Labour Market Deregulation and Gender Wage Equity: Evidence from WA

by

Geoffrey V. Crockett & Alison C. Preston

School of Economics and Finance, Curtin University

Women's Economic Policy Analysis Unit
(WEPAU)

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Abstract

It is widely predicted labour market deregulation will adversely impact on female earnings. The evidence for Australia has, so far, been mixed. Content analysis of agreements suggests that equal employment opportunities are been compromised, but aggregate wage data shows that this has had no discernible effect on the gender wage gap. In this paper we focus specifically on Western Australia and show that where radical industrial relations reforms have been introduced, gender wage equity has, indeed, been compromised. Western Australia 'leads the way' in industrial relations reforms. Many reforms recently proposed at the federal level have already been implemented in Western Australia. The latter thus provides a window on future developments with respect to gender wage equality ... and the outlook is not good.

I. Introduction

In recent years the productivity performance of the Australian economy has been extraordinary. Over the latest cycle (1993/94 to 1997/98) productivity growth has increased at an average rate of 2.4% per year. This compares to average annual growth rates of 0.8% to 1.6% in previous cycles. The current cycle, therefore, breaks with the past and evidence is mounting to show that it is not a short-run phenomenon. That is, the economy looks set to continue on this new growth trajectory (Parham, 1999). The factors driving these higher rates are now a subject of much interest and debate. The Commonwealth Treasury attributes the current performance to sound macroeconomic policy and microeconomic reforms aimed at increasing the responsiveness and flexibility of the economy (CofA, 1999).

In the labour market, the drive to increase flexibility commenced in the mid 1980s with the implementation of two-tiered wage bargaining, where second tier increases were linked to trade-offs, such as award restructuring and multi-skilling (Macklin, et al, 1993). In 1991 this new policy direction stepped up a gear with the introduction of enterprise bargaining. Subsequent industrial relations legislative amendments have focussed on promoting enterprise bargaining and labour market deregulation as key components of the workplace reform/workplace productivity policy. Recent ('second wave') reforms proposed by the Federal Minister for Employment, Workplace Relations and Small Business, the Hon. Peter Reith, and now before the Commonwealth Parliament in the form of the *Workplace Relations Legislation Amendment (More Jobs, Better Pay) Bill 1999,* aim to further curb union power and "... encourage the use of agreements ... to achieve improved productivity and competitiveness ..." (Reith, 1999).

Aside from presupposing that there is a link between industrial relations reform and workplace productivity (Rimmer (1998) and Hawke and Drago (1998) show that enterprise bargaining of

itself has no discernible effect on workplace performance) the policy challenges established normative principles, such as the right to equal pay. International literature on female pay points to an inverse relationship between the degree of centralisation and the gender pay gap (Rubbery, 1992). The groups most threatened by labour market deregulation are those with the poorest bargaining power, typically those in low status occupations, part-time and casual work and those not unionised - with women being disproportionately represented in these groups (Robertson, 1992; Burgmann, 1994; and Sayers, 1998).

Thus far the evidence as to the effect of labour market deregulation on Australian gender wage inequality has been mixed. Content analysis of agreements generally shows that equal employment opportunity provisions have been weakened and that the beneficiaries of the new arrangements are managers rather than workers (e.g. Boreham, Hall, Harley and Whitehouse, 1997). At an aggregate level, however, these changes have not adversely impacted on gender earnings. Although there has been a slight deterioration in female/male relative earnings since the reforms were first introduced, the change has not been statistically significant (Wooden, 1997).

In this paper we offer new insight into the effects of labour market deregulation on gender earnings inequality in Australia. Our focus of analysis is Western Australia, a state which has "... led the way in Australia through labour relations reforms" (WA 2000). At August 1991 there was a 17.5 per cent gap in the earnings of Western Australian males and females. By August 1998 this gap had grown to 23 per cent.[1] The rate of deterioration of gender pay equality in Western Australia in this period outstripped that of all other states and territories in Australia. Our analysis in this paper shows that the widening gender earnings gap had more to do with institutional transformations than adverse shifts in human capital endowments (as posited by neo-classical wage theory).

The plan of the paper is as follows. Section II offers a brief comment on the Western Australian industrial relations arrangements; Section III discusses reasons why the gender wage gap may change over time; Section IV discusses the data and methodology; Section V presents the results; and Section VI offers some concluding remarks.

II   Western Australia

In Western Australia the main act governing industrial relations matters has been the *Industrial Relations Act 1979 (WA)*. Developments at the State level have largely mirrored those at the Federal level, although since 1991 departures are evident. Under Section 51(2) of the act, the WA Industrial Relations Commission is required to convene a hearing to give consideration to the national wage case (NWC) decisions of the Federal industrial tribunal. The provisions of Section 51 are still valid, but the introduction of alternative bargaining arrangements in Western Australia has affected the coverage of awards, and thus the degree of flow on of Federal decisions.

The principal legislative changes which have occurred since 1991 include the introduction of the *Workplace Agreements Act 1993 (WA)* and the *Minimum Conditions of Employment Act 1993 (WA)*. The *Workplace Agreements Act* received Royal Assent on 23 November 1993

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[1]   The decline was significant (t=2.79).

and came into effect on 1 December 1993. The clear intention of the *Workplace Agreements Act* is the promotion of direct bargaining (i.e. as between the employer and employee direct, without third party involvement). (For more details on the *Workplace Agreements Act* see Ford, 1996).

Since the introduction of the *Workplace Agreements Act* (or 'First Wave' of industrial reform), there have been a number of legislative amendments to the *Industrial Relations Act 1979 (WA)*, commonly known as Second' and 'Third' waves. The proposed Second Wave reforms met with weeks of industrial unrest, culminating in a withdrawal of the bill and a watering down of the planned reforms. The Third Wave also met with similar levels of conflict, although not as efficacious (Bailey and McAtee, 1999). The principal aim of the latter (Third Wave) was curtailment of union activity (Bailey and Horstman, 1999).

Underpinning the *Workplace Agreements Act* is the *Minimum Conditions of Employment Act*. This act covers minimums with respect to rates of pay, leave conditions, conditions for employment changes and record keeping requirements. According to Keirath, it is designed to establish a:

> "... safety net of core minimum conditions which will extend to and bind all employees and employers and will be taken to be implied in any contract of employment including those governed by a workplace agreement, an award or industrial agreement ... It is a pacesetter in Australia and precedes the Federal legislation, foreshadowed by the Federal Minister for Industrial Relations, which will lay down certain minimum conditions of employment ..."
>
> (Second Reading Speech, Assembly, 8/7/93, pp.1456-1459.)

The minimum wage, as covered by the act, is set by the state Minister for industrial relations, usually based on the recommendations of the WA Industrial Relations Commission (although there is no requirement that that be the case). Penalty rates, allowances and loadings do not form part of the minimum weekly rates prescribed.

The minimum wage applies to employees aged 21 or more. Employees who are under 21 years of age are subject to different (lower) minimum rates. Part-time employees have pro-rata access to the minimum wage provisions. Unless otherwise stated by the Minister, the divisor is 40 (representing a 40 hour week). Casual employees (defined as persons not entitled to paid leave) are entitled to a loading of 15 per cent. Disabled persons may agree in writing to a wage lower than the set minimum wage.

Protagonists of the act argue that its minimums are meagre. The 15 per cent casual loading is, for example, 5 percentage points lower than the 20 per cent rate contained in most awards. The minimum wage is also lower than the minimum wages of most awards and the minimum wage in the Federal jurisdiction. When the act first came into effect the minimum wage was set at $275.5 per week. Shop assistants employed under the Shop and Warehouse (Wholesale and Retail Establishments) State Award 1977 were, at that time, entitled to a minimum of $385 per week. The fear is that via the act workers on higher award wage minimums will find themselves party to an individual agreement where the minimum wage is lower (Assembly, pp.3021.3022).[2]

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[2]   Legally there is nothing to stop individuals trading away their higher award wage minimums via a workplace agreement (so long as the new wage is not lower than that prescribed by the *Minimum Conditions of Employment Act 1993*. However, as part of the ratification process, the Commissioner of Workplace Agreements must ensure that: the agreement complies with the act; each party appears to understand his or her rights and

The protagonists also point out that the act has a number of significant omissions. Penalty rates, overtime rates and annual leave loading, for example, are not mentioned in the act. By implication these benefits may be negotiated away.[3]

III   Why Might the Wage Gap Change?

There are a number of reasons why the gender wage gap may change over time. Broadly they may be classified as 'productivity' (fair) effects or 'wage structure' (unfair) effects.[4] Human capital theory offers an explanation of why the former would cause the gap to change, but is unable to account for the latter. Wage structure effects are, instead, better explained by institutional factors.

According to human capital theory earnings vary across individuals because of differences in individual investments in human capital endowments (skills, qualification, experience etc.). In this paradigm women earn less than men because they possess less experience, less qualifications etc. The question thus arises as to why women are less well endowed with productivity generating characteristics than men. According to neo-classical theory it reflects individual choice. Women who anticipate leaving the workforce for child rearing purposes may choose to acquire less skills than men, particularly where the costs of skills acquisition is high and the time to recoup the benefits of the investment are low (Mincer and Polachek, 1974).

Changes in societal norms regarding working mothers may, therefore, be expected to affect female human capital investment decisions. In this way women may be acquiring more skills and experience relative to males, thus raising their relative earnings and reducing the gender wage gap. Empirical evidence for Australia indeed shows that this has been a factor in assisting gender wage convergence over the 1980s (e.g. Preston, 1997; and Kidd and Meng, 1997).

Legislation designed to promote equal employment opportunity (e.g. the *Sex Discrimination Act 1984* and the *Affirmative Action (Equal Employment Opportunity for Women) Act 1986*) may also be expected to facilitate gender earnings convergence. If women have better access to promotional and training opportunities then their incentive to investment in human capital will improve, resulting in higher earnings and a lower wage gap. Available evidence, however, suggests that these two acts have only had a minimal effect on the size of the wage gap in Australia (Kidd and Meng, 1997). The main factor contributing to the convergence in gender earnings has been the removal of institutionalised wage discrimination in the equal pay decisions of 1969 and 1972 (Miller, 1994; Gregory and Duncan, 1981; Mitchell, 1983).

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obligations under the agreement; no party to the agreement was persuaded by threats or intimidation to enter into it; and each party genuinely wishes to have the agreement registered (Section 30(1)). Where an agreement was likely to result in a wage rate substantially lower than that in the award the Commissioner of Workplace Agreements would request additional information on the agreement, the negotiation process etc.

[3]   An analysis of agreements lodged between August 1994 and March 1996 (covering 577 employers and 14,511 individuals) reveals that wage increases have been awarded in 83.05 per cent of cases, but a common feature of the agreements is an increase in hours of work (50.54%), and the elimination of: penalty rates (54.33%); overtime rates (40.49%); and annual leave loading (67.07%) (Commissioner for Workplace Agreements, Annual Report, 1996).

[4]   The term 'wage structure' refers to the structure of wage relativities (or pay differentials) in the labour market.

The rapid decline in the gender earnings differential following institutional intervention to change the wage structure is not a unique Australian phenomenon. Females in the UK similarly benefited from equal pay legislation introduced in the 1970s (Gregory, Daly and Ho, 1986). The US equal pay legislation had less of an impact, primarily because of the lack of supporting institutional structures (Gregory and Ho, 1985). The conclusion one may, therefore, draw is that institutions matter in the determination of female pay.[5] Weakening them might thus be expected to slow or reverse the trend in gender earnings convergence. In the remainder of this paper we provide some empirical evidence in support of this proposition.

IV   Data and Methodology

Data
The data for this study are drawn from the 1991 and 1996 Census Household Sample Files (HSFs) which contain a one per cent sample of the population. In keeping with most studies in this area our samples are restricted to full-time wage and salary earners aged between 16 and 64 years.[6] (Appendix A provides details on the data and variables used). In the 1996 Australian sample there are 26,370 males and 14,059 females. Further restricting these samples to Western Australia results in samples sizes of 2592 and 1320 for males and females, respectively.

Methodology
Economic studies of the gender pay gap typically employ some variant of the decomposition procedure as proposed by Blinder (1973) and Oaxaca (1973). The method requires the estimation of two separate wage equations of the form $\ln \hat{Y}_{im} = \hat{\beta}_{0m} + V_{im}\hat{\beta}_m$ and $\ln \hat{Y}_{if} = \hat{\beta}_{0f} + V_{if}\hat{\beta}_f$. The subscripts *m* and *f* denote males and females, respectively; V is a vector of characteristics known to affect wages; and $\hat{\beta}$ is a vector of estimated slope coefficients. On the assumption that the male wage structure represents the non-discriminatory norm, the raw wage gap can be decomposed as follows:

$$\overline{\ln Y_m} - \overline{\ln Y_f} = (\overline{V}_m - \overline{V}_f)\hat{\beta}_m + \overline{V}_f(\hat{\beta}_m - \hat{\beta}_f) + (\hat{\beta}_{0m} - \hat{\beta}_{0f}) \tag{1}$$

where, $\overline{V}$ is a vector of the means of the independent variables. The first term of the decomposition calculates the portion of the gap attributable to differences in individual characteristics (e.g. qualifications and experience), and is often labeled the *explained portion* (or skill differential). The second term calculates differences in returns to these characteristics, and is generally known as the *unexplained portion*.[7] The third term represents differences in

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[5]   For other references on this theme see Sayers (1998), Rubery (1992) and Whitehouse (1992).
[6]   Full-timers are defined as those working 35 or more hours per week in their main job. Our rational for restricting the sample to full-time wage and salary earners is to overcome some of the estimation difficulties associated with measuring the labour market experience of persons employed part-time.
[7]   If the female wage structure is taken as the non-discriminatory norm the explained portion is equal to $(\overline{V}_m - \overline{V}_f)\hat{\beta}_f$, and the unexplained portion is equal to $\overline{V}_m(\hat{\beta}_m - \hat{\beta}_f)$.

the constants ($\hat{\beta}_0$). Together the last two terms can be seen as providing an indicator of the extent of discrimination (Blinder, 1973) and/or data deficiencies.

To investigate changes in the gender wage gap over time we use a procedure developed by Wellington (1993). Wellington extends the Blinder/Oaxaca decomposition technique as follow:

$$(\overline{\ln Y_{m96}} - \overline{\ln Y_{m91}}) - (\overline{\ln Y_{f96}} - \overline{\ln Y_{f91}}) = \left[(\overline{V}_{m96} - \overline{V}_{m91})\hat{\beta}_{m96} - (\overline{V}_{f96} - \overline{V}_{f91})\hat{\beta}_{f96}\right] + \\ \left[\overline{V}_{m91}(\hat{\beta}_{m96} - \hat{\beta}_{m91}) - \overline{V}_{f91}(\hat{\beta}_{f96} - \hat{\beta}_{f91})\right]$$

(2)

where the subscripts 96 and 91 refer, respectively, to the years 1996 and 1991. The terms of the left-hand side measure the change in the raw wage gap over the period 1991 to 1996. The first term on the right-hand side measures the portion of the change attributable to changes in the characteristics (e.g. experience and qualifications) of males and females over the period. (The decomposition method proposed values such changes at 1996 levels).   The second term on the right-hand side is, therefore, the residual. It measures the extent to which the change in the wage gap cannot be explained by changes in the characteristics of males and females. This evaluation holds the group's 1991 characteristics constant.   The measured change is thus associated with wage structure effects. In other words, a change in the way these characteristics are rewarded over the period.

V   Analysis

Table 1, below, sets out the estimated coefficients associated with three separate regression models: Western Australian males; Western Australian females; and Australian females.   The results suggest the following.   Additional education is associated with additional earnings. Males completing a certificate qualification, for example, earn 13.5 per cent more than their unqualified counterparts.[8] Relative to females not completing high school, certificate qualifications raise the earnings of WA females by 6.9 per cent and Australian females by 11.5 per cent. An additional year of labour force experience raises WA male earnings by 2.75 per cent (evaluated after 10 years in the labour market); WA female earnings by 2.63 per cent; and Australian female earnings by 2.21 per cent. Working overtime is a significant determinant of earnings. WA males working overtime (defined as 41 or more hours per week) earn about 17.8 per cent more than their male counterparts not working overtime.   The extra earnings advantage associated with overtime work for WA females and Australian females is equal to 5.8 and 10.2 per cent, respectively. Migrants in WA appear to perform equally as well as their Australian born counterparts. At the national level, females born overseas have an earnings disadvantage of 6.2 per cent. Marital status is not a significant determinant of female earnings, but it is of males. For WA men marriage is associated with a 10 per cent earnings advantage relative to those who have never married. By way of contrast, the presence of dependant children does not affect male earnings, but it does adversely impact on female earnings. Females in WA earn about 9 per cent less than women without dependant children. At the national level the earnings disadvantage associated with children is equal to 7 per cent.

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[8]   In semi-logarithmic equations the coefficients of dummy variables which are small in value may be interpreted as the percentage effects on the dependent variable, relative to the omitted category (Halvorsen and Palmquist, 1980).

The results also show that even after controlling for differences in human capital endowments, structural factors such as sector of employment, geographic location, industry and occupation of employment also impact on earnings. Employment in the public sector is associated with higher earnings for all groups examined here. Residing in a metropolitan location raises the relative earnings of females, but not males. Industries paying relatively[9] high weekly wages include Mining and Finance and Insurance. The relatively low paying industries are Retail Trade, Education, Health and Community Services and Agriculture. The relatively[10] high paying occupational groups are Managers and Professionals. Males who are in managerial or professional occupations earn relatively more than Advanced Clerical Workers, while Labours and Related Workers earn significantly less. The same pattern is apparent for females too, although Tradespersons, Intermediate Clerical and Sales Workers, Production and Elementary Sales and Service Workers also earn significantly less than Advanced Clerical Workers.

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[9]   The 'relative' comparison group is Wholesale Trade.
[10]   The 'relative' comparison group is Advance Clerical and Service Workers.

Table 1: *Determinants of Earnings, WA males and females and Australian females, 1996.*[a]

	WA Males		WA Females		Australian Females	
	coeff.	mean	coeff.	mean	coeff.	mean
Constant	5.825 **		5.766 **		5.791 **	
Human Capital & Demographic						
hschool	0.052 **	0.290	0.068 **	0.358	0.061 **	0.375
cert	0.135 **	0.319	0.069 **	0.147	0.115 **	0.142
diploma	0.071	0.037	0.181 **	0.068	0.197 **	0.066
degree	0.318 **	0.166	0.287 **	0.217	0.322 **	0.238
exp	0.037 **	19.965	0.043 **	18.159	0.033 **	17.757
$exp^2/100$	-0.067 **	5.315	-0.085 **	4.623	-0.066 **	4.496
otime	0.178 **	0.521	0.058 **	0.308	0.102 **	0.315
esb	-0.026	0.204	-0.022	0.186	0.018	0.099
nesb	-0.042	0.122	-0.059	0.113	-0.062 **	0.144
married	0.101 **	0.584	-0.019	0.464	0.002	0.475
wsd	0.065 **	0.096	-0.044	0.174	0.017	0.147
child	0.025	0.345	-0.086 **	0.206	-0.069 **	0.222
Sector and Location						
govt	0.075 **	0.184	0.074 **	0.262	0.091 **	0.253
metro	-0.012	0.729	0.070 **	0.786	0.088 **	0.724
Industry						
affh	-0.443 **	0.034	-0.477 **	0.021	-0.378 **	0.017
mining	0.407 **	0.065	0.286 **	0.024	0.247 **	0.005
manufact	-0.043	0.179	0.078	0.064	-0.008	0.108
elecgw	0.071	0.018	-0.011	0.002	0.078 **	0.004
constrn	0.017	0.108	0.116	0.017	-0.048	0.013
rt	-0.165 **	0.100	-0.110 **	0.116	-0.125 **	0.109
rest	-0.190 **	0.024	-0.072	0.054	-0.135 **	0.039
transtre	0.046	0.060	-0.029	0.027	0.041 **	0.030
communic	0.033	0.023	0.039	0.015	0.078 **	0.019
fin	0.136 **	0.029	0.085	0.071	0.093 **	0.072
pbs	0.030	0.096	0.018	0.117	0.022	0.121
pad	-0.078	0.045	0.059	0.051	0.017	0.060
ed	-0.152 **	0.056	-0.174 **	0.126	-0.147 **	0.119
hellwel	-0.118 **	0.039	-0.146 **	0.177	-0.121 **	0.164
ent	-0.024	0.013	0.003	0.022	-0.033	0.024
pos	-0.134 **	0.029	-0.071	0.042	-0.112 **	0.040
Occupation						
mgr	0.214 **	0.147	0.144 **	0.077	0.225 **	0.078
prof	0.203 **	0.120	0.176 **	0.216	0.168 **	0.244
aspro	0.084	0.138	-0.012	0.146	0.034 **	0.129
trade	-0.038	0.230	-0.220 **	0.033	-0.216 **	0.031
icssw	0.023	0.097	-0.142 **	0.262	-0.086 **	0.254
iptw	-0.043	0.143	-0.150	0.024	-0.204 **	0.033
ecssw	-0.081	0.028	-0.164 **	0.078	-0.121 **	0.073
lrw	-0.148 **	0.087	-0.257 **	0.066	-0.206 **	0.062
Mean ln Y		6.495		6.234		6.267
Adj R^2	0.434		0.410		0.393	
n		2592		1320		14059

Notes: (a) See the appendix for a definition/explanation of the variables and reference categories; (b) the models are estimated using Ordinary Least Squares (OLS). In all of the above models heteroskedasticity has been corrected for using White's (1980) technique; (c) ** indicates significance at the 0.05 per cent level.

Using the information provided in Table 1 we examine why females in WA earn less than their State male counterparts. Is it because they are less qualified or have less experience? Table 2 presents the results using the Blinder/Oaxaca method previously discussed. The results show that there is a raw wage gap of 26.1 percentage points between WA males and females. Of this 26.1 percentage point gap, 2.2 percentage points could be attributed to the superior human capital endowments of males. A further 3.8 percentage points reflected the greater incidence of overtime work, and 4.2 percentage points was due to the more favourable industrial distribution of males as compared to females. As with other studies in this area (e.g. Chapman and Mulvey, 1985; Kidd, 1993; Preston, 1997) we find that the occupational structure of WA females helped to *reduce* the gender wage gap. Overall we found that 32.7 per cent (or 8.5 percentage points) of the gap could be explained by the different productivity characteristics of males and females in the State. After taking these factors into account the gap fell to 17.6 percentage points (column (iv)), translating to a female/male earnings ratio of 82.4 per cent (column (vi)).

Table 2: *Decomposing the WA Gender Wage Gap, 1996.*

	Raw Wage Gap	Explained Gap	(ii)/(i) %	Unexplained Gap	(iv)/(i) %	Adjusted Earnings Ratio
	(i)	*(ii)*	*(iii)*	*(iv)*	*(v)*	*(vi)*
Human Capital		0.022	8.3			
Demographic		0.010	*3.7*			
Overtime		0.038	*14.5*			
Metro		0.001	*0.3*			
Govt.		-0.006	*-2.3*			
Industry		0.042	*16.0*			
Occupation		-0.020	*-7.8*			
Total	0.261	0.085	*32.7*	0.176	*67.3*	**0.824**

Source: Regression results reported in Table 1

Using the Wellington technique previously described we examine why the gender wage gap in Western Australia has grown since 1991. From a human capital perspective the widening may reflect changes in the relative productivity endowments of males and females. If males, for example, have invested more in upgrading their skills and qualifications than females, then this would contribute towards a widening of the gap. Table 3 presents the results. The focus is on the Perth metropolitan area as ABS Census coding arrangements make it impossible to separately identify Western Australia in the 1991 Census HSF.

The results show that over the period 1991 to 1996 the gender wage gap in Perth increased by 1.1 percentage point.[11] The change may be entirely attributed to wage structure effects (see column (iii)). That is, it arises as a result of changes in the market valuation of male and female characteristics (with male characteristics being treated more favourably). Females have

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[11]   In 1991 the raw wage gap in Perth was equal to 22.4 per cent. By 1996 it was equal to 23.5 per cent. ABS statistics (cat. 6302) show that over the same period (August 1991 to August 1996) the WA gender wage gap fell from 82.5 to 78.2 per cent (a 4.3 percentage point decline). The 1.1 percentage point decline recorded using the Census data differs from ABS data for two reasons: firstly the focus is on Perth, not Western Australia. Secondly, the WA earnings data include earnings from all sources, and the data are grouped. What the 1.1 percentage point decline does show is that the trend observed in ABS catalogue 6302 is also borne out in the Census data (even though the magnitude in the latter is much smaller).

improved their relative human capital endowments and in the absence of any other change this would have caused the gender wage gap to narrow by one percentage point. The results here are thus consistent with those uncovered elsewhere. Blau and Kahn (1994), for example, show that in the US women have upgraded their human capital skills, but adverse trends in the wage structure there have also caused the gender wage gap to widen.

Table 3: *The Gender Wage Gap, 1991 to 1996, Perth, Western Australia.*

	1991 to 1996 Gap to be explained	Change due characteristics	Change due coefficients (market valuation)
	(i)	*(ii)*	*(iii)*
Human capital		-0.010	-0.006
Demographics		-0.003	0.056
Overtime		0.012	0.033
Sector		-0.004	0.020
Industry		0.009	0.029
Occupation		-0.005	-0.026
Constants			-0.093
TOTAL	0.011	-0.001	0.012

Source: 1991 and 1996 Census Data.

The above results are, therefore, consistent with the proposition that institutions matter in the determination of female pay.[12] The weakening of the institutional arrangements for pay determination in Western Australia has been accompanied by a growth in the gender wage gap which cannot be accounted for by changes in the productivity characteristics of males and females.

Measuring Gender Wage Discrimination in Western Australia

To lend further support to our argument above (namely, that the adverse shifts in the gender pay gap are the product of institutional rather than human capital forces) we utilise a methodology previously employed by Gregory and Daly (1990).

Gregory and Daly focus on the gap in the relative earnings of males and females in the US and Australia. In 1981 the gap was equal to 37 per cent in the US and 23 per cent in Australia; a 14 percentage point differential. Why the difference? The characteristics of the workforce in the two countries were similar, leading Gregory and Daly to hypothesise that the differentials were institutional. To examine this hypothesis they estimated male and female wage equations for the US and Australia and then asked the question: what would the gender wage gap be in the US if males and females in that country were paid according to the Australian wage structure? Substitution of the Australian coefficients for the US coefficients revealed that the gender wage gap in the US would fall 13 percentage points (from 37 per cent to 24 per cent), almost entirely eliminating the US/Australia observed differential. The results thus confirmed their hypothesis that the gap was the product of different institutional environments for pay determination.

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[12]   Additional support for this conclusion may be found in Reiman (1998). Reiman examines the gender wage gap using data from the 1995 Australian Workplace Industrial Relations Survey (AWIRS95). He finds that the gender wage gap in the 'bargaining stream' is larger than that of the 'non-bargaining stream'.

Using a similar procedure we ask the question: what would the gender wage gap be in Western Australia if females in that state were to be paid according to the national female wage structure? In other words, rather than allowing Western Australia to value characteristics such as overtime work differently,[13] we impose the national rates. Having done that we recalculate the gender wage gap in Western Australia. The difference between this hypothetical gap (using the national pay structure) and the observed wage gap (when the actual WA pay structure is employed) gives us a measure of the extent to which females in Western Australia are disadvantaged by prevailing institutional arrangements for pay determination.[14] Table 4 presents the results.

Table 4: *Hypothetical and Actual Gender Wage Gap, WA, 1996.*

	Raw Wage Gap	Explained Gap	(ii)/(i) %	Unexplained Gap	(iv)/(i) %	Adjusted Earnings Ratio
	(i)	*(ii)*	*(iii)*	*(iv)*	*(v)*	*(vi)*
Actual	0.261	0.085	*32.7*	0.176	*67.3*	0.824
Hypothetical	0.191	0.046	*24.1*	0.145	*75.9*	0.855

Notes: The first row is taken from Table 2. The second row is calculated after the female coefficients have been switched.

The results show that the adoption of the national female wage structure in Western Australia would deliver an adjusted earnings gap of 14.5 percentage points (column (iv)); **3.1 percentage points lower** than the actual WA gender wage gap. Put into perspective, this shows that females in Western Australia earn around $20.5 per week less than their counterparts nationally simply because of their geographic location.[15]

VI   Summary and Conclusion

Since 1991 governments throughout Australia have pursued labour market deregulation in an effort to increase labour market flexibility and, in turn, workplace productivity and competitiveness. Further deregulatory reforms are currently before the Federal Parliament in the form of the *Workplace Relations Legislation Amendment (More Jobs, Better Pay) Bill 1999.* Thus far the various state and federal industrial reforms have had no significant impact on national female/male relative pay outcomes. However, the evidence from Western Australia shows that where radical industrial relations reform has been pursued there has been a significant widening of the gender pay gap. One might, therefore, infer from this research that, nationally, the worse may be still to come - particularly if the Bill before parliament is passed in its current form.

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[13]   Table 1 shows that the rate of return associated with overtime work is equal to 5.8 per cent for WA females and 10.2 per cent for females nationally.

[14]   We noted earlier that the unadjusted wage gap may be decomposed into an explained and an unexplained component. The later may be taken as an indicator of the extent of discrimination and/or data deficiencies (e.g. poor measures of experience). However, in comparing the Western Australian female wage structure with the national female wage structure we overcome the 'data deficiency' problem since there is no reason to believe that the degree of bias imparted into the female coefficients differs between these two groups. The implication of this is that the residual thus measures **discrimination** and not also data deficiencies.

[15]   The calculation is based on full-time female (national) ordinary time earnings at November 1998, equal to $661.50 per week. ($661.50 x 0.031 = $20.5)

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APPENDIX
DEFINITION OF VARIABLES

Dependent Variable
ln Y=natural logarithm of weekly earnings (where earnings are earnings from all sources).

Independent Variables
cert=completed certificate.
child=1 if person has dependant children.
degree=completed a degree.
diploma=completed diploma
esb=migrants born in an English speaking country.
exp= potential labour market experience.
govt=1 for persons employed in the government sector.
hschool=highest level of education attained was Year 12.
married=1 for married individuals.
metro=1 if the person resides in a major urban or migratory area.
nesb=migrants born in a non-English speaking country.
otime=works 41 or more hours per week.
wsd=1 for individuals who were either widowed, separated or divorced at the time of the Census.

Industry, 1 digit (ANZSIC)
affh=Agriculture, Forestry and Fishing.
mining=Mining
manufact=Manufacturing*t*
elecgw=Electricity, Gas and Water.
constrn=Construction.
wt=Wholesale Trade (reference group)
rt=Retail Trade.
transtre=Transport and Storage.
communic=Communication Services.
fin=Finance and Insurance
pbs=Property and Business Services.
pad=Public Administration and Defence.
ed=Education.
hellwel=Health and Welfare
ent=Entertainment and Recreation Services.
pos=Personal and Other Community Services.

Occupation, 1 digit (ASCO 2nd)
mgr=Managers and Administrators.
prof=Professionals
aspro=Associate Professionals.
trade=Tradespersons.
acsw= Advanced Clerical and Service Workers (reference group)
icssw=Intermediate Clerical, Sales and Service Workers
iptw=Intermediate Plant Operators
lrw=Labourers and Related Workers.