union membership	–0.001	–1.8			
Total	0.062	100%	0.193	–0.160	0.033

Source: Appendix Table C.2

**Table 23: Accommodation, cafés and restaurants – raw GWG = 0.0197**

Variable groups	Explained	% of Explained	Coefficients	Constants	Adjusted GWG
Age (experience)	0.000	0.0			
Qualifications	0.013	19.1			
Occ and job tenure	0.040	58.4			
Demographics	–0.009	–12.7			
Contract and employment form	–0.047	–68.0			
Location	0.018	27.0			
Firm size	0.049	72.0			
Union membership	0.003	4.3			
Total	0.068	100%	0.504	–0.553	–0.049

Source: Appendix Table C.3

**Table 24: Cultural and recreational services – raw GWG = 0.120**

Variable groups	Explained	% of Explained	Coefficients	Constants	Adjusted GWG
Age (experience)	0.108	518.3			
Qualifications	–0.033	–157.2			
Occ and job tenure	0.010	46.7			
Demographics	–0.006	–30.8			
Contract and employment form	–0.061	–293.2			
Location	0.000	2.1			
Firm size	0.004	17.7			
Union membership	–0.001	–3.5			
Total	0.021	100%	–0.030	0.120	0.099

Source: Appendix Table C.4

**Table 25: Personal services – raw GWG = 0.252**

Variable groups	Explained	% of Explained	Coefficients	Constants	Adjusted GWG
Age (experience)	0.109	27.7			
Qualifications	−0.028	−7.2			
Occ and job tenure	0.074	18.7			
Demographics	−0.034	−8.6			
Contract and employment form	0.057	14.4			
Location	0.001	0.2			
Firm size		0.010	2.4		
Union membership		0.206	52.4		
Total	0.394	100	0.079	−0.222	−0.143

Source: Appendix Table C.5

Summarising the above it would seem from the estimates presented here that there are considerable differences in the size and apparent causes of the gender pay gap across industries, even amongst relatively low paying sectors. Industry analysis shows that the only two sectors with a significant gender pay gap are Wholesale trade and Retail trade. These two sectors also exhibit a sizeable part-time/full-time wage gap (equal to 6.4 and 22.5 per cent, respectively). However, as shown above, there are important gender differences in the determinants of low pay *within* industry.

Taking into account gender differences in characteristics such as age, occupational tenure and qualifications as well as more institutionally related factors such as union membership, employment status (part-time / full-time) and geographic location, one can see that there are quite marked differences in the determinants of male and female earnings within industry sectors. Gender pay gaps and low earnings for both men and women at the industry level are, therefore, driven by quite different sets of factors. In Retail trade, Wholesale trade and Cultural and recreational services the main driver of the observed gender pay gap appears to be gender differences in form of contract (casual) and employment status (with women more likely to be employed in part-time work). In Personal and other services gender difference in union membership is the key underpinning factor.

### Gender pay gap – within occupations

In this sub-section we consider the gender pay gap within occupations. Table 26 and Table 27 summarise the coefficient on the gender dummy in each of the six occupational wage equations estimated, the former without industry controls and the latter with industry controls.

As may be seen there are sizeable gender pay gaps even at the occupational level (and after controlling for factors such as experience, qualifications, employment status and firm size).

When industry controls are added to the wage equation the explanatory power of most models (as measured by the adjusted  $R^2$ ) increases and the size of the measured gender pay gap falls, thus demonstrating the importance of industry of employment as a determinant of women's pay. By way of example, amongst Intermediate production workers the gender pay gap is equal to 13.7 per cent (significant at the one per cent level) when the model is estimated without industry controls and falls to 8.1 per cent (significant at the 10 per cent level) when industry controls are added. The explanatory power of the model also increases from 32.1 per cent to 43.2 per cent. Similar patterns are evident in the case of

Labourers and related workers. When the model is estimated without industry controls the gender pay gap is equal to 9.9 per cent (significant at the 10 per cent level) and falls to 5.1 per cent (a non-significant gap) when industry is controlled for.

**Table 26: Gender pay gap within occupations – gaps without industry controls**

Occupation	Coefficient on gender dummy	Absolute t-stat	Sig.	Adj R <sup>2</sup>
Tradespersons	-0.192	3.341	0.001	0.418
Advanced clerks	-0.145	1.864	0.065	0.183
Intermediate clerks	-0.096	3.621	0.000	0.141
Elementary clerks	-0.036	1.013	0.312	0.261
Intermediate production	-0.137	3.048	0.002	0.321
Labourers	-0.099	1.865	0.063	0.098

**Table 27: Gender pay gap within occupations – gaps with industry controls**

Occupation	Coefficient on gender dummy	Absolute t-stat	Sig.	Adj R <sup>2</sup>
Tradespersons	N/A			
Advanced clerks	N/A			
Intermediate clerks	-0.100	3.592	0.000	0.165
Elementary clerks	-0.023	0.623	0.534	0.281
Intermediate production	-0.081	1.901	0.058	0.432
Labourers	-0.051	0.930	0.353	0.143

#### 5.4 Causal processes and gender pay gaps – some insights from a qualitative project

Quantitative research methods such as those used above are appropriate for generating results that can be generalised across the Australian labour market. However, they cannot give detailed insights into the processes that underlie the negotiation and implementation of employment conditions among low-paid workers. A qualitative study of low-paid work in Western Australia in 2007 gives some insights into the experiences of women in low-paid employment, their knowledge of their rights in an employment situation and their capacity to negotiate conditions of employment (Jefferson *et al.*, 2007). The study has limitations due to its geographic coverage (Western Australia only) and its focus on a broader range of issues than constitute the focus of this report. The advantage of including a discussion of the qualitative analysis arises from the complementary insights it adds to discussions of low pay and its possible causes.

The study was based on detailed interviews with twenty-two participants predominantly employed in low-paid occupations, often in part-time or casual positions. Of the twenty-two participants the mode hourly wage rate was between \$16 and \$20 per hour. In this discussion we draw attention to sections of the study's findings that considered participants' employment conditions and the manner in which they are determined (Jefferson *et al.*, 2007:35–39).

When commencing employment, interview participants generally accepted that their conditions of employment would be adequately defined by their employer and appropriate to their job. Few participants thought it was necessary or even appropriate to negotiate conditions of employment when they commenced a new job. Two main reasons were offered for not actively negotiating conditions of employment during the engagement phase. Firstly, participants felt that when you need a job, you should or can only just accept what is offered. Secondly, employers are perceived as having the 'upper hand' in terms of a negotiating position, so there is little to be gained by asking for higher wages or conditions. Some quotes from participants illustrate this view:

*'... if you are commencing employment with a company or the employer, they have the advantage because they, well, this is what they approached me with: "We can ask you to work for \$12 or whatever it was, \$12.50 an hour, we don't have to give you the award rate; if you want the job badly enough you have to be prepared to [accept it]"...'*

*'I didn't really ask. I was out of work and needed a job ...'*

*'... you just take what they offer and you kind of don't really ask them; you just compare it with what friends are earning.'*

*'When I first started there they just told me what I would be paid and I just accepted that. I never even thought to ask for any more. I was just happy to get some extra money into the household. And I would be pretty bad at negotiating, anyway.'*

The lack of discussion about individually negotiating employment conditions is interesting given Western Australia's relatively long history of individual employment contracts and its current tight labour markets. Even in this context, participants showed a marked reluctance to negotiate conditions prior to commencing employment.

Once employees commence in a job, the question arises of how to vary conditions of employment over time. Most participants were unaware of the mechanisms that lead to increases in their rates of pay and relied upon employers to either notify them of wage increases or to just implement relevant increases when required:

*'I don't know, I never asked. They would just say, "You got a pay rise this week". ... I have never really bothered to look into it. I suppose I should have ... but I didn't.'*

*'... you just see it on your payslip or just notice a couple of extra dollars in your ... well, payslip, because they put it straight into your bank.'*

*'... as the award increased so did my wage ...'*

*'To be quite honest, with that area I have no idea ... No idea at all. Some people say, "We got a pay rise" or whatever. "Oh, have we? Oh, OK".'*

One participant expressed her surprise when she read about a pay rise in a newspaper and realised that her wage had not been adjusted for some time. She then approached her employer about receiving appropriate back pay to compensate for underpayment of wages:

*'What happened was, we found out via papers that we were meant to be getting a pay rise ... and it was only when I rang up the hotline to find out what award I was meant to be on and I found out we were supposed to get a pay rise last August, one in December and one in February.'*

The extent to which participants relied on employers to have knowledge of appropriate wage rates and to vary them according to changes in minimum wage decisions or changes in award rates was reflected in their discussions about being reluctant to negotiate employment conditions. Most participants felt that they did not possess the necessary skills or knowledge to negotiate their own wages. Indeed, some felt that a system in which people negotiated their own wages would be unfair because it may lead to employees doing the same work but being paid different wage rates. In general, participants expressed significant reservations or reluctance about engaging in an active negotiation process for determining their individual employment conditions.

*'I would like to improve the conditions but I don't think I can as just one person; I don't think one person can stand alone, but I really can't be fussed because I'm only there short-term now.'*

*'I've always seen it in places like this that you don't negotiate. You get paid; you are told what you're getting paid and that's what you're getting paid ... You can't really ask for a raise because then they would have to give everyone a raise.'*

*'No, I think they would laugh at me if I did ... I mean, I don't think that I could go up to them and say I needed extra money. The only thing I would love to do is to go up to them and say, "Look, I'd love to become a permanent part-time", so I would get certain entitlements, but I don't know if they would allow me to do that. I've never gone up and asked them. I don't think they would sack me or anything like that; I'm just not comfortable asking them because I think I know the answer, and I would get too upset.'*

*'I don't like confrontation and to me that would almost be – even though it wouldn't have to be threatening – that in itself would be a confrontation.'*

*'I don't think I'm smart enough to do that ... I'd probably talk with my son; he's my financial advisor and I'd run it by him ... I think it's over my head.'*

The notion that wages can be negotiated individually, rather than part of a structure that compared jobs and determined some sort of comparison or benchmark for valuing a job was particularly problematic for some:

*'Well, you can't. How are you supposed to? Because you say, "Okay, I want a raise", and they say, "Okay, well when your next review comes up you can talk about it then." And it will go up to whatever the next level is. It's not like you'd get your own wage.'*

*'I'm not just pulling a number out of the air. You have to realise why you get paid this amount and what you could do or what you actually need to get that amount or how long you needed to be there, but I wouldn't just go in and say, "This is what I think I'm worth." ... I'd need to know ... you've got a [structure] of what would equal what.'*

*'I think that would be difficult. Because I would like for everyone to get together. I might go and say something and underquote myself, compared to what they're paying another and we're all doing the same job ... You are doing the same job and one person could be working harder than the other and be getting paid less, in that way it's not fair.'*

*'... I think that it is really hard to negotiate if you don't know what other people in the industry are getting. How do you know what you are really worth?'*

There were, however, some participants who had experienced the process of negotiating their conditions of employment. These participants discussed the ways in which they had



learned the necessity of negotiating their conditions of employment and had become better at it as they gained confidence in both their skills at work and their relative bargaining position:

*'... there was a bit of anxiety because I'm not usually very good at asking for things that I want ... I'm getting better and in this particular interview for this job I was very good at it ...'*

Q: *'... if you found yourself negotiating now, you would be quite comfortable?'*

A: *'Oh, completely. A couple of years ago, not at all, but now, absolutely.'*

*'Yes I don't mind, I know what I am capable of doing and I know that I am loyal and trustworthy and a good employee, and yes, I feel that I am able to state what my expectations are.'*

Q: *'Are you confident to negotiate, yourself?'*

A: *'Yeah, but the first time I just resigned; I just wanted to go ...'*

In summary, employees expressed an apparent willingness to accept that employers will 'do the right thing' with respect to varying wages and conditions over time. However, tensions and contradictions appear to develop when participants expressed a strong preference not to engage in individual negotiation of employment conditions and an acknowledged lack of bargaining power to allow successful engagement in negotiating processes.

In the context of the broader qualitative study, two key recommendations were developed and both appear relevant to discussions of gender and low pay. The first recommendation was to ensure that governments and regulatory bodies adequately monitor the outcomes from legislative reforms such as workplace regulations. With this in mind we noted the need for an improved national data collection that facilitates a detailed analysis of wages and employment conditions for employees working under varying forms of employment contract in different industry and occupational sectors.

The second recommendation also pertains to information. The perceived complexities and confusion suggest to us that there is a need amongst employees and employers for clear and concise information about employment conditions and their variation.

Each of these issues can be addressed in a range of ways. However, minimum wage decisions appear to be both widely publicised and relatively well understood. While there is ample scope to better understand the mechanisms through which minimum wage decisions flow through to employees generally, it appears that one potentially important role is that of a simple, well publicised source of information about appropriate and acceptable minimum conditions of employment.

## **5.5 Summary**

Analysis of low-paid industries and occupations demonstrates that there are 'unexplained' differences in gender earnings. Gender pay gaps are frequently attributed to women's over-representation in part-time and casual forms of employment. As this report has demonstrated, this is a prominent feature of women's labour market participation and a growing form of employment among men. However, there are limits to which patterns of part-time or casual work can provide a full explanation of gender differences in earnings,

particularly hourly earnings. There are two low-paid industry groups – Wholesale trade and Cultural and recreational services – where part-time or casual status among men attracts an hourly pay premium. This does not occur for women in any of the low-paid industries identified in this study, and there is a pay penalty for part-time or casual status for women working in Wholesale trade and Cultural and recreational services. As discussed previously, other employee characteristics – such as being single, having dependent children and union membership – have different links in terms of their effects on women's and men's earnings. Economic theory alone is unable to explain these links and studies of gender differences in pay.

The importance of institutional factors in determining the relativities between men and women's pay were noted in the introduction to this report. Their importance is aptly summarised by Miller's statement that 'institutional factors, the work environment and social norms are all areas that may require attention in order to redress the undervaluation of women's skills' (Miller, 2005:405). Previous qualitative research gives some insights into the role that centrally determined wage decisions can play in the clear identification and implementation of minimum wages in contexts where individual employees or employers face challenges in the negotiation or determination of appropriate employment conditions.

## 6. Gender pay differentials and women's labour supply

### 6.1 Introduction

This section reviews recent literature on the determinants of Australian women's labour force participation and the elasticity of women's labour supply. The key focus of the discussion is the potential impact of gender wage differentials on women's decisions about working. This review provides a basis for a discussion of the possible effects on labour supply of change in gender wage differentials in low-wage industries and occupations.

### 6.2 Links between wages and women's labour supply

Standard (or neoclassical) economic theory posits a relatively straightforward link between wage levels and individuals' decisions to engage in paid work. In essence, there are two parts to the decision to engage in paid work: a decision to enter the workforce, and a decision about the number of hours to supply to the labour market. In simple terms, an individual is predicted to enter paid work when the available wage exceeds their 'reservation wage', that is, the lowest wage required for the individual to be willing to exchange 'leisure' for paid work.

The number of hours an individual will supply to the labour market is determined by the marginal value he/she attaches to the last marginal unit of 'leisure' and whether this is higher than the offered wage. The general prediction of this approach is that labour market participation will be positively related to wages and that the number of hours worked, especially for low-income individuals, will generally respond positively to increases in wages. The terms that describe these relationships between wages and labour supply are 'own-wage elasticity of labour force participation' and 'own-wage hours of work elasticity'.

In reality, labour supply decisions are significantly more complex than this approach suggests and there have been a wide range of studies that aim to capture key aspects of the labour supply decision. These studies have yielded a wide range of results and insights. There have been two recent and comprehensive literature reviews undertaken by Australian researchers which examine aspects of women's labour supply. The first (Birch, 2005:65–84) specifically examines studies of the labour supply of Australian women. Birch reviews literature that considers the role played by women's own wages, together with a range of other economic and social variables such as non-wage income, mortgage debt, educational attainment, demographic characteristics, family characteristics and government policy. The second study (Dandie and Mercante, 2007) focuses more exclusively on estimates of labour supply elasticities for particular population groups including married women, married men, lone parents and single men and women. The following discussion draws on the findings of these reviews, with a particular focus on their relevance to low-paid work and Australian women's work decisions.

Birch (2005) identifies five features of the Australian social and economic context that have been linked with women's growing participation in the paid labour market over recent decades.

1. Changes in social norms and attitudes have encouraged women's entry in to the labour market.
2. The rising opportunity cost of exiting the workforce to raise children encourages women to continue their workforce participation while raising children.
3. The high direct cost of raising children motivates women to participate in the workforce to meet these costs.

4. Changing relativities in the real wages of men and women mean that women might be increasing their labour supply to ensure a desired standard of living.
5. Government legislation and institutional change have facilitated the development of a less discriminatory labour market for women (Birch, 2005:65–84).

However, while Birch identifies a range of social and economic variables relevant to women's labour supply decisions, she acknowledges that, from an economic perspective, the main influence on labour supply decisions is generally held to be women's own-wage rates. Particularly relevant to this report are Birch's findings from a review of 15 studies of women's own-wage labour force participation elasticities and 25 studies of women's own wage hours of work elasticities. Birch's key finding is that wages play a greater role in women's decisions to enter the labour market than in their decisions on the number of hours they work. In addition she finds that estimation techniques and data have a substantial impact on the measured elasticities of labour supply, which vary from 0.07 to 1.82 in the case of labour market participation and –0.19 to 1.3 in the case of hours of work. Two of Birch's tables, summarising the findings of Australian studies of women's own-wage elasticity of labour supply, are reproduced in Appendix D.

The breadth of Birch's review means that she is able to identify factors that significantly increase women's labour force participation and the number of hours they work, including:

- increases in women's own wages;
- increases in the cost of living;
- increases in the availability of suitable jobs; and
- increases in labour market experience and duration of residence.

In contrast, other factors reduce women's labour supply:

- increases in family income;
- increases in the number of young children; and
- increases in the unemployment rate.

The advantage of Birch's study is that it places the discussion of women's labour supply decisions within a broad range of social and economic variables. In this context, changes in women's wages appear as one significant factor influencing women's decisions about paid work, particularly decisions to enter the paid workforce.

Dandie and Mercante's study focuses more exclusively on labour supply elasticities rather than the broader range of labour supply determinants covered by Birch's study. Like Birch, Dandie and Mercante note the extent to which estimates of elasticity of labour supply vary with both method of estimation and availability of data.

Dandie and Mercante examine estimates of own-wage elasticity of hours of work for different population groups. They find that second and third generation estimates of Australian married women's own-wage hours of work elasticity typically vary between 0.23 and 1.3.<sup>10</sup> They conclude that 'by and large' research findings demonstrate positive wage elasticities for married women.

Of particular interest in the context of this report, however, are the references to Kalb's findings (2000). Kalb provides disaggregated estimates for married women in low-, average- and high-income households and finds that 'generally, married women in families

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<sup>10</sup> The use of the term 'first', 'second' and 'third' generation estimates refers to the increasingly sophisticated methods used to derive estimates of labour supply elasticity. Dandie and Mercante's review focuses on the more recent and sophisticated second and third generation studies.

with partners on low wages have higher elasticities than those with higher wages'. This is consistent with theory that predicts that:

1. households with low-income/low-paid work hours will place a relatively high value on additional income; and
2. households with high-income/high-paid work hours are more likely to use the benefits of higher hourly wage rates to reduce their working hours.

Due to a greater ability to substitute market for non-market production, married women with young children are likely to have higher wage elasticities than those without children (Dandie and Mercante, 2007:31).

Few studies focus on the elasticity of labour supply among lone parents. Dandie and Mercante conclude that, overall, 'the evidence on lone parents is mixed and would benefit from further study, particularly at the disaggregated level'. Dandie and Mercante find only one study that specifically considers the elasticity of labour supply of single men and women (Buddelmeyer, Creedy and Kalb, 2007), and note that this study indicates a positive but fairly inelastic response to wage increases.

Key tables from Dandie and Mercante's review are contained in Appendix D. At a more general level, however, the following conclusions might be drawn for the purposes of this report. Firstly, a range of studies and economic theory suggest a positive relationship between women's wages and their decisions to participate in the formal labour market and the number of hours they work. Secondly, few studies focus specifically on the effects of minimum wage decisions. However, the findings of studies that might be assumed to have some relevance to low wage earners such as Kalb (2000), together with economic theory, suggest a positive relationship between wages and labour supply that is relatively large. However, there is considerable scope for further research to gain insights into this relationship. Thirdly, a wide range of social and economic variables that are unrelated to minimum wages have a significant impact on women's labour market participation decisions. To this extent, the importance of minimum wage decisions may relate not only to direct effects on labour supply but to their contribution to social norms and expectations relating to labour market participation.

### **6.3 Discussion and summary**

It is significant to note the different predictions for women's labour force participation that flow from increases in women's own wages compared with increases in family income. In contrast with the effects of increases in women's own wages, increases in family income are predicted to reduce women's labour force participation. This might be explained by a range of factors but standard economic theory posits that it is women's traditional role as a secondary wage earner that contributes to their lower rates of labour force participation when family income rises. Earnings structures which entrench relatively low earnings among women act to reinforce existing divisions of labour in which women become the secondary earners in their families and, in many cases, forgo formal labour market participation. In this context, labour market structures which reduce gender pay gaps play a potentially important role in reducing traditional gendered divisions of labour within households and are likely to have a long-term positive impact on gender wage equality.

## 7. Summary and conclusion

While there are different methods of defining the term 'low pay', it is possible to use a range of indicators to identify particular industries and occupations that are associated with relatively low levels of earnings. By referring to both relative average earnings and the concentration of employees being paid at rates close to the minimum wage, six industries have been identified as low paid: Agriculture; Wholesale trade; Retail trade; Accommodation, cafés and restaurants; Cultural and recreational Services; and Personal and other services. There is a more diverse spread of low pay among occupational groups, with six of the nine major ASCO classifications showing some indication of low pay.

It is possible to identify gender pay differentials within low-paid industries and occupations. However, these differences are often less than the differences estimated for higher paying industries. Further, the gender pay differences within industries and occupations vary across the earnings distribution. Within low-paid industries and occupations, gender differences in earnings tend to be lower among those in the bottom quartile of the earnings distribution compared with those at the top. However, recent trends show that gender pay gaps within low-paid industries and occupations are neither uniform nor stable over time. Further, it is not possible to identify simple, direct relationships between changes in the industry and occupation composition of employment as a source of change in the gender wage differential.

Minimum wage rates were shown to play a relatively minor role in determining the distribution of Australian wages. In contrast to the situation reported in other countries, minimum wages in Australia do not appear to substantially limit the payment of wages below the minimum rate and wage rates towards the bottom end of the Australian wage distribution do not cluster around the minimum wage rate.

However, in the absence of minimum wage adjustments, it is likely that the gender pay gap would have been up to 2.7 per cent greater. This is an important outcome for arguments of wage equity. In addition, studies of women's labour supply suggest that wage increases have links with women's willingness to participate in the labour force. Available evidence therefore suggests that minimum wage decisions play a dual role: increasing wage equity and encouraging labour force participation, particularly among low-wage employees.

This finding is reinforced by analysis of low-paid industries and occupations which demonstrates 'unexplained' differences in gender earnings in low-paid industries. While gender pay gaps are frequently attributed to women's over-representation in part-time and casual forms of employment, there are limits to which patterns of part-time or casual work can provide a full explanation of gender differences in earnings, particularly hourly earnings. The 'penalty' for working on a part-time or casual basis appears to be higher among women than it is for men. Similarly, other employee characteristics – such as being single, having dependent children, firm size, and union membership – appear to be associated with greater reductions in earnings for women than is the case for men. These links, however, vary between industries and there is little uniformity across low-paid sectors.

Women's labour force participation patterns, particularly decisions to enter or exit the labour market, are correlated with women's own wages and there is some research suggesting this relationship is more significant among low-wage earners. However, there is considerable scope for further research to gain insights into this relationship.

A key finding from this study is that minimum wage decisions are one of a range of important factors influencing gender differences and patterns of women's labour market

participation. However such decisions cannot be isolated from the broad social and economic environment in which they operate. The role that minimum wage decisions play appears to be linked not only to their role as an important source of wage growth for many women but also as a determinant of women's involvement in paid work. This latter effect of minimum wages will have long-lasting effects on gender-based wage equality in the Australian labour market.

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## Appendix A: Blinder and Oaxaca decomposition approach

The standard Blinder (1973) and Oaxaca (1973) decomposition approach used in this report is described as follows.

Under this approach separate wage equations are estimated for males and females:

$$\overline{\ln Y_m} = \hat{\beta}_{0m} + \overline{V_m} \hat{\beta}_m \quad (2)$$

$$\overline{\ln Y_f} = \hat{\beta}_{0f} + \overline{V_f} \hat{\beta}_f \quad (3)$$

where, as before,  $V$  denotes a vector of wage determinants that includes educational attainment, years of labour market experience and other determinants known to affect earnings,  $\hat{\beta}$  is a vector of estimated coefficients associated with the wage determinants,  $\hat{\beta}_0$  is the estimated constant term in the regression model, and  $m$  and  $f$  denote males and females respectively. A bar over the variable denotes a sample mean.

The difference in the mean values of the two dependent variables ( $\overline{\ln Y_m} - \overline{\ln Y_f}$ ) provides a measure of the raw wage gap (or percentage gender wage differential) (RAW). To measure how much of the gap is a result of discrimination and how much may be attributed to differences in characteristics (eg. qualifications, occupational tenure etc.) between the sexes, Blinder and Oaxaca propose the following decomposition procedure:

$$\overline{\ln Y_m} - \overline{\ln Y_f} = (\overline{V_m} - \overline{V_f}) \hat{\beta}_m + \overline{V_f} (\hat{\beta}_m - \hat{\beta}_f) + (\hat{\beta}_{0m} - \hat{\beta}_{0f}) \quad (4)$$

(RAW)      (EXPL)      (COEF)      (UNEXP)

where the first term on the right-hand side (EXPL) measures the portion of the wage gap attributable to differences in individual characteristics (as evaluated using the male wage equation) and is often labelled the explained portion (or skill differential). The second term on the right-hand side (COEF) is a measure of the component of the wage gap due to differences in returns to these characteristics. The third term on the right-hand side (UNEXP) measures the difference in the constants ( $\hat{\beta}_{0m} - \hat{\beta}_{0f}$ ) and is a further unexplained portion. Generally COEF + UNEXP is referred to as the 'unexplained portion of the gender pay gap'.

## Appendix B: Regression results for separate industry wage equations

The following tables present the regression results for separate male and female wage equations at the industry level. Please note that there is no table for Agriculture, as the wage equation was not significant for this industry.

**Table B.1: Regression results for Wholesale trade, 2006**

<b>Dependent variable</b>	Natural log of hourly earnings		
<b>R<sup>2</sup> adjusted</b>	.207		
<b>Sample size</b>	n = 236		
	<b>Coefficients</b>	<b>t-statistics</b>	<b>Significance</b>
Constant	2.586	14.673	.000
Age21_24	.068	.434	.665
Age25_34	.176	1.207	.229
Age35_44	.163	1.001	.318
Age45_54	.202	1.255	.211
Age55_and_up	.240	1.283	.201
Occ_tenure	.017	1.810	.072
Occ_tenure2	0.000	-.285	.776
Job_tenure	-.016	-2.738	.007
Gender (female=1)	-.217	-3.229	.001
Kids0_15	.181	2.386	.018
Bornoz	.046	.595	.552
Single	-.085	-.892	.373
Contract	-.001	-.004	.997
Casual	.002	.017	.987
Part-time	.146	1.486	.139
Postgrad	.325	1.846	.066
Bachelor	.186	1.643	.102
Diploma	.303	2.273	.024
Cert	-.020	-.221	.825
Year11_less	-.105	-1.207	.229
Urban	.194	2.903	.004
Size20-99	-.021	-.297	.766
Size100-499	.144	1.557	.121
Size500	.103	.701	.484
Union	-.128	-1.275	.204

Table B.2: Regression results for Retail trade, 2006

<b>Dependent variable</b>	Natural log of hourly earnings		
<b>R<sup>2</sup> adjusted</b>	0.420334		
<b>Sample size</b>	n = 929		
	<b>Coefficients</b>	<b>t-statistics</b>	<b>Significance</b>
Constant	2.575	40.098	0.000
Age21_24	0.240	5.996	0.000
Age25_34	0.329	7.522	0.000
Age35_44	0.358	7.091	0.000
Age45_54	0.390	7.068	0.000
Age55_and_up	0.372	5.841	0.000
Occ_tenure	0.011	2.289	0.022
Occ_tenure2	0.000	-1.707	0.088
Job_tenure	0.001	0.270	0.787
Gender (female=1)	-0.048	-1.939	0.053
Kids0_15	0.027	0.774	0.439
Bornoz	-0.010	-0.289	0.773
Single	-0.100	-2.808	0.005
Contract	-0.037	-0.732	0.464
Casual	0.048	1.533	0.126
Part-time	-0.064	-1.933	0.054
Postgrad	0.473	4.196	0.000
Bachelor	0.084	1.574	0.116
Diploma	0.002	0.035	0.972
Cert	-0.089	-2.459	0.014
Year11_less	-0.218	-7.319	0.000
Urban	0.061	2.516	0.012
Size20-99	0.019	0.678	0.498
Size100-499	0.014	0.410	0.682
Size500	0.104	1.959	0.050
Union	-0.007	-0.225	0.822

Table B.3: Regression results for Accommodation, cafés and restaurants, 2006

Dependent variable	Natural log of hourly earnings		
R <sup>2</sup> adjusted	0.232695		
Sample size	n = 368		
	Coefficients	t-statistics	Significance
Constant	2.251	22.729	0.000
Age21_24	0.181	2.984	0.003
Age25_34	0.298	4.351	0.000
Age35_44	0.369	4.496	0.000
Age45_54	0.193	2.265	0.024
Age55_and_up	0.084	0.792	0.429
Occ_tenure	0.010	1.061	0.290
Occ_tenure2	0.000	-0.204	0.839
Job_tenure	0.003	0.485	0.628
Gender (female=1)	0.021	0.523	0.601
Kids0_15	-0.077	-1.308	0.192
Bornoz	0.076	1.347	0.179
Single	-0.087	-1.682	0.093
Contract	0.217	1.019	0.309
Casual	0.117	2.411	0.016
Part-time	0.029	0.606	0.545
Postgrad	0.397	2.734	0.007
Bachelor	0.086	0.861	0.390
Diploma	0.064	0.824	0.411
Cert	-0.022	-0.396	0.693
Year11_less	-0.154	-2.986	0.003
Urban	0.107	2.616	0.009
Size20-99	0.152	3.136	0.002
Size100-499	0.143	2.242	0.026
Size500	0.146	1.453	0.147
Union	0.084	1.073	0.284

Table B.4: Regression results for Cultural and recreational services, 2006

<b>Dependent variable</b>	Natural log of hourly earnings		
<b>R<sup>2</sup> adjusted</b>	.067		
<b>Sample size</b>	n = 149		
	<b>Coefficients</b>	<b>t-statistics</b>	<b>Significance</b>
Constant	2.880	11.502	.000
Age21_24	-.217	-1.415	.160
Age25_34	-.186	-1.100	.273
Age35_44	-.025	-.135	.893
Age45_54	-.044	-.210	.834
Age55_and_up	.208	.835	.406
Occ_tenure	.004	.243	.809
Occ_tenure2	0.000	-.185	.854
Job_tenure	.004	.365	.716
Gender (female=1)	-.084	-1.005	.317
Kids0_15	.122	1.098	.274
Bornoz	-.089	-.771	.442
Single	.019	.165	.869
Contract	.114	.972	.333
Casual	-.113	-1.003	.318
Part-time	-.079	-.713	.477
Postgrad	.146	.798	.427
Bachelor	.203	1.442	.152
Diploma	-.001	-.005	.996
Cert	-.001	-.010	.992
Year11_less	.004	.028	.977
Urban	.066	.681	.497
Size20-99	.103	.858	.393
Size100-499	.233	1.672	.097
Size500	.248	1.333	.185
Union	.069	.567	.572

Table B.5: Regression results for Personal services, 2006

<b>Dependent variable</b>	Natural log of hourly earnings		
<b>R<sup>2</sup> adjusted</b>	0.360314		
<b>Sample size</b>	n = 207		
	<b>Coefficients</b>	<b>t-statistics</b>	<b>Significance</b>
Constant	1.805	7.323	0.000
Age21_24	0.440	2.736	0.007
Age25_34	0.595	3.554	0.000
Age35_44	0.538	2.935	0.004
Age45_54	0.515	2.736	0.007
Age55_and_up	0.366	1.720	0.087
Occ_tenure	-0.006	-0.399	0.691
Occ_tenure2	0.000	0.590	0.556
Job_tenure	0.012	1.538	0.126
Gender (female=1)	0.123	1.467	0.144
Kids0_15	0.142	1.401	0.163
Bornoz	0.041	0.366	0.715
Single	0.076	0.585	0.560
Contract	0.070	0.507	0.613
Casual	0.148	1.192	0.235
Part-time	-0.113	-1.077	0.283
Postgrad	0.444	2.763	0.006
Bachelor	0.172	1.101	0.272
Diploma	0.144	1.095	0.275
Cert	0.218	1.864	0.064
Year11_less	0.146	1.137	0.257
Urban	0.042	0.509	0.612
Size20-99	0.042	0.437	0.663
Size100-499	0.137	1.246	0.214
Size500	0.212	1.595	0.112
Union	0.386	3.723	0.000

## Appendix C: Within-industry male and female wage equations

The following tables present the regression results for separate male and female wage equations at the industry level. Please note that there is no table for Agriculture as the female wage equation was not significant for this industry.

**Table C.1: Wholesale trade**

	Men				Women			
	B	t-stat	Prob	Mean	B	t-stat	Prob	Mean
Constant	0.057	11.251	0.000		2.576	7.680	0.000	
Age21_24	0.267	0.288	0.774	0.083	0.035	0.110	0.913	0.088
Age25_34	0.208	1.529	0.129	0.237	-0.046	-0.138	0.891	0.200
Age35_44	0.248	1.062	0.290	0.276	0.155	0.389	0.699	0.300
Age45_54	0.365	1.248	0.214	0.224	0.037	0.097	0.923	0.288
Age55_and_up	0.018	1.577	0.117	0.103	-0.005	-0.013	0.989	0.088
Occ_tenure	0.000	1.470	0.144	8.071	0.048	1.850	0.070	6.246
Occ_tenure2	-0.010	-0.275	0.784	172.241	-0.002	-1.600	0.115	90.712
Job_tenure	0.190	-1.341	0.182	5.200	-0.034	-2.694	0.009	4.544
Kids0_15	0.029	1.887	0.061	0.372	0.099	0.795	0.430	0.450
bornoz	-0.037	0.279	0.781	0.801	0.036	0.267	0.790	0.788
single	0.149	-0.328	0.744	0.276	-0.124	-0.566	0.574	0.175
contract	0.172	0.819	0.414	0.058	-0.168	-0.979	0.332	0.088
casual	0.035	1.114	0.267	0.122	-0.171	-1.255	0.215	0.200
part_time	0.227	0.186	0.853	0.083	0.131	1.063	0.293	0.325
postgrad	0.153	1.026	0.307	0.038	0.431	1.288	0.203	0.025
bachelor	0.317	0.941	0.348	0.083	0.242	1.391	0.170	0.213
diploma	-0.082	1.790	0.076	0.071	0.177	0.781	0.438	0.063
cert	-0.222	-0.730	0.467	0.301	0.070	0.445	0.658	0.188
year11_less	0.156	-1.904	0.059	0.308	0.115	0.789	0.433	0.288
Urban	-0.057	1.709	0.090	0.673	0.200	1.597	0.116	0.725
Size20_99	0.234	-0.593	0.554	0.442	-0.086	-0.673	0.504	0.413
Size100_499	-0.011	1.909	0.058	0.167	-0.144	-0.889	0.378	0.200
Size500_up	-0.192	-0.054	0.957	0.045	0.336	1.445	0.154	0.063
Union	0.057	-1.472	0.143	0.122	0.124	0.595	0.554	0.088
Mean of Y	3.025				2.901			
Adjusted R <sup>2</sup>	0.212				0.220			
n	156				80			



Table C.2: Retail trade

	Men				Women			
	B	t-stat	Prob	Mean	B	t-stat	Prob	Mean
Constant	2.440	25.340	0.000		2.601	30.086	0.000	
Age21_24	0.233	4.148	0.000	0.163	0.251	4.152	0.000	0.127
Age25_34	0.383	5.672	0.000	0.187	0.298	4.786	0.000	0.170
Age35_44	0.294	3.948	0.000	0.151	0.409	5.595	0.000	0.159
Age45_54	0.418	4.898	0.000	0.098	0.348	4.636	0.000	0.096
Age55_and_up	0.435	4.875	0.000	0.072	0.318	3.394	0.001	0.063
Occ_tenure	0.016	2.440	0.015	6.065	0.004	0.565	0.573	4.722
Occ_tenure2	0.000	-2.157	0.032	110.552	0.000	0.066	0.948	75.255
Job_tenure	0.003	0.810	0.418	3.864	0.001	0.134	0.893	3.101
Kids0_15	0.096	1.980	0.048	0.232	-0.031	-0.578	0.563	0.233
bornoz	-0.003	-0.052	0.959	0.868	-0.002	-0.037	0.970	0.859
single	-0.022	-0.429	0.668	0.512	-0.144	-2.909	0.004	0.509
contract	-0.088	-1.383	0.167	0.074	0.046	0.547	0.585	0.043
casual	0.033	0.662	0.509	0.352	0.058	1.389	0.165	0.550
part_time	-0.108	-2.021	0.044	0.385	-0.034	-0.751	0.453	0.712
postgrad	0.478	3.722	0.000	0.017	0.497	2.266	0.024	0.006
bachelor	0.099	1.403	0.161	0.072	0.056	0.661	0.509	0.049
diploma	0.088	0.988	0.324	0.038	-0.011	-0.139	0.890	0.051
cert	-0.102	-2.049	0.041	0.273	-0.063	-1.152	0.250	0.149
year11_less	-0.183	-4.169	0.000	0.366	-0.232	-5.626	0.000	0.462
Urban	0.065	1.943	0.053	0.620	0.040	1.135	0.257	0.616
Size20_99	0.086	2.201	0.028	0.409	-0.030	-0.734	0.463	0.341
Size100_499	0.096	2.056	0.040	0.254	-0.053	-1.088	0.277	0.254
Size500_up	0.180	2.150	0.032	0.041	0.062	0.873	0.383	0.076
Union	0.024	0.541	0.589	0.170	-0.021	-0.446	0.656	0.215
Mean of Y	2.735				2.641			
Adjusted R <sup>2</sup>	0.482				0.337			
n		418				511		

Table C.3: Accommodation, cafés and restaurants

	Men				Women			
	B	t-stat	Prob	Mean	B	t-stat	Prob	Mean
Constant	1.885	11.377	0.000		2.438	19.209	0.000	
Age21_24	0.245	2.545	0.012	0.210	0.131	1.586	0.114	0.156
Age25_34	0.220	1.925	0.056	0.172	0.344	3.839	0.000	0.166
Age35_44	0.443	3.444	0.001	0.146	0.309	2.690	0.008	0.161
Age45_54	0.191	1.235	0.219	0.102	0.199	1.779	0.077	0.152
Age55_and_up	0.095	0.544	0.587	0.064	0.050	0.352	0.725	0.047
Occ_tenure	0.033	2.276	0.024	5.766	0.000	-0.013	0.990	3.460
Occ_tenure2	-0.001	-1.172	0.243	93.249	0.000	-0.012	0.990	39.282
Job_tenure	-0.005	-0.548	0.584	3.254	0.010	1.045	0.297	2.117
Kids0_15	-0.050	-0.513	0.609	0.185	-0.086	-1.048	0.296	0.237
bornoz	0.089	1.018	0.311	0.828	0.075	0.914	0.362	0.867
single	-0.060	-0.745	0.458	0.548	-0.150	-2.107	0.036	0.417
contract	0.315	0.810	0.419	0.006	0.274	1.041	0.299	0.009
casual	0.119	1.489	0.139	0.535	0.129	1.980	0.049	0.720
part_time	0.105	1.226	0.222	0.471	0.030	0.458	0.647	0.697
postgrad	0.476	2.046	0.043	0.019	0.312	1.598	0.112	0.019
bachelor	0.083	0.595	0.553	0.057	-0.006	-0.037	0.970	0.033
diploma	0.090	0.756	0.451	0.089	0.014	0.122	0.903	0.071
cert	0.023	0.257	0.798	0.236	-0.099	-1.270	0.206	0.232
year11_less	-0.075	-0.910	0.364	0.287	-0.252	-3.596	0.000	0.412
Urban	0.119	1.820	0.071	0.643	0.142	2.545	0.012	0.488
Size20_99	0.345	3.898	0.000	0.567	0.070	1.135	0.258	0.517
Size100_499	0.417	3.983	0.000	0.191	-0.004	-0.051	0.959	0.152
Size500_up	0.376	2.687	0.008	0.070	0.053	0.328	0.744	0.028
Union	0.109	0.859	0.392	0.089	0.077	0.689	0.492	0.062
Mean of Y	2.726				2.707			
Adjusted R <sup>2</sup>	0.268				0.204			
n		157				211		

Table C.4: Cultural and recreational services

	Men				Women			
	B	t-stat	Prob	Mean	B	t-stat	Prob	Mean
Constant	2.622	7.019	0.000		2.652	6.403	0.000	
Age21_24	0.122	0.577	0.567	0.181	-0.330	-1.349	0.183	0.156
Age25_34	0.125	0.494	0.624	0.264	-0.387	-1.478	0.145	0.169
Age35_44	0.346	1.408	0.166	0.250	-0.171	-0.548	0.586	0.182
Age45_54	-0.381	-1.140	0.260	0.083	0.005	0.016	0.987	0.221
Age55_and_up	0.402	1.290	0.203	0.069	0.107	0.206	0.838	0.026
Occ_tenure	0.008	0.371	0.713	6.177	0.021	0.567	0.573	4.632
Occ_tenure2	0.000	-0.632	0.530	94.381	-0.001	-0.740	0.462	48.916
Job_tenure	0.022	1.364	0.179	4.144	0.012	0.460	0.648	3.594
Kids0_15	0.293	1.618	0.112	0.208	0.065	0.384	0.703	0.247
bornoz	-0.007	-0.043	0.966	0.847	-0.146	-0.801	0.427	0.805
single	0.123	0.837	0.407	0.472	-0.072	-0.365	0.716	0.429
contract	0.238	1.454	0.153	0.167	0.024	0.124	0.902	0.156
casual	-0.387	-2.737	0.009	0.361	0.239	1.305	0.198	0.442
part_time	0.361	2.143	0.037	0.333	-0.260	-1.299	0.200	0.597
postgrad	0.403	1.376	0.175	0.042	0.216	0.881	0.382	0.078
bachelor	-0.026	-0.133	0.895	0.194	0.441	1.967	0.054	0.182
diploma	-0.136	-0.670	0.506	0.097	0.295	1.157	0.253	0.104
cert	-0.237	-1.367	0.178	0.208	0.234	1.203	0.234	0.143
year11_less	-0.225	-1.287	0.205	0.250	0.071	0.361	0.720	0.234
Urban	0.109	0.884	0.381	0.653	0.224	1.275	0.208	0.649
Size20_99	-0.021	-0.126	0.901	0.458	0.197	1.052	0.298	0.481
Size100_499	0.071	0.369	0.714	0.347	0.080	0.341	0.735	0.208
Size500_up	0.140	0.495	0.623	0.069	0.187	0.659	0.513	0.117
Union	-0.032	-0.204	0.839	0.153	0.141	0.609	0.545	0.130
Mean of Y	2.988				2.868			
Adjusted R <sup>2</sup>	0.246				0.044			
n		72				77		

Table C.5: Personal and other services

	Men				Women			
	B	t-stat	Prob	Mean	B	t-stat	Prob	Mean
Constant	1.877	3.654	0.000		2.100	19.209	6.757	
Age21_24	-0.119	-0.253	0.801	0.058	0.400	1.586	2.165	0.144
Age25_34	0.440	1.018	0.312	0.233	0.362	3.839	1.624	0.144
Age35_44	0.411	0.949	0.345	0.301	0.304	2.690	1.245	0.183
Age45_54	0.276	0.608	0.545	0.272	0.310	1.779	1.275	0.240
Age55_and_up	0.267	0.522	0.603	0.097	0.273	0.352	1.041	0.087
Occ_tenure	-0.023	-0.865	0.390	11.364	0.020	-0.013	1.024	6.847
Occ_tenure2	0.001	0.696	0.488	215.003	0.000	-0.012	-0.573	113.865
Job_tenure	0.020	1.486	0.141	10.566	0.008	1.045	0.621	4.533
Kids0_15	0.132	0.824	0.412	0.447	0.153	-1.048	0.890	0.202
bornoz	-0.038	-0.212	0.832	0.874	0.145	0.914	0.860	0.875
single	0.301	1.297	0.198	0.155	-0.164	-2.107	-0.945	0.375
contract	0.145	0.686	0.495	0.097	0.001	1.041	0.006	0.067
casual	-0.012	-0.033	0.974	0.078	0.151	1.980	1.090	0.250
part_time	-0.155	-0.643	0.522	0.097	-0.199	0.458	-1.519	0.423
postgrad	0.434	1.860	0.067	0.117	0.918	1.598	3.521	0.058
bachelor	0.359	1.341	0.184	0.087	0.328	-0.037	1.501	0.087
diploma	0.175	0.860	0.392	0.214	0.273	0.122	1.441	0.135
cert	0.324	1.718	0.090	0.301	0.075	-1.270	0.476	0.279
year11_less	0.412	1.623	0.109	0.097	0.164	-3.596	1.026	0.279
Urban	0.105	0.791	0.432	0.660	0.054	2.545	0.484	0.654
Size20_99	0.018	0.111	0.912	0.262	0.006	1.135	0.047	0.212
Size100_499	0.010	0.060	0.952	0.233	0.135	-0.051	0.787	0.154
Size500_up	0.133	0.679	0.499	0.146	0.119	0.328	0.570	0.087
Union	0.620	3.973	0.000	0.573	-0.007	0.689	-0.040	0.240
Mean of Y	3.046				2.794			
Adjusted R <sup>2</sup>	0.323				0.332			
n		103				104		

## Appendix D: Summaries of studies of women's elasticity of labour supply

**Table D.1: Labour force participation elasticities of women with respect to own wages, Australian studies**

Type of study	Mean elasticity	Range of elasticities	Number of elasticities examined
All studies	0.75	0.07 to 1.82	15
First-generation studies	0.92	0.22 to 1.82	5
Second-generation studies	0.66	0.07 to 1.61	10
Grouped-average data studies	1.10	0.71 to 1.82	4
Individual-level data studies	0.62	0.07 to 1.61	9

Source: Birch (2005), p70

**Table D.2: Hours of work elasticities of women with respect to own wages, Australian studies**

Type of study	Mean elasticity	Range of elasticities	Number of elasticities examined
All studies	0.33	−0.19 to 1.30	25
Married women studies	0.29	−0.19 to 1.30	22
All women studies	0.60	0.10 to 1.00	3
Individual labour-supply studies	0.50	−0.12 to 1.30	15
Household labour-supply studies	0.14	−0.19 to 0.53	10
Data from before 1986	0.67	0.32 to 1.30	3
Data from 1986 to 1990	0.24	−0.19 to 0.88	18
Data from 1991 onwards	0.47	0.08 to 1.00	4

Source: Birch (2005), p70

**Table D.3: Summary of the responsiveness of population groups to wages based on Australian evidence**

<b>Evidence on variation between population groups</b>				
	<b>Married men</b>	<b>Married women</b>	<b>Lone parents</b>	<b>Singles</b>
<i>Responsiveness</i>	Least responsive	Fairly responsive, and a wider variation in responsiveness	Possibly the highest responsiveness and widest range	Likely to be more responsive than married men and less responsive than married women. Single women likely to be a little more responsive than single men.
<i>Uncompensated wage elasticity</i>	Mostly in the range 0 (or slightly negative) to around 0.3 with average around 0.	Mostly in the range 0 to 0.8 with an average around 0.3.	Around 0.5 on average but probably higher than this (could be as high as 1.5)	Insufficient data, however an average around 0.3 is possible.
<b>Evidence on variation with population groups</b>				
	<b>Married men</b>	<b>Married women</b>	<b>Lone parents</b>	<b>Singles</b>
<i>Source of variability within the population group</i>	Lifecycle stage/ children	Slightly more responsiveness from those without children than those with young children, however the difference is fairly small	Higher wage elasticity for those with dependent children compared to those without children or where children have left home. Those with older children (school aged) generally have higher elasticities than those with younger children.	
	Wage level	Some evidence of slightly reduced responsiveness for those in families with both partners with higher wages compared to those with lower wages.	Generally those in families with both partners with lower wage levels have higher elasticities than those with higher wage levels.	
	Hours of work/ employment status		Those on lower hours (part-time work) have higher elasticities than those working higher hours (full-time work).	Generally higher elasticities for those not working or working part-time hours.
	Education	Generally higher responsiveness for those with lower educational attainment.	Generally higher responsiveness for those with lower educational attainment.	
	Foreign status		Australian-born women have higher elasticities than foreign-born women. Of the foreign-born, those from NESB backgrounds have the lowest elasticities.	
	Welfare dependency			Lower elasticities for lone mothers with some degree of welfare dependency.

Source: Dandie and Mercante (2007), p 43.

Notes from Dandie and Mercante (2007): As the number of disaggregated studies is small, some of the reported responses within a particular population group are based on single studies. Most of the studies upon which this table is based use data that exclude persons that are aged around Australian Age Pension age (65 years for men and changing from 60 to 65 years for women) or older. See Table A9 (Dandie and Mercante, 2007) for further details of the samples of the studies referred to in the review. Given that the majority of lone parent estimates, and all of the single men and single women estimates, presented in this review are unconditional wage elasticities, we would expect the conditional wage elasticities for these groups to be smaller than those shown in this table. For example, in the estimates presented in Tables A1 and A2 for the study by Breunig, Cobb-Clark and Gong (2005), the participation effect could account for up to 70 per cent of the unconditional wage elasticity estimate. Making the adjustment from the studies that provide sufficient information to do so, the average elasticity for lone parents drops to around 0.4, for single men it drops to 0.0 and for single women it drops to 0.1.



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