Monograph:
Brown, S., Roberts, J. and Taylor, K. (2010) The gender reservation wage gap: evidence from British panel data. Working Paper. Department of Economics, University of Sheffield ISSN 1749-8368

Sheffield Economic Research Paper Series 2010010

Sheffield Economic Research Paper Series

SERP Number: 2010010

ISSN 1749-8368

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THE GENDER RESERVATION WAGE GAP: EVIDENCE FROM BRITISH PANEL DATA

May 2010

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Abstract:

Our findings suggest the existence of a gender reservation wage gap, with a differential of around 10%. The presence of children, particularly pre-school age children, plays an important role in explaining this differential. For individuals without children, the explained component of the differential is only 5%, which might indicate that perceived discrimination in the labour market influences the reservation wage setting of females.

Key words: Reservation Wages; Wage Decomposition

JEL: J13; J24; J64

Acknowledgments:
We are grateful to the ESRC for financial support under grant number RES-000-22-2004 and to the Data Archive, University of Essex, for supplying the British Household Panel Surveys, 1991 to 2007s. We are especially grateful to Gurleen Popli and Christine Valente for excellent comment

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I. Introduction and Background

A vast empirical literature exists exploring the gender wage gap with many studies employing the counterfactual decomposition approach of Oaxaca (1973), which splits the wage differential into an explained component and an unexplained component, with the unexplained component frequently interpreted as discrimination. One unexplored area concerns the potential gender reservation wage differential, which may lead to differences in labour market participation rates between men and women. The reservation wage, the lowest wage at which an individual is willing to work, plays a key role in theoretical models of job search, labour supply and labour market participation (see, e.g., Blackaby et al. 2007). An extensive empirical literature has explored reservation wage setting at the individual level, supporting a positive relationship between reservation wages and the duration of unemployment, with a seminal contribution by Lancaster and Chesher (1983). There is a dearth of studies, however, which have explored the potential gender differences in reservation wage setting. Such analysis may highlight the extent to which men and women harbour different aspirations about labour market wages prior to entry into the labour market, which may reflect perceived wage discrimination in the labour market or different opportunity costs of labour market entry.

II. Data and Methodology

We use individual level data from the British Household Panel Survey (*BHPS*), a nationally representative random sample survey of each adult member from more than 5,000 private households (www.iser.essex.ac.uk/survey/bhps). The analysis is based on an unbalanced panel of data from 1991 to 2007, comprising 12,298 observations, with 55% of the sample being female. The *BHPS* contains detailed information on reservation wages at the individual level in each wave: if the respondent '*is not currently working but has looked for work or has not looked for work in last four weeks but would like a job*', he/she is asked: '*What is the lowest weekly take home pay you would consider accepting for a job?*' Individuals who answer this question are then asked: '*About how many hours in a week would you expect to have to work for that pay?*' This enables us to construct the hourly reservation wage which has a mean (standard deviation) of £3.89 (£1.45) for

males and £3.56 (£1.42) for females in 1991 prices. Figure 1 shows the evolution of the reservation wage over time by gender where there is clearly a differential over the period, with women having lower reservation wages.

The sample comprises those individuals (aged 16-65) not in employment or self-employment. Out of the sample of individuals who are currently not working and who state that they have looked for work or have not looked for work in the last four weeks but would like a job, 59% are typically classified as 'economically inactive'.[1] Individuals are included in the sample if they report a reservation wage, since in so doing they are arguably signaling their attachment to the labour market. Such an approach accords with recent contributions, which recognise that the distinction between unemployment and inactivity may not necessarily be as clear-cut as previously assumed (e.g. Blackaby et al., 2007; Brown et al., 2010).

The reservation wage gap is decomposed as:

$$\left(\ln \overline{r}_m - \ln \overline{r}_f\right) = \hat{\beta}_* \left(\overline{x}_m - \overline{x}_f\right) + \left[\overline{x}_m \left(\hat{\beta}_m - \hat{\beta}_*\right) - \overline{x}_f \left(\hat{\beta}_f - \hat{\beta}_*\right)\right] \qquad (1)$$

where r is the real hourly reservation wage, m and f refer to males and females respectively, x is a row vector of observed characteristics, $\hat{\beta}$ is a vector of estimated parameters and a bar denotes a mean value. The term $\hat{\beta}_* = \Omega\hat{\beta}_m + (1-\Omega)\hat{\beta}_f$ represents an estimate of the non discriminatory reservation wage based upon the Oaxaca-Ransom (1994) weighting matrix: $\Omega = \left(x_m^{'} x_m + x_f^{'} x_f\right)^{-1} x_m^{'} x_m$. The first term on the right-hand side of equation (1) represents the difference in the reservation wage that is attributable to individuals' characteristics (explained or endowment component), which typically capture productivity effects, and the second term is that part of the reservation wage differential due to differences in returns to endowments (unexplained or discriminatory component). The empirical analysis is based upon the differential being adjusted for sample selection into labour market status.[2]

[1] The 'economically inactive' group includes: individuals involved in family care; full time students; the long term sick or disabled; and individuals involved in government training.
[2] The interpretation of the results which follows is independent of controlling for such selection.

The control variables in x are: the number of children in the household; number of employees in the household; age; marital status; highest educational attainment; whether in good/excellent health; the regional unemployment rate; ethnicity; duration in days of current labour market spell; household labour income; income from financial assets; benefit income; pay in previous employment; and monthly housing costs from mortgage or rent. We also condition upon binary indicators for industry, occupation of previous/last employment and firm size in previous/last job.[3] Five different samples are explored in order to investigate the effect of children on the gender reservation wage gap: all individuals; individuals without children; individuals with children; individuals with pre-school children (aged 0 to 4 years); and individuals without pre-school children.

III. Results

The findings in Table 1 indicate that there is a positive and statistically significant gender reservation wage gap, although this is biased downwards if selection is unaccounted for. In the sample of all individuals, 83% of the differential remains unexplained, with the number of children accounting for the largest proportion of the explained component at 47%. Given the importance of children in explaining the differential, we split the sample according to whether or not they have children. For those without children, the unexplained component rises to 95%, with the explained component being statistically insignificant, suggesting that perceived discrimination or the costs of labour market entry for those with children may have a large effect here. In contrast, for the sample with children, the unexplained component falls dramatically to 54%, with pay in previous job playing the largest role, accounting for 46% of the explained component. Splitting the sample by whether the respondent has pre-school children, reported in Table 2, the unexplained component falls to 37% where household labour income and pay in previous/last employment have the largest effects on the explained part of the differential at around 17% and 18%, respectively. Given the

[3] Oaxaca and Ransom (1999) show that the decomposition analysis is dependent on the choice of reference category, when conditioning on binary independent variables. Consequently, our analysis is based on methods to transform the coefficients so that the decomposition results are invariant to choice of omitted category (deviation contrast transformation).

explained component is 63% of the differential, it is apparent that the role of pre-school children is particularly important. This is consistent with the hypothesis put forward by Becker (1985) that women, particularly those with dependent children, have greater domestic commitments and this diminishes the 'energy' available for work tasks (relative to males) culminating in lower wages. Indeed, the empirical evidence suggests that there is a 'family gap' in pay in Great Britain and the U.S. between those females with and without children (e.g. Anderson et al., 2002; Joshi et al., 1999).

IV. Conclusion

The analysis suggests the existence of a gender reservation wage gap, at around 10%. Moreover, the presence of children, particularly dependent children, plays an important role in explaining this differential. For individuals without children, the explained component of the reservation wage differential is only 5%, which might indicate that perceived discrimination in the labour market influences the reservation wage setting of females. This highlights an important area for future research exploring the labour market aspirations of women.

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FIGURE 1: Hourly Reservation Wage by Gender

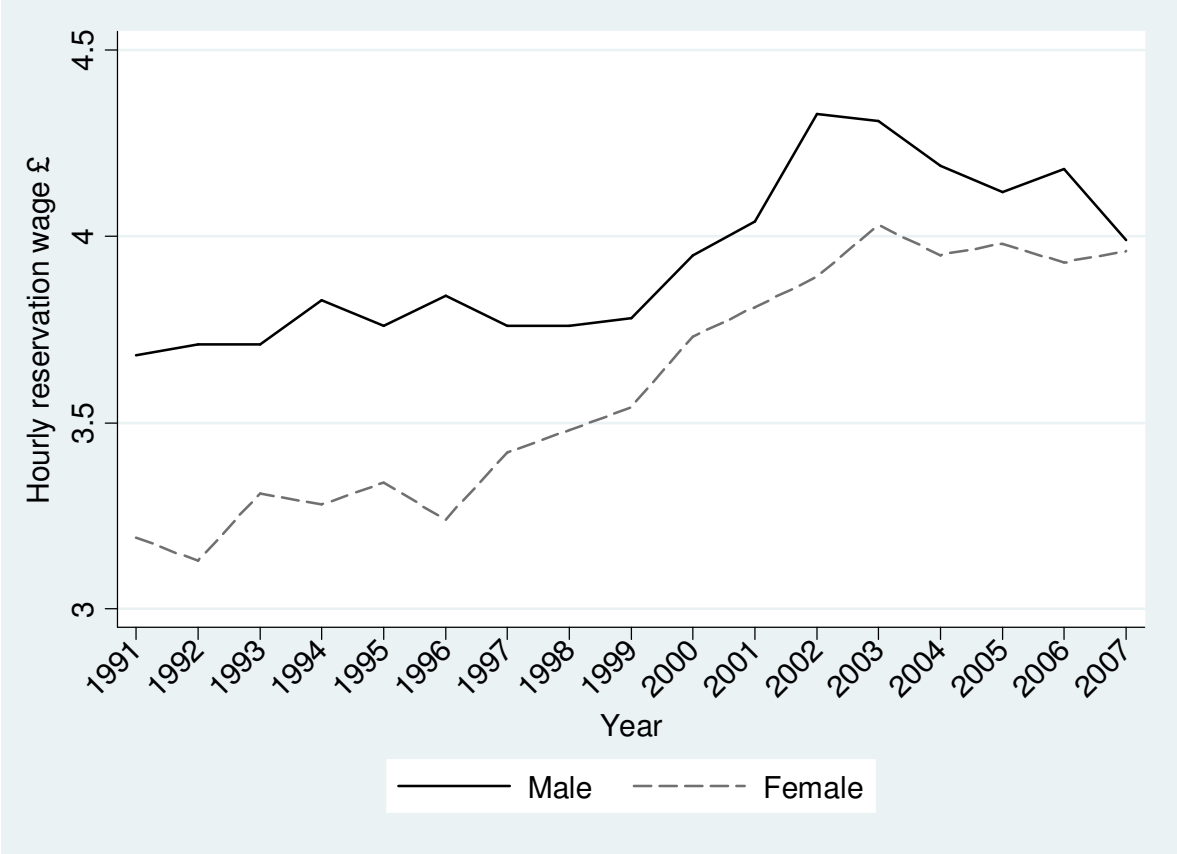

TABLE 1: RESERVATION WAGE GENDER DECOMPOSITION: ALL INDIVIDUALS AND BY CHILD STATUS

SAMPLE: ALL INDIVIDUALS n=12,298; n_{male}=5,509; n_{female}=6,789			**SAMPLE: INDIVIDUALS WITH NO CHILDREN** n=6,416; n_{male}=3,590; n_{female}=2,826			**SAMPLE: INDIVIDUALS ≥1 CHILD** n=5,882; n_{male}=1,919; n_{female}=3,963		
	COEF	*T STAT*		COEF	*T STAT*		COEF	*T STAT*
Male-Female raw differential	0.093	*10.750*	Male-Female raw differential	0.092	*8.140*	Male-Female raw differential	0.111	*8.560*
Male-Female sel. differential	0.114	*12.610*	Male-Female sel. differential	0.124	*10.180*	Male-Female sel. differential	0.123	*9.190*
Explained (17%)	0.019	*3.640*	Explained (5%)	0.006	*0.900*	Explained (46%)	0.056	*5.760*
Unexplained (83%)	0.095	*13.210*	Unexplained (95%)	0.118	*11.350*	Unexplained (54%)	0.067	*7.410*
Explained	%	*p value*	Explained	%	*p value*	Explained	%	*p value*
Number of children	-47.335	*0.000*	–			–		
Number employed in household	0.464	*0.715*	Number employed in household	4.647	*0.433*	Number employed in household	1.421	*0.287*
Age	-24.637	*0.000**	Age	-185.370	*0.002**	Age	7.005	*0.000**
Marital status	-9.170	*0.024**	Marital status	-30.265	*0.002**	Marital status	6.851	*0.011**
Education	30.489	*0.001**	Education	132.732	*0.032**	Education	-5.258	*0.015**
Health	4.918	*0.189**	Health	-0.902	*0.247**	Health	2.371	*0.463**
Regional unemployment rate	-10.683	*0.030*	Regional unemployment rate	-39.407	*0.097*	Regional unemployment rate	-3.754	*0.111*
Ethnicity	9.377	*0.018*	Ethnicity	7.447	*0.455*	Ethnicity	6.837	*0.021*
Duration of labour market state	20.795	*0.050*	Duration of labour market state	8.889	*0.854*	Duration of labour market state	10.490	*0.130*
Log household labour income	11.233	*0.011*	Log household labour income	9.876	*0.306*	Log household labour income	9.211	*0.005*
Log financial assets	0.051	*0.984*	Log financial assets	-13.645	*0.261*	Log financial assets	-6.626	*0.012*
Log benefit income	0.025	*0.892*	Log benefit income	-7.202	*0.656*	Log benefit income	7.973	*0.068*
Log pay in previous/last job	36.934	*0.000*	Log pay in previous/last job	56.480	*0.002*	Log pay in previous/last job	17.661	*0.000*
Log housing cost	-8.425	*0.005*	Log housing cost	6.263	*0.559*	Log housing cost	-1.816	*0.154*
Industry previous/last job		*0.000**	Industry previous/last job		*0.059**	Industry previous/last job		*0.492**
Occupation previous/last job		*0.012**	Occupation previous/last job		*0.000**	Occupation previous/last job		*0.000**
Firm size previous/last job		*0.390**	Firm size previous/last job		*0.707**	Firm size previous/last job		*0.822**

Notes: p values denoted with an asterisk are based upon a joint test of parameters; signifies the inclusion of controls.

TABLE 2: RESERVATION WAGE GENDER DECOMPOSITION: PRE-SCHOOL CHILDREN

SAMPLE: INDIVIDUAL ≥1 CHILD AGED 0-4 n=2,594; n_{male}=778; n_{female}=1,816			**SAMPLE: INDIVIDUALS NO CHILDREN AGED 0-4 ≥1 DEPENDENT CHILD AGED 5+** n=3,288; n_{male}=1,141; n_{female}=2,147		
	COEF	*T STAT*		COEF	*T STAT*
Male-Female raw differential	0.121	*6.990*	Male-Female raw differential	0.103	*6.230*
Male-Female sel. differential	0.134	*7.320*	Male-Female sel. Differential	0.112	*6.570*
Explained (63%)	0.085	*5.990*	Explained (28%)	0.031	*2.490*
Unexplained (37%)	0.049	*4.180*	Unexplained (72%)	0.081	*6.740*
Explained	%	*p value*	Explained	%	*p value*
Number employed in household	10.515	*0.042*	Number employed in household	-3.383	*0.512*
Age	10.346	*0.116**	Age	-34.305	*0.000**
Marital status	11.144	*0.004**	Marital status	-0.302	*0.946**
Education	-11.185	*0.032**	Education	3.655	*0.298**
Health	3.004	*0.515**	Health	3.098	*0.765**
Regional unemployment rate	-4.019	*0.090*	Regional unemployment rate	-4.040	*0.476*
Ethnicity	3.136	*0.263*	Ethnicity	15.912	*0.025*
Duration of labour market state	-1.270	*0.807*	Duration of labour market state	41.426	*0.033*
Log household labour income	17.388	*0.001*	Log household labour income	-3.383	*0.558*
Log financial assets	-15.340	*0.000*	Log financial assets	-2.873	*0.368*
Log benefit income	12.361	*0.037*	Log benefit income	6.576	*0.383*
Log pay in previous/last job	17.905	*0.001*	Log pay in previous/last job	22.831	*0.024*
Log housing cost	-3.519	*0.036*	Log housing cost	0.047	*0.984*
Industry previous/last job		*0.792**	Industry previous/last job		*0.659**
Occupation previous/last job		*0.010**	Occupation previous/last job		*0.002**
Firm size previous/last job		*0.768**	Firm size previous/last job		*0.830**

Notes: p values denoted with an asterisk are based upon a joint test of parameters; signifies the inclusion of controls.