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Abstract: This paper carries out an analysis of wage discrimination on the basis of health on UK data with a number of important modifications. First we control for selection into health status. Second the direct effect of health upon productivity is accounted for and third, we examine discrimination with regard to participation as well as wages. The question of selection into health status is found to be of little empirical importance but taking account of the direct impact of health upon productivity leads to a fall in measured discrimination. The paper finds similar results with regard to participation. We also examine whether these effects differ across age and also test for the statistical significance of discrimination.

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1. Introduction.

There is much evidence to indicate that ill-health has a negative effect upon earnings, controlling for other factors. Studies including Bartel and Taubman (1979) and Chowdury and Nickell (1985) all indicate that ill-health may cause earnings to drop by as much as 25%. Ill-health can also have an effect on labour market participation. For example, Stern (1989, 1996) looks at the effect of disability upon labour market participation for men while Wolfe and Hall (1995) examine similar issues for single mothers.

The interaction between ill-health and wages and participation can be rationalised along the lines of ill-health directly affecting capacity for work[1]. Ill-health can also affect participation via a raising of the reservation wage and also through its effect upon unearned income via health-related transfers. These effects operate via the supply of labour. However, it is also possible that ill-health may affect labour market outcomes via the *demand* for labour. For example, those with poor health may receive lower wage offers, given the same initial human capital endowments, as those with good health.[2] This may be because a persons human capital is affected by poor health so that their current or future productivity is lowered or alternatively, there may be discrimination against the unhealthy or disabled. It is this latter factor which we are concerned with in this paper.

[1] See O'Donnell (1996) for a case where capacity to work is explicitly modelled.

Concern over discrimination against those with ill-health has been growing in recent years. For example, the concept of "social exclusion" has taken on increasing importance within the European Union. One dimension of social exclusion may be discrimination in the labour market. Concerns over discrimination presumably lie behind such legislation as the UK Disability Discrimination Act 1995 and the US Americans with Disabilities Act 1990.[3]

In this paper we attempt to measure discrimination against those with ill-health and in particular there are four features of our analysis which we feel are worthy of note. Firstly, we control for selection into health status. Secondly, we take account of the extent to which ill-health can directly affect work capacity. Thirdly, we examine discrimination at the hiring stage. Finally we examine whether these forms of discrimination are sensitive to age. A further feature of our analysis is that we calculate standard errors for that portion of the wage gap accounted for by discrimination and thus can indicate whether discrimination is statistically significant. We now discuss these features in turn.

The measurement of discrimination in the labour market has become widespread since the seminal contributions of Blinder (1973) and Oaxaca (1973) and has principally been used to measure discrimination on the basis of gender and ethnic background. It is no coincidence that discrimination studies have concentrated upon gender and ethnic background. Apart from the widely held view that such forms of discrimination are morally objectionable and worthy of study, the characteristic which forms the basis of

[2] In turn this may affect the reservation wage.
[3] For a recent discussion of the consequences of the Americans with Disabilities Act see Acemoglu and Angrist (1998). See Kidd et al (1998) for a recent analysis of labour market discrimination against disabled

discrimination can be regarded as truly exogenous i.e. people are randomly assigned as males/females or black/white. It is arguable that such discrimination is more unacceptable than discrimination on the basis of a characteristic which is open to some degree of choice. Health may be regarded as a characteristic which is endogenous, to some extent at least. While certain diseases and disabilities are exogenous, ill-health may also be a result of lifestyle choices. The unobservable factors affecting these choices are also likely to affect rewards in the labour market. This complicates the calculation of wage discrimination against the unhealthy. In particular the estimation of the wage equations which are typically used to calculate wage discrimination must take account of selection into a healthy or unhealthy state.

A further complication which arises in the measurement of discrimination in the context of health is that poor health may directly affect work capacity or productivity. Leaving aside the arguments of Weber (1930) and Tawney (1926), it is not plausible that such factors as race, religion or to a lesser extent gender, directly affects work capacity. However, the same is not true of health. The extent to which poor health affects work capacity may not be picked up in the typical survey-based data sets generally used to measure wage discrimination but may be observable to an employer. Thus what we measure as discrimination may in fact reflect an unobserved difference in characteristics. However, as we outline below, we believe that our data allows us to address this problem.

It is possible that there is relatively little *wage* discrimination against the unhealthy but that instead discrimination takes place at the stage of hiring and/or firing. Indirect evidence of this is the fact that in the US from July 1992 to September 1997 the

males in the UK. Their results are similar to our results below, but they do not control for selection into health status nor do they allow for the fact that ill health might affect work capacity.

majority of charges received by the Equal Employment Opportunities Commission under the Americans with Disabilities Act concerned wrongful termination of employment (see Acemoglu and Angrist, 1998). While we are unable to measure discrimination on the basis of firing we can examine to what extent it is present in terms of differing participation rates between the healthy and unhealthy.

Finally, it is plausible that the impact of health upon wages and participation and the possible attendant discrimination may differ across the age distribution. It seems probable that an unhealthy older person searching for employment will encounter more discrimination than will an unhealthy younger person. To examine this we also carry out discrimination decompositions for an older and a younger subsample of our data.

The layout of the paper is as follows. In section 2 we will confirm that health status *is* endogenous. In section 3 we measure wage discrimination for the case where health is treated as exogenous and where it is treated as endogenous. We also take account of the direct effect of ill-health upon capacity for work. Section 4 examines discrimination for labour market participation while section 5 analyses how discrimination may differ according to age. Section 6 provides concluding comments.

2. Is Health Status Endogenous or Exogenous?

In this section of the paper we test for the exogeneity of health status. Before doing so, we first discuss our data set. Our data set is the *Family Resources Survey (FRS) 1995*. The FRS is a survey of household characteristics and living standards, which covers about 25,000 households in Great Britain. It contains extensive information about a variety of issues relating to the family, including information upon health. We restrict

our sample to married couples aged less than 65, and exclude the self-employed. This gives a sample consisting of 8747 couples. Given gender differences in morbidity and occupational patterns it seems worthwhile to measure discrimination separately for men and women.

The particular measure of health status which we employ in this paper is a self-reported measure. Specifically, people are asked to reply to the following question: "Do you have any longstanding illness, disability or infirmity?" Longstanding is taken to include anything which the respondent has had or is likely to have for at least six months. Such measures have been subject to a number of criticisms[4]. Bound (1991) discusses the reasons for suspicion of survey responses to questions concerning self-evaluated health. He concludes that in general there do not appear to be compelling reasons to reject self-evaluated health measures in favour of more "objective" measures such as diagnosed illnesses or subsequent mortality. In tables 1 and 2 we present summary statistics for a number of variables of interest for males and females who are healthy and unhealthy (by "unhealthy" we mean they answered "yes" to the above question). We see that a higher proportion of men suffer from ill-health and that the unhealthy typically are older, less well-educated[5], have lower participation rates, work fewer hours and earn less than the healthy (note that these statistics are for the sample as a whole and not just those who are working). We also observe a higher wage premium for the healthy amongst men than amongst women. This may reflect the fact that women select themselves into occupations where health status has less influence upon wages. Ideally we would like to

[4] See for example Myers (1982, 1983) and Anderson and Burkhauser (1984). In a recent study Dwyer and Mitchell (1998) conclude that self-reported health measures are not endogenous in the context of the retirement decision.

model selection into occupation but given that we are already partitioning our data according to health status and the degree to which this affects work capacity further partitioning according to occupational status would create degrees of freedom problems.

We now turn to the question of the exogeneity of health status. In calculating discrimination against the unhealthy we typically estimate a wage equation for the healthy and for the unhealthy. However first, we need to determine whether health is exogenous for the determination of wages. Thus we model the determination of health status via a probit equation, and then construct a fitted value for health. We then insert this fitted value, along with the actual value for health, in a wage equation and test for the significance of the coefficient on the fitted value. Under the null hypothesis of exogeneity this coefficient should be insignificant (this is a version of the standard Wu test of exogeneity, see Gujarati, 1997).

In table 1 in the appendix we present probit equations for health status. We model health status as depending upon age, education, race, unearned income and spouse's health.[6] We observe differences in the determination of health status between men and women. In both cases education and spouse's health are significant. For males, age and race (barely) are also significant but not so for females.

We now investigate whether the fitted values of health estimated from these equations appear as significant in a wage equation. In table 2 in the appendix we present the wage equation including the fitted value for health. For males the fitted value for health is significant thus rejecting the null hypothesis that health is exogenous for males.

[5] We are assuming that education is exogenous. For a study examining the effect of ill-health upon wages where education is endogenous, see Walker and Thompson (1996).

For females however, the situation is more ambiguous. At the 90% level of significance exogeneity is rejected, but not at the 95% level. On balance however, we believe there is sufficient evidence to warrant the measuring of discrimination against the unhealthy on the basis that health is endogenous. For the sake of comparison however, we will also present discrimination measures where health is assumed to be exogenous.

3. Wage Equations and Discrimination with Endogenous Health

The standard approach to the measurement of wage discrimination is that introduced by Blinder (1973) and Oaxaca (1973), henceforth called the B-O approach. The standard B-O decomposition of wage differences follows from a wage equation of the following type:

$$Y_i = X_i'\beta_i + \varepsilon_i$$

where Y_i refers to the log of the wage for the healthy (unhealthy), X_i is a vector of determinants of market wages (e.g. age, education etc.), β_i is the associated parameter vector and ε_i is an error term following a normal distribution $(0, \sigma_\varepsilon)$. The standard B-O decomposition then breaks down the difference between the wages of the healthy and the unhealthy in the following way:

$$\bar{Y}_h - \bar{Y}_u = \bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u) + (\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$$

where $\bar{Y}_i$ (i=healthy, unhealthy) is the predicted mean (log) wage , $\bar{X}_i'$ is the mean vector of wage determining variables and $\hat{\beta}_i$ is the vector of estimated returns to the wage determinants. Thus the first term on the right-hand side above is viewed as the

[6] Spouse's health will be used for identification (along with functional form) when estimating the selectivity-corrected wage equation. Ideally we would like to use a continuous variable for identification

discrimination component of the wage difference while the second term is that due to differences in endowments of human capital. Decompositions of the above type will be sensitive to whichever group's wage structure is assumed to be the norm. This is a standard index number issue and in this paper we will select the wage structure of the dominant group (i.e. the healthy) as the norm.[7]

As mentioned above, one issue which merits discussion is the precise meaning of human capital variables in the context of measuring wage discrimination against the non-healthy. Depending upon the nature of the precise health problem which gives rise to the status of "unhealthy" it is possible that this problem may reduce work capacity or productivity. In this case the payment of a lower wage to such an individual may not constitute discrimination in the sense in which we wish to measure it here. It may simply reflect the fact that there are characteristics which are observable to the employer but are not picked up in our data set. However, we do have additional information which may enable us to overcome this problem. Those people who respond "yes" to the question regarding a health problem are also asked "does this health problem in any way affect your work capacity?" (note this question is asked both to those working and non-working). If the response to this question is "yes" then we face the situation where the person's work capacity is affected and an observed lower wage, conditional on other human capital variables, may simply reflect this incapacity. However, if the person answers "no" to the question and we still observe a lower wage, conditional on other human capital variables, then it seems reasonable to infer that discrimination, in the B-O sense, is present.

but no suitable one could be found. See Vella (1998).

[7] See Oaxaca and Ransom (1994) for a discussion of this issue.

Thus one approach which takes account of the direct effect of ill-health upon capacity to work is to drop those observations who answer "yes" to the question "does this health problem in any way affect your work capacity?". Thus in total we have 6744 males and 7085 females who do not have a health problem. This leaves 2003 males and 1662 females have a health problem of which 567 and 486 respectively state that their health problem does not affect their work capacity. These people are in the third column of tables 1 and 2 and we can see that their characteristics are closer to the healthy than the unhealthy. For the sake of comparison we will present measures of discrimination for the larger and smaller samples of the unhealthy.

We now present wage equations both for endogenous (i.e. taking account of selection into health status) and exogenous health. For the case of endogenous health we model health status via the probit equations in the appendix. From these probit equations we estimate the inverse Mills ratio and then include this term in wage equations for the healthy and the unhealthy. This follows the parametric procedure for estimating the union-non-union wage differential as outlined in Lanot and Walker (1998). We choose not to take account of selectivity into employment since previous work with this data set indicates that there is little evidence of this type of selectivity bias.[8]

Tables 3A to 4B in the appendix present the estimated coefficients for healthy and unhealthy males and females controlling for selection and also taking account of the direct effect of health upon work capacity. Thus in these tables we have three columns in all cases: the healthy, the unhealthy where we have included those whose work

[8] For a recent treatment of the interpretation of selectivity terms in wage decompositions see Neumann and Oaxaca (1998) and for an application to this data set in the context of gender discrimination see Madden (1998).

capacity is affected and finally the unhealthy where we have dropped those observations whose work capacity is affected.

In tables 3 and 4 we give the standard Blinder-Oaxaca decomposition of the wage difference between the healthy and the unhealthy, for both males and females. Concentrating first of all on those cases where the unhealthy includes those whose work capacity if affected by their ill-health (i.e. the bigger of the two unhealthy samples) we present results for when health is regarded as both endogenous and exogenous and this allows us examine the importance of this assumption for our measures. For males the wage difference is about 14% and regardless of whether we regard health as exogenous or endogenous the portion of this difference accounted for by discrimination is fairly constant, within the range of 30-35% and it is statistically significant (this is slightly lower than the figures reported by Kidd et al., 1998, which suggest discrimination accounting for about 50% of the raw wage gap) It seems reasonable to suggest that in this case, whether health is treated as exogenous or endogenous makes little relatively difference to the decomposition. For females the results are quite similar, bearing in mind that the wage difference is smaller at around 4%. Once again, the breakdown of that wage difference between discrimination and characteristics is relatively insensitive to the endogeneity/exogeneity of health but also note that for females measured discrimination is not statistically significant.

Turning now the case where we drop those who claim that ill-health affects their work capacity, the observed wage difference is much smaller. For males it is around 5.6%, while for females ill-health actually confers a wage *premium*, albeit of only around 0.28%. Once again for males regardless of whether health is treated as exogenous or

endogenous the decomposition between characteristics and discrimination is relatively unaffected, both accounting for about 50% of the difference. For females, whether health is treated as exogenous or endogenous once again makes relatively little difference in terms of the relative decomposition of the wage difference between characteristics and discrimination. It makes a difference in *absolute* terms but this merely reflects the fact that the wage difference is so small. Perhaps the crucual point here is that in no case is measured discrimination statistically significant.

Thus the conclusion which we can draw from this section is that assumptions regarding the endogeneity or exogeneity of health appear to make little difference to the decomposition of the wage difference between characteristics and discrimination. What is of much greater importance is whether we take account of the direct effect of ill-health upon capacity for work. This affects the magnitude of the observed wage difference and also affects the breakdown of this difference into the parts attributed to characteristics and discrimination. The magnitude of measured wage discrimination for males falls markedly, while for females it disappears and perhaps more importantly in no case is discrimination statistically significant.

4. Discrimination and Labour Market Participation

So far our analysis has revealed relatively little discrimination on the basis of health. However it is possible that little discrimination is observed simply because it has already happened before people enter the labour market i.e. there is discrimination at point of entry to the labour market. We now turn to measure this form of discrimination and

perform the usual B-O decomposition of the difference in participation rates between the healthy and unhealthy.

In modelling labour force participation it is customary to use a probit or logit specification. A standard B-O decomposition can then be carried out and the difference in participation assigned to characteristics and discrimination.[9] However, if we are to be consistent with our specifications from section 3, in particular in controlling for the endogeneity of health and including the inverse Mills ratio on the right-hand side, then we will have to instead employ a linear probability model (LPM). The use of an LPM for modelling labour market participation is generally not advised, principally because the fitted values from the LPM are not constrained to lie in the (0,1) interval, as is the case with probit or logit models.[10] However, in our case, because controlling for endogeneity of health involves the appending of the Inverse Mills Ratio term onto the end of a regression, it is convenient to use a linear specification. Hence our use of the LPM. Given however that the B-O decomposition involves measuring the difference between regression coefficients evaluated at the mean it seems reasonable to suggest that the results may not be too sensitive to the use of the LPM.

The results from the LPM for participation for men and women for the cases of exogenous and endogenous health are in the appendix and tables 5 and 6 present the results for the B-O decompositions. By and large the results are very much in line with those for wages. When we do not take into account the direct effect of health upon work capacity then the difference in participation rates is quite large (nearly 43% for men and

[9] For an example see Madden (1998).
[10] See Greene (1997) for a discussion of the linear probability model.

28% for women). In both cases the bulk of this difference is accounted for by discrimination and it is statistically significant.

However, once we allow for the direct effect of health upon work capacity then the difference in participation rates drops quite sharply (in both cases to around 4%) and also the breakdown between discrimination and characteristics changes. Now the major part of the difference (about two-thirds to three-quarters) is accounted for by differences in characteristics. Measured discrimination is not statistically significant.

In line with the results in section 3, the issue of endogenity/exogeneity of health makes little difference to the results. Only perhaps in the case of males where the direct effect of health upon capacity is accounted for does the controlling for endogeneity appear to make a difference. When endogeneity is controlled for the portion of the participation difference accounted for by discrimination is nearly halved from 24.4% to 13.3% but it is not statistically significant.

Overall the results from this section accord with those in earlier sections. Once we allow for the fact that health may have a direct effect upon capacity for work, and if we regard that as a "legitimate" reason for lower participation rates amongst the unhealthy then the degree of measured discrimination at the hiring stage drops and is not significant.

5. Discrimination and Age

As stated in the introduction it is possible that discrimination, whether via wages or participation, on the basis of health may not apply uniformly across the age distribution. For example, an unhealthy middle aged person seeking employment may encounter more

discrimination than would an unhealthy young person. If we were investigating this issue in terms of a standard wage or participation equation approach then the appropriate procedure would be to include an interaction term between age and health. However, since we are taking a discrimination approach and are partitioning our data on the basis of health status, to take account of age we need to further partition our data into "old" and "young" and then examine discrimination as before. Accordingly we partition our data into old and young so that our "old" sample consists of all those whose age is equal to or greater than the median age and similarly our "young" sample consists of those whose age is less than or equal to the median age.[11]

The wage and participation equations for the older and younger samples are given in the tables in the appendix and the decompositions are given in tables 7 to 14. Taking wage discrimination for males first we see that when we include incapacitated males in our sample of the unhealthy, then the raw wage gap is greater for older men, but the portion of the gap accounted for by discrimination is smaller. For both older and younger men the discrimination is statistically significant. The most notable results here occur when we look at the case where the unhealthy group does not include the incapacitated. Recall that when we look at the whole of the age distribution we observe no statistically significant discrimination. However when we break the sample into young and old we observe statistically significant discrimination against the young, but not against the old, where the vast bulk of the wage gap is accounted for by characteristics.[12] A closer

[11] Since age is a discrete variable this implies that our old and young samples will overlap slightly, since they both include people whose age is equal to the median age (which is 44 in the case of men and 41 in the case of women). There are 245 men and 240 women who fall into this category.

[12] The observant reader may note that in this case the raw wage gap for the sample as a whole falls outside the bound of the wage gaps for young and old. This is owing to the overlap between the samples referred to in footnote 11.

examination of the breakdown of the decomposition reveals that the major contributors to the discrimination are differences in the coefficients on age and the selection term. Thus relatively young men suffering bad health (even if it does not affect their work capacity) may lose out in terms of lost experience and this is reflected in lower returns to age for the unhealthy. Additionally those unobserved factors which cause younger men to select themselves into the healthy group are rewarded while there is a penalty for those factors which cause younger men to select themselves into the non-healthy group.

Turning now to the figures for women, the only case where they are not in accordance with the figures for the sample as a whole is for younger females when those whose work capacity is affected by ill-health are excluded. As table 4 showed, when looking at the sample as a whole there was practically no difference in wages for the healthy and unhealthy. However when we confine the sample to younger women we now observe a wage premium of around 6-7% for the unhealthy and far from being discriminated against in fact there is statistically significant discrimination *in favour of* the unhealthy. A more detailed breakdown of the decomposition reveals that it is the return to age which is the chief explanatory factor. The return to age for younger unhealthy women is more than twice that for younger healthy women. It is hard to think of a plausible reason why this is so.

We now turn to the figures for participation. Looking at the figures for men first, the breakdown for older men is very similar to that for men as a whole. For younger men the raw participation gap is smaller which is plausible on the basis that ill-health is less likely to prevent a younger man from working than it is an older man. The proportionate breakdown of the participation gap between characteristics and discrimination is similar

across older and younger men and thus accords with that for men as a whole. The results are very similar for females. The raw participation gap is smaller for younger females but the characteristics/discrimination breakdown is the same.

5. Discussion and Conclusions

In this paper we have examined the issue of discrimination in the labour market on the basis of health. It appears that in the areas of wages and labour market participation, once we take account of the direct effect of ill-health upon capacity for work, and if we regard that as a "legitimate" reason for lower wages/participation amongst the unhealthy then the degree of measured discrimination is relatively modest and except for participation for younger men is not staistically significant. Controlling for the potential endogeneity makes relatively little difference to this result, and what measured discrimination we do find appears to be more concentrated amongst males, with the problem apparently worse for younger males.

What policy implications can be drawn from these results, bearing in mind that the results are relatively preliminary? This caveat apart, the results appear to be most sensitive to the distinction between unhealthy people whose work capacity is affected by their ill-health and those who are unaffected. This suggests that measures which concentrate on minimising the effect of ill-health upon work capacity may provide the best results in terms of narrowing the wage gap between the healthy and unhealthy. Thus policies re work access etc. might be more fruitful that anti-discriminatory legislation. The extra penalty which younger men appear to suffer suggests that it may also be worthwhile to concentrate resources upon that portion of a career where the returns to age

are greatest. The wage penalty from lost work experience early in a career, even if the particular cause of ill-health is not incapacitating, appears to be more acute.

It is important to note however, that we have only captured a partial picture of the work experience of the unhealthy. It is possible to think of other areas where the sick/disabled may face discrimination. For example, they may face lower incentives to invest in human capital and so it may be more appropriate to regard\education as endogenous rather than exogenous.[13] Furthermore, we have not addressed the issue of termination of employment. Nor have we taken account of the extra disutility that may be involved for a sick person to carry out task which might be relatively straightforward for an able-bodied person. In general we might expect to observe compensating differentials in these cases rather than wage penalties. There is also discrimination that may be involved if employers do not provide adequate facilities (e.g. wheelchair ramps) to assist sick people in employment. Unhealthy/disabled people may have greater travel costs both directly and in terms of leisure foregone, which would not be picked up in a typical micro dataset. It is also worth remembering that our definition of unhealthy was very broad and it would be worthwhile to look at this issue with respect to specific diseases or conditions (we hope to do this when the more detailed breakdown of health problems in the FRS becomes generally available). However our results may give some indication of directions for future research into the important issue of the labour market experience of the sick/disabled.

[13] For a discussion of this issue see Walker and Thompson (1996).

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Table 1: Summary Statistics for Wage and Human Capital Variables for Healthy and Unhealthy Males (Standard dev. in brackets)

	Healthy (N=6744)	Unhealthy (N=2003)	Unhealthy and Not Incapacitated (N=567)
Participation	0.867 (0.339)	0.439 (0.496)	0.822 (0.383)
Weekly Hours Worked	42.553 (9.765)	42.050 (10.411)	42.899 (9.932)
Weekly Wage (log)	2.109 (0.577)	1.971 (0.601)	2.053
Age	42.631 (10.507)	50.002 (10.482)	46.746 (10.658)
Years of Education	17.002 (2.586)	15.945 (2.077)	16.533 (2.405)
Unearned Income	61.571 (109.620)	132.981 (120.662)	73.283 (114.221)
Non-White	0.053 (0.224)	0.056 (0.231)	0.035 (0.185)

Table 2: Summary Statistics for Wage and Human Capital Variables for Healthy and Unhealthy Females (Standard dev. in brackets)

	Healthy (N=7085)	Unhealthy (N=1662)	Unhealthy and Not Incapacitated (N=486)
Participation	0.685 (0.464)	0.401 (0.490)	0.646 (0.479)
Weekly Hours Worked	28.549 (11.833)	27.211 (12.511)	28.322 (0.570)
Weekly Wage (log)	1.690 (0.559)	1.643 (0.568)	1.693 (0.570)
Age	40.755 (10.489)	47.229 (10.570)	45.397 (11.149)
Years of Education	16.878 (2.242)	16.037 (1.837)	16.389 (1.985)
Unearned Income	69.927 (114.0)	112.008 (119.206)	82.815 (125.177)
Non-White	0.057 (0.232)	0.046 (0.210)	0.037 (0.189)

Table 3: B-O Decomposition of Wages for Healthy and Unhealthy Males

	Including Incapacitated		Not Including Incapacitated	
$\log w_h - \log w_u$	0.137		0.056	
	Health Endogenous	Health Exogenous	Health Endogenous	Health Exogenous
$\bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u)$ - "Discrimination"	0.088 (64.3%)**	0.093 (67.6%)**	0.027 (47.3%)	0.031 (56.3%)
$(\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$ - "Characteristics"	0.049 (35.6%)	0.044 (32.4%)	0.029 (52.7%)	0.025 (43.7%)

Table 4: B-O Decomposition of Wages for Healthy and Unhealthy Females

	Including Incapacitated		Not Including Incapacitated	
$\log w_h - \log w_u$	0.047		-0.003	
	Health Endogenous	Health Exogenous	Health Endogenous	Health Exogenous
$\bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u)$ - "Discrimination"	0.006 (12.7%)	0.007 (14.4%)	-0.043 (-1421.4%)	-0.042 (-1392.8%)
$(\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$ - "Characteristics"	0.041 (87.3%)	0.040 (85.6%)	0.040 (1321.4%)	0.039 (1292.8%)

Table 5: B-O Decomposition of Participation for Healthy and Unhealthy Males

	Including Incapacitated		Not Including Incapacitated	
$P_h - P_u$	0.428		0.045	
	Health Endogenous	Health Exogenous	Health Endogenous	Health Exogenous
$\bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u)$ - "Discrimination"	0.278** (65.0%)	0.280** (65.4%)	0.009 (20.0%)	0.011 (24.4%)
$(\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$ - "Characteristics"	0.150 (35.0%)	0.148 (34.6%)	0.036 (80.0%)	0.034 (75.6%)

Table 6: B-O Decomposition of Participation for Healthy and Unhealthy Females

	Including Incapacitated		Not Including Incapacitated	
$P_h - P_u$	0.285		0.039	
	Health Endogenous	Health Exogenous	Health Endogenous	Health Exogenous
$\bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u)$ - "Discrimination"	0.213** (74.7%)	0.216** (75.8%)	0.010 (34.5%)	0.010 (30.8%)
$(\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$ - "Characteristics"	0.072 (25.3%)	0.069 (24.2%)	0.029 (65.5%)	0.029 (69.2%)

Table 7: B-O Decomposition of Wages for Healthy and Unhealthy Males (Older)

	Including Incapacitated		Not Including Incapacitated	
$\log w_h - \log w_u$	0.154		0.060	
	Health Endogenous	Health Exogenous	Health Endogenous	Health Exogenous
$\bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u)$ - "Discrimination"	0.080** (51.9%)	0.083** (53.9%)	0.001 (1.7%)	0.005 (8.3%)
$(\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$ - "Characteristics"	0.074 (48.1%)	0.071 (46.1%)	0.059 (98.3%)	0.055 (91.7%)

Table 8: B-O Decomposition of Wages for Healthy and Unhealthy Males (Younger)

	Including Incapacitated		Not Including Incapacitated	
$\log w_h - \log w_u$	0.129		0.066	
	Health Endogenous	Health Exogenous	Health Endogenous	Health Exogenous
$\bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u)$ - "Discrimination"	0.097** (75.2%)	0.103** (79.8%)	0.058* (87.9%)	0.063** (95.4%)
$(\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$ - "Characteristics"	0.032 (24.8%)	0.0261 (20.2%)	0.008 (12.1%)	0.003 (4.5%)

Table 9: B-O Decomposition of Wages for Healthy and Unhealthy Females (Older)

	Including Incapacitated		Not Including Incapacitated	
$\log w_h - \log w_u$	0.061		0.030	
	Health Endogenous	Health Exogenous	Health Endogenous	Health Exogenous
$\bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u)$ - "Discrimination"	0.011 (18.0%)	0.010 (16.4%)	-0.016 (-53.3%)	-0.016 (-54.7%)
$(\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$ - "Characteristics"	0.050 (82.0%)	0.051 (83.6%)	0.046 (153.3%)	0.046 (154.7%)

Table 10: B-O Decomposition of Wages for Healthy and Unhealthy Females (Younger)

	Including Incapacitated		Not Including Incapacitated	
$\log w_h - \log w_u$	0.011		-0.067	
	Health Endogenous	Health Exogenous	Health Endogenous	Health Exogenous
$\bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u)$ - "Discrimination"	-0.004 (-36.4%)	-0.003 (-27.3%)	-0.084*(125.4%)	-0.082* (122.4%)
$(\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$ - "Characteristics"	0.015 (136.4%)	0.014 (127.3%)	0.017 (-25.4%)	0.015 (-22.4%)

Table 11: B-O Decomposition of Participation for Healthy and Unhealthy Males (Older)

	Including Incapacitated		Not Including Incapacitated	
$P_h - P_u$	0.457		0.059	
	Health Endogenous	Health Exogenous	Health Endogenous	Health Exogenous
$\bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u)$ - "Discrimination"	0.311** (68.1%)	0.313** (68.5%)	0.016 (27.1%)	0.018 (30.5%)
$(\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$ - "Characteristics"	0.146 (31.9%)	0.144 (31.5%)	0.0423 (72.9%)	0.041 (69.5%)

Table 12: B-O Decomposition of Participation for Healthy and Unhealthy Males (Younger)

	Including Incapacitated		Not Including Incapacitated	
$P_h - P_u$	0.278		-0.009	
	Health Endogenous	Health Exogenous	Health Endogenous	Health Exogenous
$\bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u)$ - "Discrimination"	0.185** (66.5%)	0.187** (67.3%)	0.002 (-22.2%)	0.004 (-44.4%)
$(\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$ - "Characteristics"	0.093 (33.5%)	0.091 (32.7%)	-0.011 (122.2%)	-0.013 (144.4%)

Table 13: B-O Decomposition of Participation for Healthy and Unhealthy Females (Older)

	Including Incapacitated		Not Including Incapacitated	
$P_h - P_u$	0.339		0.071	
	Health Endogenous	Health Exogenous	Health Endogenous	Health Exogenous
$\bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u)$ - "Discrimination"	0.250** (73.7%)	0.2541** (75.0%)	0.019 (27.3%)	0.023 (32.7%)
$(\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$ - "Characteristics"	0.089 (26.3%)	0.0846 (25.0%)	0.052 (72.7%)	0.048 (67.3%)

Table 14: B-O Decomposition of Participation for Healthy and Unhealthy Females (Younger)

	Including Incapacitated		Not Including Incapacitated	
$P_h - P_u$	0.163		-0.011	
	Health Endogenous	Health Exogenous	Health Endogenous	Health Exogenous
$\bar{X}_u'(\hat{\beta}_h - \hat{\beta}_u)$ - "Discrimination"	0.113** (69.3%)	0.112** (68.7%)	-0.016 (-145.4%)	-0.016 (149.1%)
$(\bar{X}_h - \bar{X}_u)'\hat{\beta}_h$ - "Characteristics"	0.050 (30.7%)	0.051 (31.3%)	0.005 (45.4%)	0.005 (-49.1%)

Appendix Tables

Table 1: Probit determination of Health Status (S.E. in brackets)

	Male	Female
Age	-.0017289 (.0076205)	.007488 (.0073256)
Age^2	.0005951 (.0001366)**	.0003382 (.0001406)*
Education	-.0753243 (.0072219)**	-.0610163 (.0085481**)
Non-White	.2070835 (.069596)**	-.0084638 (.0740605)
Spouse's Health	.4078128 (.0375021)**	.3974263 (.0366089)*
Constant	-.0863669 (.1560272)	-.432086 (.1716218)**
Pseudo R^2	0.1061	0.0810

Table 2: Wage Equation Using Predicted Probability as Fitted Value for Health

Dep. Var.=Log Wage	Male	Female
Age	.0517783 (.0031902)**	.0284344 (.003167)**
Age^2	-.0008352 (.0000718)**	-.0004758 (.0000722)**
Education	.0818982 (.0034752)**	.1148118 (.0036972)**
Non-White	-.3847266 (.0316984)**	-.1376117 (.0358881)**
Health	-.0892216 (.0191096)**	-.0042008 (.0206404)
Fitted Health	-.4072753 (.1327864)**	-.2490486 (.1482491)
Constant	.1287382 (.0808181)	-.5709144 (.0811925)**
$\bar{R}^2$	0.2029	0.2256

** significant at 1%, * significant at 5%

Table 3A: Wage Equation for Healthy and Unhealthy Males (Health Endogenous)

Dep. Var.=Log Wage	Healthy (N=5849)	Unhealthy (N=879)	Unhealthy and not Incapacitated (N=466)
Age	.0558124 ** (.0032845)	.0481755** (.0097455)	.0472241** (.0110322)
Age^2	-.0009135 ** (.0000701)	-.0008036** (.0001857)	-.0008702** (.000215)
Education	.0789693 ** (.004863)	.083658** (.0123034)	.1024045** (.0135903)
Non-White	-.3900618 ** (.0340653)	-.29246** (.1054969)	-.1600275 (.1232316)
λ	.1670377** (.064409)	.0301636 (.1468783)	-.2538845 (.1670114)
Constant	-.1923248 * (.0766852)	-.0629993 (.2270114)	.1538057 (.2512372)
$\bar{R}^2$	0.2087	0.1223	0.1853

Table 3B: Wage Equation for Healthy and Unhealthy Females (Health Endogenous)

Dep. Var.=Log Wage	Healthy (N=4856)	Unhealthy (N=666)	Unhealthy and not Incapacitated (N=314)
Age	.031057**	.018916	.0181018
	(.0033845)	(.0099179)	(.0139108)
Age^2	-.0005581**	-.0002277	-.0001885
	(.0000729)	(.0001947)	(.0002751)
Education	.1160741**	.11399**	.1130141**
	(.0046838)	(.0128914)	(.0194891)
Non-White	-.148616**	-.033207	-.1151024
	(.0374894)	(.1226278)	(.1663801)
λ	.0286276	.1836973	.2477045
	(.063555)	(.1486805)	(.2162816)
Constant	-.687365**	-.8243243**	-.8595411*
	(.0921586)	(.2591807)	(.3720609)
$\bar{R}^2$	0.2284	0.1920	0.1976

** significant at 1%, * significant at 5%

Table 4A: Wage Equation for Healthy and Unhealthy Males (Health Exogenous)

Dep. Var.=Log Wage	Healthy (N=5849)	Unhealthy (N=879)	Unhealthy and not Incapacitated (N=466)
Age	.0554286**	.0480449**	.0482517**
	(.0032828)	(.0097193)	(.0110271)
Age^2	-.000983**	-.0008149**	-.0007719**
	(.0000648)	(.0001772)	(.0002053)
Education	.0894804**	.0854792**	.0870986**
	(.0026886)	(.0085238)	(.0091409)
Non-White	-.4177918**	-.2967233**	-.1343286
	(.0323595)	(.1033775)	(.1222399)
Constant	-.0647954	-.0389172	-.0490581
	(.0588714)	(.1942723)	(.2131675)
$\bar{R}^2$	0.2079	0.1232	0.1830

Table 4B: Wage Equation for Healthy and Unhealthy Females (Health Exogenous)

Dep. Var.=Log Wage	Healthy (N=4856)	Unhealthy (N=666)	Unhealthy and not Incapacitated (N=314)
Age	.0308288**	.0171228	.014927
	(.0033461)	(.0098151)	(.0136387)
Age^2	-.0005658**	-.0002724	-.0002304
	(.0000708)	(.0001914)	(.0002728)
Education	.1176007**	.1238812**	.1266809**
	(.0032326)	(.0101083)	(.0154164)
Non-White	-.1484052**	-.0310047	-.1105827
	(.0374834)	(.1226636)	(.1664171)
Constant	-.6589552**	-.643804**	-.6166278
	(.0671898)	(.2141572)	(.3058397)
$\bar{R}^2$	0.2286	0.1914	0.1838

** significant at 1%, * significant at 5%

Table 5A: Participation Equation for Healthy and Unhealthy Males (Health Exogenous)

Dep. Var.=Participation	Healthy (N=6744)	Unhealthy (N=2003)	Unhealthy and Not Incapacitated (N=567)
Age	.0302127** (.0027884)	.0199383** (.0072034)	.0383232** (.0100128)
Age^2	-.0003723** (.0000319)	-.0002897** (.0000765)	-.0004613** (.0001104)
Education	.0131579** (.0014131)	.0353833** (.0042174)	.011693* (.0051901)
Non-White	-.123824** (.0158295)	-.157419** (.0369411)	-.0673583 (.0658136)
Unearned Income	-.0014335** (.0000336)	-.0022801** (.000073)	-.0019736** (.0001144)
Constant	.1682278** (.0620388)	-.0540205 (.1792738)	.0444805 (.2399191)
$\bar{R}^2$	0.2778	0.4236	0.4336

** significant at 1%, * significant at 5%

Table 5B: Participation Equation for Healthy and Unhealthy Females (Health Exogenous)

Dep. Var.=Participation	Healthy (N=7085)	Unhealthy (N=1662)	Unhealthy and Not Incapacitated (N=486)
Age	.0522509** (.00388)	.0351437** (.0087252)	.0663188** (.0146099)
Age^2	-.0006026** (.0000463)	-.0004407** (.0000971)	-.0008065** (.0001659)
Education	.020319** (.002377)	.0528972** (.00615)	.022588* (.0106755)
Non-White	-.238068** (.0222673)	-.1429755** (.0510909)	-.0722012 (.1053025)
Unearned Income	-.0011502** (.0000473)	-.0013694** (.0000938)	-.0010375** (.0001656)
Constant	-.6258987** (.0869208)	-.9152794** (.2193442)	-.8839183* (.3575156)
$\bar{R}^2$	0.1358	0.2115	0.1728

Table 6A: Participation Equation for Healthy and Unhealthy Males (Health Endogenous)

Dep. Var.=Participation	Healthy (N=6744)	Unhealthy (N=2003)	Unhealthy and Not Incapacitated (N=567)
Age	.0313454** (.0027888)	.022383** (.0072306)	.0388689** (.0100725)
Age^2	-.0003402** (.0000324)	-.0002686** (.0000766)	-.0004553** (.000111)
Education	-.0022538 (.00303)	.0189149** (.0067627)	.0077503 (.0091018)
Non-White	-.0937989** (.016634)	-.1293712** (.0379477)	-.0612104 (.0668794)
Unearned Income	-.0011375** (.0000614)	-.0019417** (.0001309)	-.0018959** (.0001865)
λ	.2005241** (.0348968)	.2210647** (.0710623)	.0536683 (.1017464)
Constant	-.0020367 (.0686191)	-.2670425** (.1915441)	-.0079917 (.259868)
$\bar{R}^2$	0.2812	0.4261	0.4329

** significant at 1%, * significant at 5%

Table 6B: Participation Equation for Healthy and Unhealthy Females (Health Endogenous)

Dep. Var.=Participation	Healthy (N=7085)	Unhealthy (N=1662)	Unhealthy and Not Incapacitated (N=486)
Age	.0527326** (.0038885)	.0354595** (.0087742)	.0674075** (.0147114)
Age^2	-.0005881** (.000047)	-.0004374** (.0000975)	-.0007955** (.0001669)
Education	.014954** (.0037908)	.0509419** (.0083139)	.016216 (.0144017)
Non-White	-.2393514** (.0222749)	-.1434242** (.0511206)	-.0742525 (.1054104)
Unearned Income	-.0010843** (.0000596)	-.0013432** (.0001201)	-.0009583** (.0002047)
λ	.0905322 (.0498355)	.0311523 (.0891044)	.1071511 (.1624326)
Constant	-.7247524** (.1025373)	-.9499937** (.2408246)	-1.008044* (.4041956)
$\bar{R}^2$	0.1361	0.2110	0.1718

Table 7A: Wage Equation for Older Healthy and Unhealthy Males (Health Endogenous)

Dep. Var.=Log Wage	Healthy (N=2555)	Unhealthy (N=541)	Unhealthy and not Incapacitated (N=271)
Age	.0714608** (.026204)	-.0246137 (.0709388)	-.0310326 (.0903974)
Age^2	-.0011655** (.0003766)	.0002671 (.0010211)	.000286 (.0013054)
Education	.0822127** (.0070456)	.0588996** (.0179137)	.0881368** (.0209995)
Non-White	-.3371264** (.0594223)	-.22055 (.1697284)	-.1349994 (.1727548)
λ	.1301979 (.0884988)	.2135166 (.1804972)	-.0968473 (.2250256)
Constant	-.4312718 (.4580193)	1.328087 (1.224212)	1.494979 (1.552639)
$\bar{R}^2$	0.1997	0.1080	0.1513

Table 7B: Wage Equation for Older Healthy and Unhealthy Males (Health Exogenous)

Dep. Var.=Log Wage	Healthy (N=2555)	Unhealthy (N=541)	Unhealthy and not Incapacitated (N=271)
Age	.0686169** (.0260995)	-.0270087 (.0710641)	-.0288898 (.0902464)
Age^2	-.0011825** (.0003767)	.0002083 (.0010204)	.0002978 (.001304)
Education	.0903372** (.0045402)	.0719148** (.0131015)	.0818541** (.0163551)
Non-White	-.3589234 (.0574951)	-.257045 (.1740805)	-.124943 (.1702259)
Constant	-.2885365 (.4455517)	1.520958 (1.223136)	1.395819 (1.534765)
$\bar{R}^2$	0.1991	0.1056	0.1507

Table 8A: Wage Equation for Younger Healthy and Unhealthy Males (Health Endogenous)

Dep. Var.=Log Wage	Healthy (N=3475)	Unhealthy (N=363)	Unhealthy and not Incapacitated (N=204)
Age	.0664522** (.0094545)	.0295162 (.0340274)	.0520391 (.0414505)
Age^2	-.0012744** (.0002815)	-.0003408 (.0009828)	-.0010786 (.0011986)
Education	.0739431** (.0062253)	.1173582** (.020609)	.1210825** (.0207597)
Non-White	-.4218698** (.0480407)	-.4057759** (.0964731)	-.2265957 (.1475328)
λ	.2027639**(.0790425)	-.2907563 (.2035577)	-.4732775 (.2532041)
Constant	-.2339054 (.1147762)	.0602819 (.4154685)	.181529 (.4209361)
$\bar{R}^2$	0.2140	0.1549	0.2613

Table 8B: Wage Equation for Younger Healthy and Unhealthy Males (Health Exogenous)

Dep. Var.=Log Wage	Healthy (N=3475)	Unhealthy (N=363)	Unhealthy and not Incapacitated (N=204)
Age	.0666932** (.009444)	.030215 (.0336564)	.0496702 (.0404476)
Age^2	-.001377 (.0002783)	-.0002237 (.0009839)	-.0007812 (.0011779)
Education	.0868046** (.0036679)	.0998211** (.0158049)	.0957166** (.0134488)
Non-White	-.4555867** (.0466677)	-.3707991** (.094706)	-.176209 (.1442662)
Constant	-.0867598 (.0999811)	-.1656846 (.3739309)	-.2166258 (.3563906)
$\bar{R}^2$	0.2128	0.1517	0.2483

Table 9A: Wage Equation for Older Healthy and Unhealthy Females (Health Endogenous)

Dep. Var.=Log Wage	Healthy (N=2375)	Unhealthy (N=428)	Unhealthy and not Incapacitated (N=201)
Age	.0486278* (.0195996)	.0195178 (.0432068)	.0546935 (.0610428)
Age^2	-.0008211** (.0003032)	-.0001949 (.0006482)	-.0006685 (.0009215)
Education	.1258343** (.0064307)	.110159** (.0150631)	.0977462** (.023008)
Non-White	-.1109469 (.0604721)	.0501025 (.1052448)	-.0283453 (.1002805)
λ	-.0113724 (.081781)	.2211827 (.1732753)	.2159925 (.2458152)
Constant	-1.078726** (.3331112)	-.8701236 (.7414926)	-1.258343 (.9852874)
$\bar{R}^2$	0.2632	0.1831	0.1490

Table 9B: Wage Equation for Older Healthy and Unhealthy Females (Health Exogenous)

Dep. Var.=Log Wage	Healthy (N=2375)	Unhealthy (N=428)	Unhealthy and not Incapacitated (N=201)
Age	.0487606* (.0195336)	.0143246 (.0432931)	.053914 (.061408)
Age^2	-.0008187** (.0003033)	-.0002021 (.0006492)	-.000736 (.0009223)
Education	.1252352** (.0048521)	.1217332** (.0120274)	.1093367** (.0156031)
Non-White	-.1110671 (.0604259)	.0565965 (.1084265)	-.0172799 (.0991001)
Constant	-1.090781** (.3177716)	-.5999008 (.7191558)	-1.072159 (.9879589)
$\bar{R}^2$	0.2632	0.1800	0.1459

Table 10A: Wage Equation for Younger Healthy and Unhealthy Females (Health Endogenous)

Dep. Var.=Log Wage	Healthy (N=2645)	Unhealthy (N=261)	Unhealthy and not Incapacitated (N=125)
Age	.0571877** .0125693	.0879646 .0493477	.1316852 .0733714
Age^2	-.0014765** .0004192	-.0025909 .0015752	-.0038176 .0023624
Education	.1060595** .0073495	.1129754** .0206172	.1087123** .0296736
Non-White	-.160154** .0557419	-.1289819 .1170978	-.1561906 .1633004
λ	.0775469 .09546	.1657852 .2584774	.4463161 .376328
Constant	-.7574428** .1500814	-1.200149* .5107744	-1.868754* .7253469
$\bar{R}^2$	0.2063	0.2339	0.2928

Table 10B: Wage Equation for Younger Healthy and Unhealthy Females (Health Exogenous)

Dep. Var.=Log Wage	Healthy (N=2645)	Unhealthy (N=261)	Unhealthy and not Incapacitated (N=125)
Age	.0567816** .0125631	.0863032 .0494483	.1250897 .0734521
Age^2	-.0015045** .0004176	-.0026214 .0015736	-.00387 .0023789
Education	.1102759** .0050276	.1218986** .015697	.1325194** .0223101
Non-White	-.159979** .055753	-.1295186 .1165341	-.1558294 .1715891
Constant	-.6832444** .1220968	-1.038487* .4488138	-1.409693* .6176277
$\bar{R}^2$	0.2061	0.2327	0.2840

Table 11A: Participation Equation for Older Healthy and Unhealthy Males (Health Endogenous)

Dep. Var.=Participation	Healthy (N=3091)	Unhealthy (N=1465)	Unhealthy and not Incapacitated (N=353)
Age	.0769154** (.0140312)	.0119176 (.0230257)	.0675116 (.0412407)
Age^2	-.0012278** (.0002049)	-.000322 (.0003137)	-.0011564* (.000582)
Education	.0126516** (.003982)	.0336765** (.0071625)	.0182538 (.0107458)
Unearned Income	-.0013124** (.0001031)	-.0020149** (.0001317)	-.0018899** (.0002155)
Non-White	-.0570464 (.0334402)	-.1916921** (.0424827)	-.0540742 (.1028358)
λ	.0609044 (.0515919)	.0625137 (.0758777)	-.0472071 (.1253435)
Constant	-.5038865* (.2450406)	.0948414 (.4319836)	-.1940241 (.7189892)
$\bar{R}^2$	0.3118	0.3710	0.4695

Table 11B: Participation Equation for Older Healthy and Unhealthy Males (Health Exogenous)

Dep. Var.=Participation	Healthy (N=3091)	Unhealthy (N=1465)	Unhealthy and not Incapacitated (N=353)
Age	.0758259** (.013989)	.0103512 (.0228915)	.0681682 (.040885)
Age^2	-.0012391** (.0002052)	-.0003267 (.0003137)	-.001146 (.0005858)
Education	.0164545** (.0022572)	.0376137** (.0052898)	.0151668 (.0072271)
Unearned Income	-.0013154** (.000103)	-.0020239** (.0001313)	-.0018848** (.0002169)
Non-White	-.0673105* (.0323759)	-.20069** (.0412746)	-.0480643 (.1002222)
Constant	-.4412943 .2383935	.1641725 (.4214742)	-.2344642 (.6888296)
$\bar{R}^2$	0.3114	0.3707	0.4693

Table 12A: Participation Equation for Younger Healthy and Unhealthy Males (Health Endogenous)

Dep. Var.=Participation	Healthy (N=3854)	Unhealthy (N=582)	Unhealthy and not Incapacitated (N=224)
Age	.0117184* (.0046614)	.000043 (.0130926)	-.0093262 (.0161909)
Age^2	-.0002587 (.0001399)	-.0000557 (.0003971)	.0003039 (.0004753)
Education	.0044955 (.0036919)	.0192617 (.0100201)	.0042921 (.0104578)
Unearned Income	-.0016371** (.0002812)	-.0034416** (.0002183)	-.0029139** (.0005801)
Non-White	-.1295058**(.0269193)	-.0305124 (.0651733)	-.0795799 (.0978448)
λ	.0842541 (.0519707)	-.0470444 (.1113258)	-.0111433 (.1271563)
Constant	.6525726** (.0688167)	.7406129** (.1842698)	1.038162** (.1587675)
$\bar{R}^2$	0.2329	0.5284	0.3177

Table 12B: Participation Equation for Younger Healthy and Unhealthy Males (Health Exogenous)

Dep. Var.=Participation	Healthy (N=3854)	Unhealthy (N=582)	Unhealthy and not Incapacitated (N=224)
Age	.0117769* (.0046569)	.0001785 (.0131194)	-.0093681 (.0161141)
Age^2	-.0003* (.0001381)	-.0000375 (.000388)	.0003108 (.0004694)
Education	.0098629** (.0018967)	.0164625* (.0074545)	.0037211 (.00607)
Unearned Income	-.0016448** (.000281)	-.0034361** (.0002165)	-.0029102** (.0005873)
Non-White	-.1436034** (.0267045)	-.0234935 (.0639168)	-.078027 (.1033028)
Constant	.7137959** (.0530707)	.7029136** (.1684038)	1.027999**(.1624925)
$\bar{R}^2$	0.2321	0.5283	0.3177

Table 13A: Participation Equation for Older Healthy and Unhealthy Females (Health Endogenous)

Dep. Var.=Participation	Healthy (N=3414)	Unhealthy (N=1199)	Unhealthy and not Incapacitated (N=322)
Age	.0821832** (.0129525)	-.0228004 (.0214742)	.0966638* (.0391797)
Age^2	-.0014312** (.0001966)	.0001334 (.0003067)	-.0016876** (.0005765)
Education	.0125528** (.0046436)	.0568901** (.0092824)	.0114269 (.0159451)
Unearned Income	-.0008173** (.0000695)	-.0011678** (.0001285)	-.0007449** (.0001779)
Non-White	-.2445937** (.0389213)	-.1607598** (.0505036)	.0235947 (.122985)
λ	.1077442 (.0589283)	-.0014728 .0959262	.1787799 (.1789017)
Constant	-.679797** (.2267916)	.2402732 .4092976	-.9666382 (.7181079)
$\bar{R}^2$	0.1722	0.2010	0.2279

Table 13B: Participation Equation for Older Healthy and Unhealthy Females (Health Exogenous)

Dep. Var.=Participation	Healthy (N=3414)	Unhealthy (N=1199)	Unhealthy and not Incapacitated (N=322)
Age	.0807804** (.0129302)	-.022765 (.0213215)	.0944014 * (.0393203)
Age^2	-.0014502** (.0001968)	.0001334 (.0003065)	-.0017153** (.0005754)
Education	.018531** (.0033533)	.056799** (.0071794)	.0216106 (.0125581)
Unearned Income	-.0008347** (.0000695)	-.0011673** (.00012)	-.0007867** (.0001752)
Non-White	-.2467842** (.0391175)	-.1607422** (.0504484)	.027992 (.1249782)
Constant	-.5687463** (.2175112)	.2386989 (.3947273)	-.7985209 (.7059085)
$\bar{R}^2$	0.1714	0.2010	0.2254

Table 14A: Participation Equation for Younger Healthy and Unhealthy Females (Health Endogenous)

Dep. Var.=Participation	Healthy (N=3872)	Unhealthy (N=502)	Unhealthy and not Incapacitated (N=180)
Age	.0045038 (.0069868)	-.0156304 (.0208986)	.0050231 (.0302117)
Age^2	.0001591 (.0002443)	.0008554 (.000697)	-.000031 (.0010538)
Education	.0205133** (.0049297)	.0316647* (.0135948)	.0150415 (.0217882)
Unearned Income	-.0017365** (.0003252)	-.0024541** (.0003054)	-.002251** (.0005601)
Non-White	-.2110635** (.0300522)	-.0805209 (.0664368)	-.0696792 (.133333)
λ	-.0112713 (.0840135)	.1292595 (.1483537)	.0383316 (.2510735)
Constant	.3474107** (.1294954)	-.0110178 (.285501)	.4369516 (.4301265)
$\bar{R}^2$	0.1355	0.2598	0.1763

Table 14B: Participation Equation for Younger Healthy and Unhealthy Females (Health Exogenous)

Dep. Var.=Participation	Healthy (N=3872)	Unhealthy (N=502)	Unhealthy and not Incapacitated (N=180)
Age	.0045515 (.0069759)	-.0164024 (.020907)	.0049622 (.0301672)
Age^2	.0001633 (.000242)	.0008143 (.0006963)	-.0000504 (.0010483)
Education	.0198871** (.0034648)	.0388495** (.0118286)	.0170266 (.0184707)
Unearned Income	-.0017335** (.0003093)	-.002497** (.0002915)	-.0022612** (.0005452)
Non-White	-.2111556** (.0298394)	-.0777512 (.0658977)	-.0698234 (.1328996)
Constant	.3368907** (.0803039)	.10865 (.2369144)	.4739246 (.3298708)
$\bar{R}^2$	0.1355	0.2587	0.1762

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