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Wage differentials between the obese and non-obese in Great Britain: evidence from the 1991/2 Health and Lifestyle Survey

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I. Introduction

Recent evidence suggests that 17.3% of males and 21.2% of females in England are obese (Department of Health, 2000). Obesity, as well as being an important and debilitating condition in its own right, is also a prominent risk factor for a number of major diseases including coronary heart disease, non-insulin dependent diabetes mellitus, osteoarthritis and hypertension. Obesity also imposes a substantial economic burden on the health care system: health care costs attributable to obesity in the UK National Health Service (NHS) were recently estimated to total over £350 million (1995 UK£), accounting for approximately 1% of total NHS expenditure (Hughes et al., 2000). The cost of obesity to employers is also substantial. A recent study estimated the economic costs of obesity to businesses in the USA to total $12.7 billion (1994 US$), comprising business expenditures on health insurance, paid sick leave, life insurance and disability insurance totalling $7.7 billion, $2.4 billion, $1.8 billion, and $800 million, respectively (Thompson et al., 1998).

One might speculate then that obesity may impact on the labour market in a number of different ways. First, obese individuals may be less likely to participate in the labour market due to ill health arising directly from obesity and from its associated diseases. Second, obesity is correlated with increased morbidity and mortality and therefore participating obese workers may be less productive than non-obese workers. Third, due to ill health the obese may receive less schooling and have lower educational attainment than the non-obese. Fourth, it may be the case that obese individuals are discriminated against in the labour market, where discrimination may be broadly defined as "the valuation in the market place of personal characteristics of the worker that are unrelated to productivity." (Arrow, 1973). These factors suggest that the obese are less likely to be employed than the non-obese and that when they are employed the obese may be paid lower wages than their non-obese counterparts.

In this paper we concentrate on one aspect of the relationship between obesity and the labour market, namely the wage differential between obese and non-obese workers. We consider obese and non-obese pay determination using individual data. More specifically we examine whether obese and non-obese workers earn comparable wages when other factors are held constant. This involves the estimation of wage equations for the obese and non-obese with appropriate correction for selectivity bias and then the comparison of average pay that would be received by obese and non-obese workers if they were paid according to the same pay schedule. The theoretical background for wage determination is human capital theory, which predicts that individual pay differences are the outcome of labour productivity differences arising from differences in human capital accumulation (Becker, 1964; Mincer, 1974). To our knowledge this is the first study of obese-non-obese wage differentials.

II. The statistical model

Our aim is to estimate the obese-non-obese pay differential and to decompose the differential into differences due to endowments and differences due to unobserved factors, taking into account sample selection bias arising from non-participation in the labour market. The statistical model is based on the standard Mincerian earnings function (Mincer, 1974) of the form:

$$\ln W_o = X_o\beta_o + U_o \quad [1]$$

$$\ln W_n = X_n\beta_n + U_n \quad [2]$$

where W is wages, X is a matrix of individual productive characteristics and other exogenous socio-economic variables affecting wages, β is a vector of unknown parameters, U is a normally distributed error term with zero mean and constant variance and the subscripts distinguish obese (o) and non-obese (n) individuals. Males and females are treated separately. We recognise there may be selection bias in ordinary least squares (OLS) estimates of β since wages are observed only for workers. To correct for this problem we adopt the well-known two-step correction for selection bias proposed by Heckman (1979). The first step of the procedure is to estimate a probit model for participation in which the dependent variable captures the outcomes of the bivariate participate/not participate choice. The results of the participation probit are used to produce the selection variable λ (the inverse Mill's ratio) that is introduced into OLS estimates of Equations [1] and [2] to eliminate the potential selection bias.

Having estimated the earning function for the obese and non-obese we then decompose the observed pay differential into two components: one due to differences in endowments and the other due to differences in the returns to endowments. The usual method, proposed by Oaxaca (1973), is to compare the average pay that would be received by the obese and non-obese if they were paid according to the same pay structure. Since the OLS estimates pass through the sample mean, the difference in ln wages between the obese and non-obese may be expressed as:

$$\ln \bar{W}_o - \ln \bar{W}_n = (\beta_o - \beta_n)\bar{X}_o + (\bar{X}_o - \bar{X}_n)\beta_n \qquad [3]$$

The last term on the right hand side of equation [3] is the contribution to the difference in wages that can be explained by the mean differences in characteristics of obese and non-obese workers. This is referred to as the difference due to endowments, or the difference in variables. In equation [3] these characteristics are evaluated using the co-efficients of the non-obese. The first term provides a measure of the premium to being obese, that is, the actual mean wage of obese workers with mean characteristics and what they are predicted to earn if the characteristics are weighted by the returns of the non-obese. This is referred to as the premium, or the difference in parameters. Note that the decomposition may also be reversed to compute what a non-obese worker would earn if their characteristics were weighted with the returns of the obese.

We estimate four statistical models using the methods outlined above. First we estimate a simple OLS wage equation with obese-non-obese included as a dummy variable. Second, we estimate the same wage equation with an adjustment for sample selection bias using the Heckman two-step procedure. Third, to allow for differences in slope co-efficients we estimate an OLS wage equation separately for the obese and non-obese. Finally we estimate separately wage equations for the obese and non-obese with an adjustment for sample selection bias. We apply the decomposition analysis to the last two models.

III. The Data

The data used in this paper were obtained from the 1991/2 Health and Lifestyle Survey (HALS). This survey was funded by the Health Promotion Research Trust and conducted by the Department of Community Medicine at the University of Cambridge. HALS was designed primarily to describe the self-reported health, attitudes to health, and beliefs about causes of disease in relation to measurements of health and lifestyle in adults of all ages and circumstances living in all parts of Great Britain. In addition to recording self-reported health, measured health, cognitive function, psychological well being, and lifestyle habits (e.g. diet, smoking, alcohol consumption, exercise and leisure activities), the survey also collected information on social, demographic and labour market status including labour force participation, wages, educational attainment and work experience. The original source file contains observations on 5,352 males and females aged 25 years and over living in England, Scotland and Wales. Observations that did not have a valid obesity coding were excluded, as were observations for individuals aged greater than 60 years. The final sample consisted of 2,010 males and females aged 25 to 60 years. The main variables of interest are obesity coding and wages. Body mass index (BMI), measured as weight (in kilogrammes, kg) divided by height (in metres squared, m^2), was used as the measure of obesity. Obesity in HALS was defined as BMI greater than or equal to 30 kg/m^2 for males and BMI greater than or equal to 28.6 kg/m^2 for females. These thresholds were recommended to HALS by the Royal College of Physicians. 11.1% of males and 19.0% of females in the final sample met the definition for obesity. In 1992 it was estimated from a sample of 12,387 individuals aged 16 to 64 years living in England that the prevalence of obesity (defined as BMI greater than or equal to 30 kg/m^2) was 13.1% for males and 15.7% for females (Department of Health, 1998). These prevalence rates are slightly different from those in our sample, though the different age range considered and the different definition of obesity may explain this. In our model the wage used was the natural logarithm of the hourly wage measured in 1992 UK£. Hourly wage was computed as usual weekly after-tax income divided by usual weekly hours of work.

IV. Summary statistics and results of the statistical models

Mean values for the variables used in the analysis are presented in Table 1. Obese workers (both male and female) earn on average approximately 4% less than their non-obese counterparts. Independent variables included in the wage equations are educational attainment variables (ALEVEL, DEGREE, DIPLOMA, GCSE), work experience variables (EXP, EXP2) industry variables (CONSTRUC, CORE, PRODUCT), regional variables (SEAST) and job characteristic variables (HOURS, SHIFT). Of note is that the obese are on average less well educated than the non-obese: 11.8% of obese males and 5.2% of obese females are qualified to degree level compared with 23.6% of non-obese males and 12.8% of non-obese females. The obese are also less likely to participate in the labour market than the non-obese: 79.1% of obese males and 66.2% of obese females participate compared with 88.7% of non-obese males and 74.6% of non-obese females. Independent variables included in the participations equations are age variables (AGE, AGE2), family variables (MARRIED, CHILD04, CHILD116, CHILD510), personal characteristic variables (ETHNIC, DISABLE) and personal finance variables (NONLABY, OWNHOME, PARTPART). Note that a greater proportion of obese individuals in the sample are suffering from a longstanding illness, disability or infirmity: 32.4% of obese males and 34.1% of obese females compared with 30.3% of non-obese males and 23.7% of non-obese females.

Table 2 reports the results of the first statistical model. Separate OLS wage equations are estimated for males and females, but in both regressions data for the obese and non-obese are pooled and an OBESE dummy variable is included to estimate the wage premium at the overall sample mean. For both males and females the co-efficient on OBESE was statistically insignificant. Other co-efficients in Table 2 are consistent with the general Mincerian model. In particular, the co-efficient on EXP is positive and that on EXP2 is negative to reflect the concavity of the earnings-experience profile. Educational attainment, as a proxy for years of schooling, is also important and returns to educational attainments by type are of the expected order.

The second statistical model is reported in Table 3. The wage equation is the same as in the first model with the addition of a selection bias correction term, λ, estimated from the participation equation. The co-efficients in the participation equation reveal patterns similar to those in the literature. The co-efficients for females are generally significant and of the expected sign. The importance of the family variables (CHILD04, CHILD116 and CHILD510), personal characteristic variables (DISABLE) and personal finance variables (NONLABY, OWNHOME, PARTPART) on labour market participation is clear. Selectivity-corrected co-efficients in the wage equation are similar in significance, sign, and magnitude to those in the first model. The co-efficient on OBESE is insignificant for both males and females, and co-efficients on the work experience variables and educational attainment variables are significant (for males) and of the correct sign. The selection variable (λ) is significant and negative for both males and females. One interpretation of this result is that earnings for males and females in the sample who are working are likely to be lower than those for non-workers if they worked. However, it has been argued that the interpretation of the sign on the selection variable is ambiguous (Dolton and Makepeace, 1987).

Results from the third statistical model are presented in Table 4. OLS wage equations are reported separately for obese and non-obese males and females. For males, the signs and statistical significance of co-efficients are similar to those of the pooled regressions of the first model with a few differences, notably the industry variables (CONSTRUC, CORE).

Participation equations and selectivity-corrected wage equations estimated separately for obese and non-obese males and females (the fourth statistical model) are reported in Table 5. In qualitative terms the structure of the participation equations is broadly similar to the pooled regressions reported in Table 3, especially for females. The family variables (CHILD04, CHILD116 and CHILD510), personal characteristic variables (DISABLE) and personal finance variables (NONLABY, OWNHOME, PARTPART) remain important independent variables for labour market participation. The selectivity-corrected wage equations are also similar to previous estimates, though there are some differences that emerge from estimating the obese and non-obese selectivity-corrected wage equations separately. First, the returns to education are different for the obese and non-obese. Obtaining a degree has a substantial significant impact on earnings for obese and non-obese males and females. However, obtaining a diploma, A levels, or GCSEs is less important for obese males, and obtaining A levels is insignificant also for obese females. For the non-obese these variables are significant. Second, as in the third statistical model, the industry variables become more important when examining obese and non-obese workers separately. For male workers in the pooled regressions working in the core materials and construction industries was insignificantly related to earnings. For obese males in the fourth model the co-efficient on working in the construction industry is now significant and the co-efficient on working in the core materials industry is now significant and positively related to earnings. Third, the separate regressions shown in Table 5 demonstrate that the concavity of the earnings-experience profile is confined to non-obese males and obese females. For obese males and non-obese females co-efficients on the work experience variables are of the expected sign but are insignificant. Fourth, the selection variable, while negative for obese and non-obese males and females is smaller in magnitude and insignificant for the obese.

V. Results of the decomposition analysis

Results of the decomposition analysis are presented in Table 6. This reports the observed differences in earnings between the obese and non-obese. For males the total observed mean difference in ln hourly wages between obese and non-obese workers is –0.040. For female workers the mean difference is –0.041. This observed mean difference in ln hourly wages is decomposed using equation [3] into the difference in wages that can be explained by the mean differences in characteristics between obese and non-obese workers (the difference due to endowments), and the differences between the returns to those characteristics (the difference due to the parameters, or the premium).

For males and females for both OLS and selectivity-corrected estimates the differences in endowments is negative and greater than the observed mean difference in ln hourly wages, which is also negative. The differences in parameters on the other hand are positive but less than the differences in variables. These figures imply that while obese workers earn less than non-obese workers, this difference is due exclusively to differences in their characteristics. As noted above, the summary statistics reported in Table 1 show that non-obese workers have considerably more education than obese workers. It is this difference in educational attainment that accounts largely for the endowment component of the earnings differentials, and therefore which accounts for the lower earnings of the obese. There is no evidence of any wage premium to the non-obese. On the contrary, it seems that the average obese worker (male or female) would earn slightly less if paid according to the non-obese pay structure.

VI. Conclusions

In this paper we have analysed the determinants of wages for obese and non-obese workers in Great Britain using HALS data for 1991/2 taking into account sample selection bias arising from non-participation in the labour market. Our conclusions are as follows:

1. Obese workers are paid slightly less (approximately 4%) than non-obese workers;
2. This difference in mean earnings is explained by differences in characteristics between obese and non-obese workers, particularly educational attainment; and,

3. There is a small premium on returns to endowments for obese workers relative to non-obese workers.

The finding that obese workers are paid less than non-obese workers is consistent with a priori expectations. What is surprising perhaps is the small magnitude of the differential. Also consistent with initial expectations is the finding that the endowments of obese workers explain wage differentials between the obese and non-obese. We find no evidence of discrimination against the obese in terms of the returns to endowments. However, it is important to recognise that the results generated in this paper do not provide a complete picture of discrimination against the obese in the labour market. Typically discrimination is measured as the differences in parameters for specified groups of workers in the decomposition analysis. In our analysis there is a small premium to obese workers. This might lead us to conclude that there is positive discrimination in favour of obese workers. However, this provides an incomplete picture of discrimination against the obese in the labour market for two reasons. First, the reason why obese and non-obese workers exhibit different endowments may itself be due to discrimination against the obese. For example, our results show that the obese have lower educational attainment than the non-obese. This may reflect pre-labour market discrimination. Second, the obese may be discriminated against in terms of their ability to enter the labour market. For example, our results show that labour market participation rates are lower for the obese than the non-obese. This may also be due to discrimination against the obese. With the growing prevalence of obesity in Great Britain we recommend that further research be conducted to explore the extent of discrimination against the obese in obtaining labour market endowments and entering the labour market.

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	Sample means				
	Males		Females		
	Obese	Non-obese	Obese	Non-obese	Description
Wage variables [1]					
LNWAGE	1.667	1.707	1.362	1.403	Natural logarithm of hourly wage
ALEVEL	0.027	0.042	0.026	0.034	Highest qualification is A level or equivalent = 1, 0 otherwise
CONSTRUC	0.155	0.106	0.010	0.013	Works in the construction industry (SIC code 5) = 1, 0 otherwise
CORE	0.073	0.068	0.015	0.021	Works in the core materials industry (SIC code 0-1) = 1, 0 otherwise
DEGREE	0.118	0.236	0.052	0.128	Highest qualification is a degree or equivalent = 1, 0 otherwise
DIPLOMA	0.218	0.215	0.149	0.125	Highest qualification is a diploma or equivalent = 1, 0 otherwise
EXP	12.774	11.254	7.053	6.806	Years of experience in current job
EXP2	271.092	229.024	101.323	90.976	Years of experience in current job squared
GCSE	0.218	0.192	0.237	0.327	Highest qualification is GCSE or equivalent = 1, 0 otherwise
HOURS	46.818	45.724	30.351	29.062	Hours of work per week
PRODUCT	0.300	0.278	0.139	0.111	Works in the production industry (SIC code 2-4) = 1, 0 otherwise
SEAST	0.227	0.292	0.304	0.269	Lives in the South East = 1, 0 otherwise
SHIFT	0.145	0.176	0.139	0.108	Works in shifts = 1, 0 otherwise
Participation variables [2]					
PART	0.791	0.887	0.662	0.746	Worker = 1, 0 otherwise
AGE	44.698	42.841	44.536	42.539	Years of age
AGE2	2081.420	1931.100	2072.600	1895.280	Years of age squared
CHILD04	0.165	0.196	0.130	0.156	Number of children between 0 and 4 years old
CHILD116	0.403	0.336	0.454	0.415	Number of children between 11 and 16 years old
CHILD510	0.309	0.303	0.311	0.335	Number of children between 5 and 10 years old
DISABLE	0.324	0.303	0.341	0.237	Longstanding illness, disability or infirmity = 1, 0 otherwise
ETHNIC	0.014	0.022	0.041	0.022	Non-white ethnic group = 1, 0 otherwise
MARRIED	0.820	0.807	0.771	0.794	Married = 1, 0 otherwise
NONLABY	99.338	91.645	175.386	201.923	Non-labour income per week
OWNHOME	0.791	0.826	0.744	0.797	Own or buying home = 1, 0 otherwise

PARTPART	0.540	0.619	0.621	0.687	Partner works = 1, 0 otherwise
Total sample	139	992	293	1107	
Number of workers	110	880	194	826	

1 Sample means for workers only

2 Sample means for workers and non-workers

Table 1. Variable codes and sample means

	Males		Females	
	β	Std. Err.	β	Std. Err.
CONSTANT	1.953*	0.097	1.353*	0.057
OBESE	0.026	0.044	0.017	0.043
ALEVEL	0.190*	0.079	0.171#	0.090
CONSTRUC	0.056	0.039	0.044	0.156
CORE	-0.092	0.065	-0.163	0.149
DEGREE	0.459*	0.038	0.608*	0.056
DIPLOMA	0.177*	0.034	0.460*	0.054
EXP	0.016*	0.004	0.012#	0.007
EXP2	-0.0003*	0.0001	-0.0002	0.0003
GCSE	0.122*	0.037	0.182*	0.040
HOURS	-0.013*	0.002	-0.008*	0.002
PRODUCT	0.041	0.029	-0.001	0.049
SEAST	0.190*	0.027	0.122*	0.037
SHIFT	0.027	0.030	0.022	0.043
Adjusted R^2	0.270		0.147	

* Significant at the 5% level

Significant at the 10% level

Table 2. OLS estimates with OBESE dummy

	Males		Females	
	β	Std. Err.	β	Std. Err.
Participation equation				
CONSTANT	0.243	1.283	-2.359*	0.864
AGE	0.078	0.062	0.188*	0.042
AGE2	-0.001*	0.001	-0.003*	0.0005
CHILD04	-0.306*	0.139	-0.738*	0.101
CHILD116	-0.236$^{\#}$	0.121	-0.263*	0.062
CHILD510	0.168	0.155	-0.284*	0.064
DISABLE	-0.666*	0.133	-0.468*	0.088
ETHNIC	-0.172	0.401	-0.086	0.222
MARRIED	0.395*	0.174	-0.012	0.121
NONLABY	-0.006*	0.001	-0.003*	0.0005
OWNHOME	1.216*	0.147	0.421*	0.101
PARTPART	1.053*	0.155	0.895*	0.117
Log Likelihood	-230.250		-661.248	
Wage equation				
CONSTANT	2.043*	0.064	1.423*	0.058
OBESE	0.018	0.040	0.020	0.042
ALEVEL	0.178*	0.067	0.188*	0.094
CONSTRUC	0.068	0.043	0.046	0.145
CORE	-0.077	0.051	-0.172	0.118
DEGREE	0.438*	0.036	0.616*	0.057
DIPLOMA	0.150*	0.036	0.466*	0.054
EXP	0.013*	0.004	0.011$^{\#}$	0.007
EXP2	-0.0002$^{\#}$	0.0001	-0.0002	0.0002
GCSE	0.095*	0.036	0.182*	0.039
HOURS	-0.014*	0.001	-0.009*	0.001
PRODUCT	0.037	0.030	-0.002	0.052
SEAST	0.199*	0.028	0.130*	0.037
SHIFT	0.045	0.035	0.020	0.052
λ	-0.375*	0.051	-0.142*	0.065
Adjusted R^2	0.301		0.150	

* Significant at the 5% level
$^{\#}$ Significant at the 10% level

Table 3. Selectivity-corrected estimates with OBESE dummy

	Males				Females			
	Obese		Non-obese		Obese		Non-obese	
	β	Std. Err.	β	Std. Err.	β	Std. Err.	β	Std. Err.
CONSTANT	1.815*	0.253	1.961*	0.101	1.432*	0.115	1.337*	0.066
ALEVEL	0.399*	0.199	0.172*	0.083	0.298	0.188	0.163	0.100
CONSTRUC	0.348*	0.117	0.021	0.042	0.306	0.339	0.004	0.168
CORE	0.414#	0.224	-0.149*	0.065	-0.397	0.291	-0.129	0.164
DEGREE	0.568*	0.147	0.453*	0.040	0.720*	0.123	0.590*	0.062
DIPLOMA	0.118	0.098	0.188*	0.036	0.513*	0.113	0.441*	0.061
EXP	0.026#	0.014	0.016*	0.004	0.035*	0.015	0.007	0.007
EXP2	-0.0007	0.0004	-0.0003*	0.0001	-0.001#	0.0006	-0.00005	0.0003
GCSE	-0.021	0.091	0.134*	0.040	0.198*	0.098	0.178*	0.044
HOURS	-0.013*	0.005	-0.013*	0.002	-0.012*	0.003	-0.007*	0.002
PRODUCT	0.151	0.094	0.031	0.031	0.012	0.084	-0.001	0.059
SEAST	0.230*	0.089	0.187*	0.029	0.021	0.082	0.143*	0.041
SHIFT	0.138	0.110	0.014	0.031	-0.090	0.098	0.047	0.048
Adjusted R^2	0.194		0.282		0.161		0.140	

* Significant at the 5% level

Significant at the 10% level

Table 4. OLS estimates

	Males				Females			
	Obese		Non-obese		Obese		Non-obese	
	β	Std. Err.	β	Std. Err.	β	Std. Err.	β	Std. Err.
Participation equation								
CONSTANT	7.862	6.946	-0.253	1.354	-6.272*	2.206	-1.662#	0.960
AGE	-0.258	0.298	0.103*	0.066	0.363*	0.104	0.156*	0.047
AGE2	0.002	0.003	-0.002	0.001	-0.004*	0.001	-0.002*	0.001
CHILD04	-0.385	0.345	-0.303#	0.154	-0.615*	0.257	-0.743*	0.111
CHILD116	-0.110	0.309	-0.256#	0.135	-0.346*	0.139	-0.251*	0.070
CHILD510	0.354	0.400	0.119	0.168	-0.1288	0.1633	-0.307*	0.070
DISABLE	-0.856*	0.378	-0.656*	0.145	-0.728*	0.192	-0.378*	0.101
ETHNIC	- [1]	- [1]	- [1]	- [1]	0.032	0.416	0.0003	0.278
MARRIED	0.338	0.529	0.420*	0.188	0.217	0.267	-0.098	0.138
NONLABY	-0.006*	0.002	-0.006*	0.001	-0.003*	0.001	-0.003*	0.000
OWNHOME	1.515*	0.453	1.192*	0.160	0.331	0.202	0.421*	0.119
PARTPART	1.006*	0.475	1.059*	0.168	0.921*	0.248	0.928*	0.135
Log likelihood	-31.762		-194.508		-142.744		-510.340	
Wage equation								
CONSTANT	1.852*	0.211	2.048*	0.067	1.455*	0.121	1.431*	0.066
ALEVEL	0.384	0.251	0.164*	0.068	0.290	0.248	0.193#	0.102
CONSTRUC	0.336*	0.130	0.042	0.046	0.299	0.370	0.004	0.157
CORE	0.406*	0.170	-0.129*	0.054	-0.399	0.311	-0.141	0.128
DEGREE	0.566*	0.139	0.432*	0.037	0.725*	0.178	0.602*	0.061
DIPLOMA	0.100	0.112	0.162*	0.037	0.518*	0.113	0.447*	0.061
EXP	0.025#	0.014	0.013*	0.004	0.035*	0.014	0.005	0.007
EXP2	-0.001	0.0004	-0.0002#	0.0001	-0.001*	0.001	-0.0001	0.0003
GCSE	-0.026	0.108	0.107*	0.039	0.202*	0.093	0.176*	0.043
HOURS	-0.013*	0.004	-0.014*	0.001	-0.012*	0.003	-0.008*	0.002
PRODUCT	0.144	0.099	0.028	0.031	0.012	0.111	-0.003	0.059
SEAST	0.244*	0.099	0.192*	0.029	0.027	0.085	0.152*	0.041
SHIFT	0.159	0.125	0.030	0.036	-0.094	0.111	0.047	0.059
λ	-0.121	0.169	-0.383*	0.054	-0.047	0.126	-0.191*	0.077
Adjusted R^2	0.189		0.314		0.157		0.146	

* Significant at the 5% level

Significant at the 10% level

[1] ETHNIC predicts PART = 1 perfectly for the obese and so is omitted

Table 5. Selectivity-corrected estimates

	Males	Females
OLS estimates		
Endowment (=differences in variables)	-0.067	-0.053
Premium (=differences in parameters)	0.027	0.012
Total (= observed mean difference in LNWAGE)	-0.040	-0.041
Selectivity-corrected estimates		
Endowment (=differences in variables)	-0.079	-0.067
Premium (=differences in parameters)	0.039	0.026
Total (= observed mean difference in LNWAGE)	-0.040	-0.041

Table 6. Decomposition analysis: mean difference in ln hourly wages between the obese and non-obese