

# **Wage Growth, Human Capital and Risk Preference: Evidence from the British Household Panel Survey**

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**Abstract:** The aim of this paper is to explore how interpersonal variation in risk preference affects human capital investment and, hence, wage growth. To date, there has been a distinct lack of empirical research in this area despite the fact that the risk preference of individuals plays a key role in the theoretical models of human capital accumulation. We investigate the link between risk preference, human capital investment and wage growth using data from four waves of the *British Household Panel Survey* using a measure of the extent of risky financial assets held by individuals as a proxy for risk preference. We exploit panel data enabling us to determine the change in real wages experienced by individuals across three different time horizons, 1995-96, 1995-98 and 1995-2000. Our empirical specification is derived from a theoretical framework, which explicitly allows the risk preferences of individuals to influence human capital accumulation and, consequently, wage growth. Our findings suggest that risk-loving behaviour impacts positively on the returns to human capital investment thereby enhancing wage growth.

**Keywords:** Human capital; Risk Aversion; Wage Growth

**JEL Classification:** J24; J30.

**Acknowledgement:** We are grateful to the UK Data Archive for supplying the *British Household Panel Surveys* 1995, 1996, 1998 and 2000. We are also grateful to Stephen Pudney, Steve Thompson and Stephen Wheatley Price for excellent comments. The normal disclaimer applies.

**December 2002**

## I. Introduction

Given the uncertainty surrounding the returns to investments in human capital, it is not surprising that the risk preference of individuals plays a key role in the theoretical models of human capital accumulation.<sup>1</sup> For instance, an individual may have to decide whether to invest in firm specific human capital or more general human capital when faced with uncertainty about the firm's future as well as uncertainty prevailing in the labour market in general. A successful investment may lead to increases in remuneration or promotion whilst a less wise investment may lead to redundancy. The problem is exacerbated, as it is not clear how one can reduce the degree of risk associated with human capital investment. As pointed out by Shaw (1996), the standard approach to reducing risk in financial investment, namely diversification, is often not available in the context of human capital. Typically, an individual holds one job with his/her human capital investments tailored accordingly. Implicit contracts between the employer and the employee may provide some degree of insurance against adverse labour market conditions but it is not clear whether such contracts would extend to cases related to unknown ability.<sup>2</sup> To be specific, when the individual decides to make a particular investment in human capital, the rewards from such an investment may largely depend upon the individual's ability in this particular area which may be unknown at the time when the decision to invest is made.

Given the obvious problems in measuring risk preference, it is not surprising, that attitudes towards risk have attracted very little attention in the empirical literature.<sup>3</sup>

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<sup>1</sup> See, for example, Johnson (1978), Levhari and Weiss (1974) and Gibbons and Murphy (1992).

<sup>2</sup> See Rosen (1985) and Malcolmson (1999) for comprehensive surveys of this area.

<sup>3</sup> There has however been a small number of studies which attempt to measure risk preference. Gaynor and Gertler (1995), for example, who explore contractual relationships in medical group practices, analyse self-reported risk preference measures based on the level of importance attached to the regularity of income. Hersch and Viscusi (1990) and Hersch and Pickton (1995) proxy risk preference by individuals' cigarette smoking and seat belt use. Barsky *et al* (1997) adopt an experimental approach in order to elicit

In some empirical models of human capital accumulation, a parameter of constant risk aversion has been included,<sup>4</sup> but such an approach clearly does not allow the variation in risk aversion across individuals to play a role in the investment decision-making process. One important exception in the literature is Shaw (1996) who jointly models investment in human capital and financial wealth allowing for interpersonal differences in risk preference. The theoretical framework predicts an inverse relationship between an individual's degree of risk aversion and human capital investment which in turn impacts upon wage growth. Using U.S. data, Shaw finds that wage growth has a positive correlation with those individuals willing to invest in risky assets such as stocks and shares which is taken as a proxy for risk preference.

In this paper, we test the theoretical predictions from Shaw's model using data derived from four waves of the British Household Panel Survey (*BHPS*), as well as extending her empirical framework. We concentrate upon the 1995 wave since it is only in this year that individuals are asked detailed questions pertaining to investments held in risky assets such as shares and unit trusts.<sup>5</sup> We use information derived from the 1995 wave in order to determine how risk preference in 1995 affects estimated returns to human capital and hence wage growth over three periods 1995 to 1996, 1995 to 1998 and 1995 to 2000. One of the main advantages of the *BHPS* is the rich set of proxies available to capture risk preference. As well as having a variable denoting the share of financial wealth in investments, we are able incorporate information on the type of investment.

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individual preference parameters. Participants were asked to respond to situations designed to yield information about their risk aversion such as their willingness to gamble lifetime income. Similarly, Hartog *et al* (2002) derive an empirical measure of risk aversion by asking individuals how much they are willing to pay to participate in a specific lottery.

<sup>4</sup> Such studies include Brown and Rosen (1987), Moore (1987) and Murphy and Topel (1987). Belzil and Hansen (2002), however, dispense with this assumption.

<sup>5</sup> The information is also available in the 2000 wave, but at present there is no available data beyond this year which would allow us to explore how risk preference in 2000 affects future wage growth.

The paper is set out as follows: Section II summarises the theoretical underpinnings to our thesis whilst Section III describes the data and methodology. Our empirical findings are presented in Section IV whilst final comments and policy implications are collected in Section V.

## II. Theoretical Considerations

The theoretical framework developed by Shaw (1996), which is summarised below, is based on a portfolio allocation model extended to incorporate an individual's decision to invest in human capital as well as financial assets. The optimal allocation equations derived from an expected utility maximisation problem set in continuous time are as follows:

$$s = \frac{\mu_h - \eta}{\sigma_h^2 R} \tag{1}$$

$$\alpha = \frac{\mu - r}{\sigma_f^2 R} \tag{2}$$

where  $s(t)$  is share of current human capital allocated to producing new human capital and  $\alpha(t)$  is the share of financial wealth allocated to a portfolio of risky assets. In addition,  $(\mu_h - \eta)$  denotes the net return to human capital investment and  $\sigma_h^2$  represents the variance of its return. The net return to financial investment is given by  $(\mu - r)$  and  $\sigma_f^2$  denotes the variance of the return.<sup>6</sup> Finally,  $R$  denotes the Pratt-Arrow index of constant relative risk aversion. It is apparent from Equation 1 that there is an inverse relationship between risk aversion and investment in human capital.

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<sup>6</sup> In Equation 1,  $\mu_h$  denotes the mean return to human capital investment and  $\eta$  denotes the marginal rate of substitution between financial wealth and human capital. In Equation 2,  $\mu$  represents the expected return on the risky asset portfolio whilst  $r$  represents the risk free return.

In order to derive an expression for wage growth, wages at time  $t$  and time  $t - 1$  are defined as follows:

$$w_t = (1 - s_t)K_t = (1 - s_t)(1 + \gamma_t s_{t-1})K_{t-1} \quad (3)$$

$$w_{t-1} = (1 - s_{t-1})K_{t-1} \quad (4)$$

where  $K(t)$  denotes human capital at time  $t$  and  $\gamma_t$  is the productivity of  $s_{t-1}$ . Hence wage growth can be expressed as:

$$\Delta \ln w_t \approx \ln(1 + \gamma_t s_{t-1}) \quad (5)$$

Assuming  $s_t \approx s_{t-1}$  and small  $\gamma_t s_{t-1}$ :

$$\Delta \ln w_t \approx \gamma_t s_{t-1} \quad (6)$$

Substituting Equation 1 into Equation 6 yields:

$$\Delta \ln w = \gamma \frac{\mu_h - \eta}{\sigma_h^2 R} \quad (7)$$

Following Shaw (1996), we assume that each investor has the same perceptions of returns to risky investments hence the term  $(\mu - r/\sigma_f^2)$  in Equation 2 is constant across individuals. Risk aversion  $R$  can thus be identified from Equation 2 and is an inverse function of the share of investments in risky assets  $\alpha$ . We can rewrite Equation 2 as  $\alpha = 1/bR$  where  $b = \sigma_f^2/\mu - r$  and substituting this into Equation 7 yields:

$$\Delta \ln w = b\alpha \left( \frac{\gamma(\mu_h - \eta)}{\sigma_h^2} \right) \quad (8)$$

The term  $\gamma(\mu_h - \eta)$  is equal to the productivity of human capital and can be restated as follows, adding  $i$  subscripts to indicate individuals:

$$\gamma_i(\mu_{hi} - \eta_i) = \mathbf{X}_i\beta + u_i \quad (9)$$

where  $X$  is an observed matrix of human capital and  $u_i$  represents measurement error in expected gains. A wage growth model can be estimated as follows:

$$\Delta \ln w_i = \frac{b\alpha_i}{\sigma_{hi}^2} (X_i\beta) + \varepsilon_i \quad (10)$$

where the error term is defined as  $\varepsilon_i = (b\alpha_i/\sigma_{hi}^2)u_i$  and so may not be homoscedastic.

Given that the matrix  $X$  contains human capital variables the intuition underlying Equation 10 is that those individuals who hold large shares of risky assets  $\alpha_i$  are less risk averse and so will invest in greater amounts of human capital, Shaw (1996).<sup>7,8</sup> It is apparent from Equation 10 that risk-taking as measured by  $\alpha_i$  will shift all estimated returns to human capital in the matrix  $X$  upwards by the amount  $(b/\sigma_{hi}^2)$  representing an intercept effect. Furthermore, risk preferences may also influence the returns to human capital by  $(b/\sigma_{hi}^2)\beta$  representing a slope effect. It is somewhat surprising to note that this second effect is largely ignored by Shaw (1996) especially since the overall effect of risk preferences stems from the combined impact of the slope and intercept effects. Both the intercept and slope effects of risk-preferences are shown in Figure 1 below.

<<FIGURE 1 HERE>>

We therefore aim to explore the determinants of real wage growth via non-linear least squares estimation given the nature of the functional form underlying Equation 10.

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<sup>7</sup> Similarly, Guiso *et al* (1996) recognise the influence of earnings risk on a household's demand for risky assets and report an inverse relationship between investment in risky assets and income risk. Moreover, it is apparent that income risk may be influenced by investment in human capital.

<sup>8</sup> Although the theoretical model predicts a positive association between risk loving behaviour and human capital investment, it is clearly important to explore the empirical validity of this ascertain. It may be the case for example that individuals who are risk averse are more likely to invest in human capital in order to safeguard their future, this provides some intuition to explain an inverse relationship.

### III. Data and Methodology

Given that the aim of this paper is to explore how interpersonal variation in risk preference affects human capital investment, we require panel data whereby the same individuals are tracked across time enabling us to determine the change in real wages experienced by individuals over time and, hence, wage growth at the individual level. Our data set is derived from four waves of the *BHPS* – 1995, 1996, 1998 and 2000. This is a random sample survey carried out by the *Institute for Social and Economic Research* of each adult member of a nationally representative sample of more than 5,000 private households (yielding approximately 10,000 individual interviews). For Wave one, interviews were conducted during the autumn of 1991. The same individuals are re-interviewed in successive waves - the latest available being wave ten in 2000. The main objective of the *BHPS* is ‘to further understanding of social and economic change at the individual and household level in Britain.’

We concentrate upon the 1995 wave since it is only in this year that individuals are asked detailed questions pertaining to investments held in risky assets such as shares and unit trusts which we use to construct our measure of risk preference.<sup>9</sup> We use information derived from the 1995 wave in order to determine how investments held in risky assets in 1995 affect estimated returns to human capital and hence wage growth over the periods 1995 to 1996, 1995-1998 and 1995-2000. To evaluate the impact of risk preference upon human capital investment we only require information on risk preference in the base year, 1995. Although, Equation 10 is a growth equation and so wages are differenced, all explanatory variables relate to the base year.

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<sup>9</sup> Banks *et al* (2002) use the 1995 and 2000 waves from the *BHPS* to provide a descriptive investigation of the distribution of financial wealth over the period.

We explore wage growth over three different time periods in order to ascertain the robustness of our risk proxy and in addition to determine whether it has a different impact over alternative wage growth horizons. The time periods we consider are as follows: first difference, 1995-1996; third difference, 1995-1998 and fifth difference 1995-2000. Our sample consists of individuals in employment aged between 16 and 65. We exclude the self-employed, agricultural workers and individuals with more than one job. After conditioning on individuals who have data responses on the investment questions which are of key interest to our study,<sup>10</sup> the sample sizes for the three growth periods are 3,105 for the first difference sample, 2,441 for the third difference sample and 2,294 for the fifth difference sample.

The dependant variable, the relevant difference in log real hourly wages according to the time period under investigation, is derived from usual gross pay per month from current job. The focus of the paper concerns the influence of risk preference on human capital formation and, consequently, wage growth. In order to measure risk preference, we follow Shaw (1996) and interact the risk preference of individuals with human capital accumulation, by replacing  $\alpha_i$  in Equation 10 with a proxy for risk aversion denoted by the variable *Asset*, which represents the proportion of net wealth held in investments.<sup>11</sup>

Our measure of risk aversion, *Asset*, is defined as follows:

$$Asset = \frac{Investments}{Investments + Savings + Windfalls} \quad (11)$$

Figures 2 to 7 present the distribution of *Asset* across our three growth samples for all

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<sup>10</sup> Note that those individuals who respond to the investment question in the *BHPS* may report zero investments, see below.

<sup>11</sup> Shaw (1996) also measures risk aversion via survey information whereby individuals were asked about their attitudes towards financial risk. Such information however is not available in the *BHPS*.

employees as well as for only those employees with positive asset shares. It is apparent from Figures 2, 3 and 4 (for all employees) that the large majority of employees have zero asset shares in accordance with the findings of Shaw (1996) for the U.S. We will explore whether the skewness of assets (as defined by Equation 11) towards a uniform mass point of zero impinges on our results in the following section.

<<FIGURES 2 TO 4 HERE>>

We are also able to control for the composition of investments in risky assets consisting of: Shares; Personal Equity Plans (PEPs); Unit Trusts and other investments (including government and company securities) given by  $Type_j$  where  $j=1...4$ . The reference group is risk free investments (comprising of Premium Bonds, National Savings and Building Society Accounts, and Tax Exempt Special Savings Accounts – TESSAs) plus no investments. Our split between risky and risk free investments is close to that of Georgarakos (2002).<sup>12</sup> Also included in the model apart from human capital variables are other controls, given in the matrix  $\mathbf{H}$ , and so we estimate the following model:

$$\Delta^d \ln w_i = \left( \pi Asset_i + \sum_{j=1}^4 \lambda_j Type_{ij} \right) \mathbf{X}_i \beta + \gamma' \mathbf{H}_i + \varepsilon_i \quad (12)$$

where  $d=1,3,5$  represents the length of the difference, so,  $\Delta^1 \ln w_i = \ln w_{i,1996} - \ln w_{i,1995}$ ,  $\Delta^3 \ln w_i = \ln w_{i,1998} - \ln w_{i,1995}$ , and  $\Delta^5 \ln w_i = \ln w_{i,2000} - \ln w_{i,1995}$ . The impact of risk preferences upon human capital thus stems from an intercept and slope effect,  $(\pi + \lambda_j)$  and  $\beta(\pi + \lambda_j)$  respectively.

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<sup>12</sup> Note that whilst Georgarakos (2002) considers asset ownership using the *Family Resource Survey* this dataset is cross sectional and so cannot be employed for the analysis herein, since to analyse wage growth we need information upon the same individuals over time.

Turning to the measures of human capital specified in the matrix,  $X$ , the *BHPS*, in contrast to the data set exploited by Shaw (1996), provides information on highest education qualifications rather than relying on a simple years of school index. We also control for labour market experience entered in a quadratic form as well as the extent of job turnover within the relevant sample period.

In addition, we are able to control for a host of key characteristics, entering the  $H$  matrix, which are likely to influence wage growth such as occupation, industrial affiliation and regional location (with 8, 8 and 10 categories respectively), as well as demographic characteristics such as gender, marital status and ethnicity. We are also able to control for other factors related to the job such as trade union membership and the type of employment contract held by the individual. The inclusion of the contract type captures the effects of other types of risk akin to the theoretical model of Caroli and Garca-Penalosa (2002). To summarise, the  $H$  matrix contains a much richer array of control variables than that specified by Shaw (1996).

Full summary statistics for all of the variables used in our empirical analysis for all three samples are presented in Table 1 below, with information in the first column stating where each variable is assigned in terms of the  $X$  or  $H$  matrix. Clearly across the different samples the average share of investments is around 21 per cent. Considering the composition of the asset variable, the commonest type of investment is in shares at approximately 17 per cent with other investments making up the smallest category. In terms of educational variables, the commonest educational qualification appears to be GCSE grades A-C at 24 per cent followed by further education and degrees at 22 per cent and 16 per cent respectively. The turnover variable is designed to capture how frequently an individual changes job and hence the effects of changes in firm specific human capital within the relevant sample period. In the first difference specification this

is a simple dummy variable where one denotes that an individual has changed job, so 34 per cent of individuals have changed job between 1995 and 1996. However, in the third and fifth difference samples the number of times an individual has changed job is specified.

<<TABLE 1 HERE>>

#### IV. Results

In all of the results which follow, the key coefficients of interest are shown in the shaded areas of Tables 2 to 6.<sup>13</sup> Table 2 below presents the results of estimating Equation 12, omitting controls for type of asset so  $\lambda_j = 0$ , across the three different wage growth horizons, whereby we allow for heterogeneity in risk aversion at the individual level.<sup>14,15</sup>

<<TABLE 2 HERE>>

The estimated coefficient on the asset variable, our measure of risk preference, which serves to shift the intercept (see Figure 1), is statistically significant and positive across each period, suggesting robustness of the results. The sign of the asset coefficient suggests that those individuals who are willing to take greater investments experience higher rates of wage growth. Such an effect serves to shift all estimated returns to human capital upwards by the amount  $(b/\sigma_{hi}^2)$  as discussed in Section II. Furthermore, it is apparent that the return to risk-taking increases monotonically across the growth horizons.

A striking feature from the results reported in Table 2 is that the returns to low education are larger than the returns to high education, although the returns to education

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<sup>13</sup> The controls in Tables 2 to 6 consist of industry, occupational and regional dummy variables, each jointly significant at the 1 per cent level.

<sup>14</sup> In order to allow for identification of the  $\pi$ ,  $\lambda$  and  $\beta$ 's, we normalise on the 'no education' category.

<sup>15</sup> For all of the results which follow, the error term  $\varepsilon_i = (b\alpha_i/\sigma_{hi}^2)u_i$  (see Section II) has to be tested for heteroscedasticity where throughout the null hypothesis of homoscedasticity cannot be rejected at the 1 per cent level.

are positive for all levels of educational attainment. The estimated coefficients on the educational attainment variables represent the second effect stemming from risk interactions, as discussed in Section II above, where the returns to human capital are influenced by attitudes towards risk. The joint intercept and slope effects as depicted in Figure 8 are given by  $(1 + \beta)(b/\sigma_{hi}^2)$ , which is equal to  $(1 + \hat{\beta})\hat{\pi}$  in terms of Equation 12. The intercept effect is depicted by the gap between the two parallel dotted lines, whilst the slope effects indicated by the estimated coefficients on the educational attainment dummy variables are depicted by the two solid lines.

<<FIGURE 8 HERE>>

When interpreting the results, it is important to acknowledge that this is not a wage equation but a wage growth model and also that the returns to education are in effect non-linear interactions with the individual risk preference variable. The returns from human capital investment for risk lovers who initially have relatively low levels of educational attainment are greater than that for those with relatively high levels of educational attainment, for instance GCSE versus Degree. This may reflect the fact that those with low educational attainment are willing to take greater risks or that they have greater scope for investment in human capital.<sup>16</sup>

Similarly, when one interprets the experience terms, which are interacted with risk preference, it is important to acknowledge that we are estimating a wage growth

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<sup>16</sup> To explore these issues more fully we split our sample into a high education group (degree and further education only) and a low education group (A level and below), yielding sample sizes of 877 and 1,417 respectively. We then estimate Equation 12 for the fifth difference wage growth period for each sample separately. To allow identification the omitted categories are ‘further’ and ‘no education’ respectively.

	<u>Degree</u>	<u>A level</u>	<u>GCSE A-C</u>	<u>GCSE &lt;C</u>
High	0.999    12%	-	-	-
Low	-	1.029    9%	1.280    18%	1.807    27%

The results along with the percentage change in coefficient compared to column 1 Table 2 are summarised above, with all coefficients shown significant at the 5 per cent level or above. It is apparent that the greatest percentage change is for the lower education group, thus confirming our *a priori* expectations that those with the lower levels of educational attainment are faced with greater scope for investment in human capital.

model. Hence, our results imply that the returns to risk-taking diminish as experience increases. It is surprising to note that the estimated coefficient on the turnover variable which captures the effect of job moving on wage growth, is positive yet insignificant.

Turning to the variables entering the  $H$  matrix, males appear to experience higher wage growth than females. The quality of education captured by the private education dummy variable is insignificant. Immigrants have significantly greater wage growth in the first and third difference models whilst married individuals experience lower wage growth which is generally significant across the three time horizons. In accordance with Shaw (1996), trade union membership impacts negatively on wage growth. We also investigate whether having a permanent contract impinges upon wage growth. This variable may also be capturing attitudes towards risk following the argument put forward by Caroli and Garca-Penalosa (2002). We discover, however, that this variable only exerts a significant negative effect in the third difference specification, which may reflect the length of fixed term contracts. Finally, our results suggest that firm size impacts in a positive yet diminishing fashion on wage growth.<sup>17</sup>

### *Robustness*

In order to explore the strength of our findings, we undertake a number of robustness tests. Initially, we consider whether the composition of the investments affects our findings. It is clear from the results of this exercise, which are shown in Table 3, that our findings do not alter significantly. To be specific, the asset variable is characterized by a positive and significant coefficient across all three time horizons, in terms of Figure 1 implying a positive intercept shift, and increases monotonically across time. In addition, over the five-year period, shares, PEPs and unit trusts play a role in explaining wage

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<sup>17</sup> We have explored incorporating measures of general human capital in the  $H$  matrix despite the fact that the theoretical model of Section II does not encapsulate this. The inclusion of such variables does not substantially alter our findings.

growth, which is apparent over the other time horizons but at a lower level of significance (10 per cent). The joint intercept and slope effects are given by  $(1 + \hat{\beta})(\hat{\tau} + \hat{\lambda}_j)$ .

<<TABLE 3 HERE>>

Unfortunately, the *BHPS* does not provide information on the amount of investments held in risky assets, only an overall investment holding. Another way to attempt to circumvent this problem, apart from introducing composition controls as above, is to interact the composition variables with the asset share, in effect estimating the following:

$$\Delta^d \ln w_i = \sum_{j=1}^4 \theta_j (Asset_i \times Type_{ij}) \mathbf{X}_i \beta + \gamma' \mathbf{H}_i + \varepsilon_i \quad (13)$$

The results are shown in Table 4 below all based upon fifth differences, i.e.  $d=5$ .<sup>18</sup> Initially in the first column we estimate Equation 13 where we find that the asset-share interaction is significant – implying a positive intercept shift in terms of Figure 1 given by  $\hat{\theta}_j$ . This positive intercept shift is only occurring through the asset-share interaction, which arguably represents the most risky investment available to the individual.

There is also evidence of risk-preferences influencing the returns to human capital i.e. a slope effect given by  $\hat{\theta}_j \hat{\beta}$  since all human capital interactions are significant. Again it is clear that the returns from human capital investment for risk lovers who initially have relatively low levels of educational attainment are greater than that for those with relatively high levels of educational attainment.

<<TABLE 4 HERE>>

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<sup>18</sup> We have also experimented with wage growth equations over different difference horizons but our results did not change dramatically and so for the sake of brevity are omitted, but available upon request from the authors.

A potential problem with the estimates so far is that one could argue that we are simply picking up an income effect. That is, those individuals who hold assets have higher wages and so experience greater wage growth. For instance, if wage growth is correlated with high levels of income, and high income individuals are risk takers, then the impact of risk attitudes upon wage growth could simply imply a wage-income correlation rather than a relationship between risk and wage growth. This is essentially a problem of endogeneity bias. We would argue against this however, on the grounds that we enter risk-preferences in levels into a wage growth, i.e. differenced, equation. Hence we are not estimating a relationship between the change in asset share (potentially an income effect) and wage growth. Another way to address this problem is to instrument the asset variable. To do this we regress the investment share upon a quadratic in age, human capital and income variables (the results are shown in Table A1 in the appendix). We then take the predicted values from this model and estimate Equation 12, without composition effects so  $\lambda_j = 0$ . The results are shown in the second column of Table 4. Interestingly the instrumented asset variable has a negative sign, which in terms of Figure 1, suggests a negative intercept effect  $\hat{\pi} < 0$ , i.e. at zero human capital accumulation the wage growth of the risk averse is greater than that of risk lovers. However, when considering the human capital interactions the results suggest that there are positive slope effects from risk taking behaviour, again with evidence of lower returns for high education groups *vis à vis* low education attainment. In the final column of Table 4, we estimate Equation 13 but with the investment variable instrumented. Generally our findings are consistent with those as described above in that there is a positive intercept shift as well as significant and positive slope effects.

The fourth robustness check concerns the definition of net worth used in *Asset* which largely follows that of Shaw (1996) who in turn bases this definition on Friend

and Blume (1975). It is important to note, however, that in their analysis of risky assets, Friend and Blume (1975) include liabilities to net worth. Such liabilities are not incorporated in the analysis of Shaw (1996). Hence, in the following set of results, we attempt to control for the level of debt reported by the individual. The results of this exercise are shown in Table 5.

<<TABLE 5 HERE>>

In order to control for the effects of individuals' debt, initially in the first column of Table 5 we replicate the first column of Table 2, based upon Equation 12, but add log debt as a control. Interestingly, the investment share and debt variable enter with opposite signs, although the net intercept effect in terms of Figure 1 is positive. The slope effects are also positive and significant with those individuals with higher investment shares experiencing larger returns to human capital. The second and third columns of Table 5 replicate those of column one Table 3 (composition effects) and the first column of Table 4 (risky asset interactions). Again, our results show that even when allowing for debt, investment composition and risky asset interactions, the risk preferences of individuals exert a positive effect acting through both intercept and slope changes. The only exception is in the final column of Table 5 where the risk-composition interactions all display insignificant intercept effects at the 5 per cent level but positive and significant slopes effects with respect to the education attainment variables.

As mentioned in Section III, a further potential problem with our measure of risk is that the large majority of employees have zero asset shares. We now explore whether this skewness towards the uniform mass point of zero for assets impinges upon the results presented thus far. Restricting our sample to those employees reporting positive asset shares yields a sample size of 667.

<<FIGURES 5 TO 7 HERE>>

The distributions of the asset variable across each of the three time horizons are depicted in Figures 5 to 7. The focus is upon the asset and composition interactions as these are most likely to be capturing risk preferences. We replicate the fifth difference results presented in Table 4 column one for those reporting positive asset shares estimating Equation 13 with the results shown in first column of Table 6, below. The asset and risky investment interactions are all characterised by positive coefficients, although these intercept effects are only significant at the 10 per cent level for asset-shares and asset-peps. Interestingly, the interactions with the educational attainment variables are now relatively larger with the exception of the ‘other’ category, implying larger slope effects, i.e. individuals with positive asset shares have greater returns to human capital when interacted with risk-composition effects.

<<TABLE 6 HERE>>

Following Shaw (1996), we consider the proposition that individuals with positive turnover, i.e. job-movers, are relatively more risk loving than those who stay in the same firm. In order to explore this issue, we restrict our sample to those with positive turnover over the five-year period yielding 775 observations. Our results, based upon Equation 13, are presented in the second column of Table 6, and show that the asset-composition interactions (capturing the ‘intercept effects’) are all insignificant apart from that of shares – arguably the riskiest asset, which is much larger and significantly different to its counterpart shown in column one Table 4. Turning to the slope effects, the returns to education are all significant and noticeably smaller than those reported in column one Table 4. The findings suggest that the risk preferences of these individuals are biased in favour of risk-loving behaviour in terms of the intercept effect, in accordance with Shaw’s findings, but surprisingly the slope effects do not

support this hypothesis. Rather our findings suggest the relationship depicted in Figure 9 whereby the intercept for job movers is higher than that for all individuals (stayers and movers) – two possible shifts are depicted. Furthermore, it is apparent from the diagram that the slope for the job movers is relatively shallow as suggested by our empirical findings.

<<FIGURE 9 HERE>>

The final issue that we address concerns a key assumption underlying the theoretical model of Section II where attitudes towards risk in period  $t$  (1995) are assumed to reflect an individual's preferences at the time of human capital accumulation which may have occurred at some period  $t-h$ . It is surprising that Shaw (1996) does not allude to this concern. The problem is exacerbated as our risk measure in 1995 akin to that of Shaw coincides with human capital already accumulated. One way in which this problem could be circumvented is if risk preference at the time of the human capital investment is time invariant. Modelling the decision to hold risky assets, following Guiso *et al* (1996), when we regress the asset share against income, education, and age entered in quadratic form, the age terms are insignificant.<sup>19</sup> This finding suggests that risk preferences may be time invariant and is consistent with the findings for the USA, see Halisassos and Bertaut (1995). Although these findings do appear to justify our methodology, we subject our analysis to further scrutiny by exploring the influence of recent investments in human capital.

To be specific, our proxy for risk preference relates to investment in risky assets in 1995, hence we explore the effect of human capital investment at the same point in time. This is particularly important as educational attainment may reflect human capital

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<sup>19</sup> The age terms only become significant when income is dropped, which suggests that the quadratic in age may just be picking up an income effect i.e. older people have higher incomes and this is correlated with assets. This is the equation we used above to allow instrumentation of the asset variable – the results are shown in Table A1 in the appendix.

investments made sometime ago. To do this we include a dummy variable to capture whether an individual has had recent employer training to increase/enhance skills and also a variable representing the number of days of non-employer training. We also control for increases in highest educational attainment at 1995 whereby we distinguish between ‘small’ changes (one or two upward movements in the education hierarchy) and ‘large’ changes (more than two upward movements in the education hierarchy). The results are presented in the final column of Table 6, where we estimate a model of the form shown in Equation 13. It is apparent that the asset-share interaction is significant as found above, once again suggesting a positive intercept effect. There is still clearly a role for risk preferences to influence the returns to human capital. These effects are all significant at the 5 per cent level, excluding the returns to A levels, and robust to the inclusion of recent human capital accumulation. Interestingly, employer training effects which represent recent human capital investment are negative. This may be picking up the fact that individuals receive training at the start of their career and moreover during such training periods wage growth may be relatively low.

## **V. Conclusion**

In this paper, we have explored how interpersonal variation in risk preference affects human capital investment and, hence, wage growth. We have investigated the link between risk preference and wage growth using data from four waves of the *BHPS*. In general, our findings suggest that those individuals who are willing to take greater risks receive higher rates of wage growth. Moreover, we have found that this result is particularly robust in terms of both changes to the underlying empirical specification as well as changes to the sample of individuals analysed.

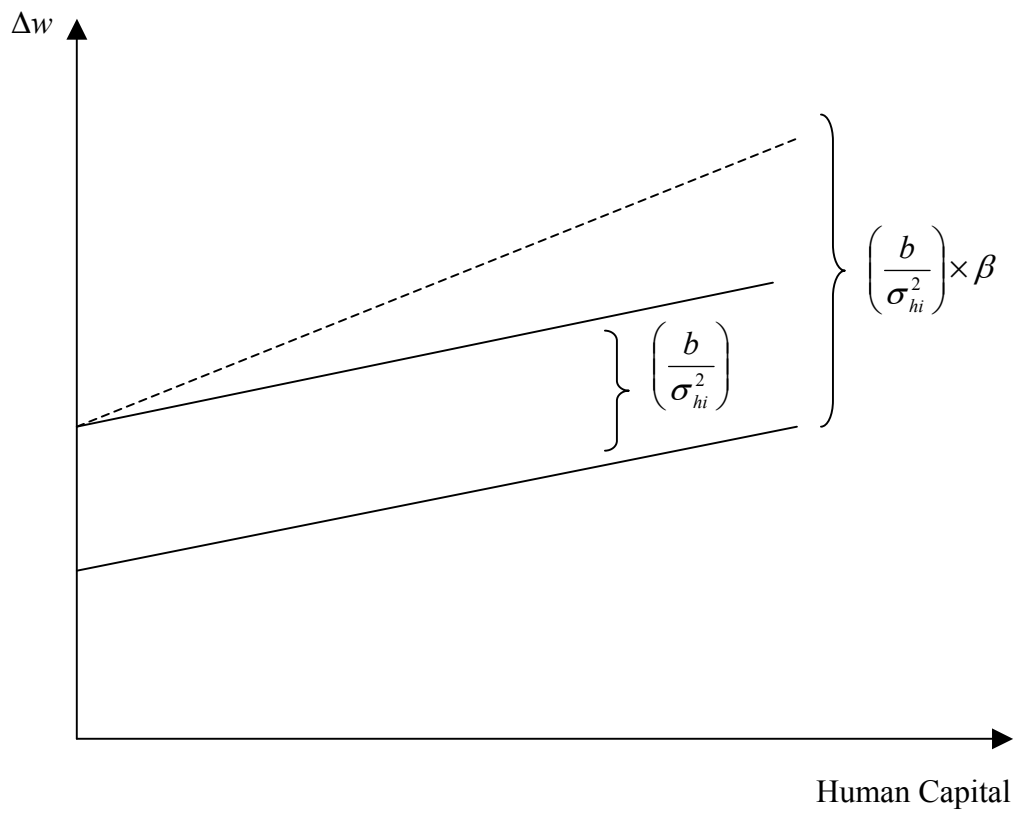
To date, there has been a distinct lack of empirical research in this area in spite of the finding that risk aversion exerts a moderating influence on wage growth. This should be of key interest to policy makers, since our findings suggest that the presence of risk aversion may deter individuals from investing in human capital. This could serve to erode productivity and hence may exert adverse effects on economic growth. Furthermore, our findings may have implications for income distribution – if risk preference and wage growth are correlated, then the variability of risk preference and changes in the composition of assets over time (see Banks *et al*, 2002) should impact upon the distribution of income. Given the importance of such findings for policymaking, it is surprising that there is a distinct lack of research in this area. Hopefully our findings may serve to stimulate further research on the relationship between risk preference, human capital accumulation and wage growth.

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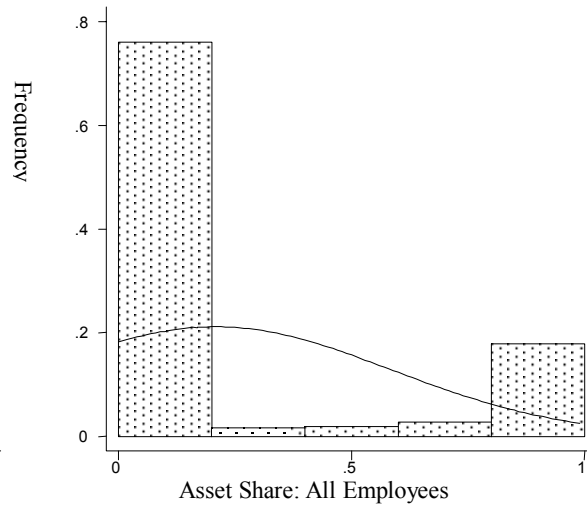
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**Figure 1:** Theoretical impact of risk attitudes upon returns to education





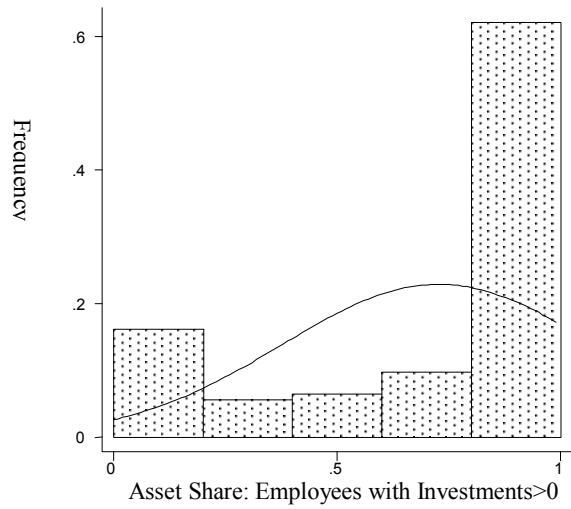
**Figure 2:** Asset Distribution: 5<sup>th</sup> Difference



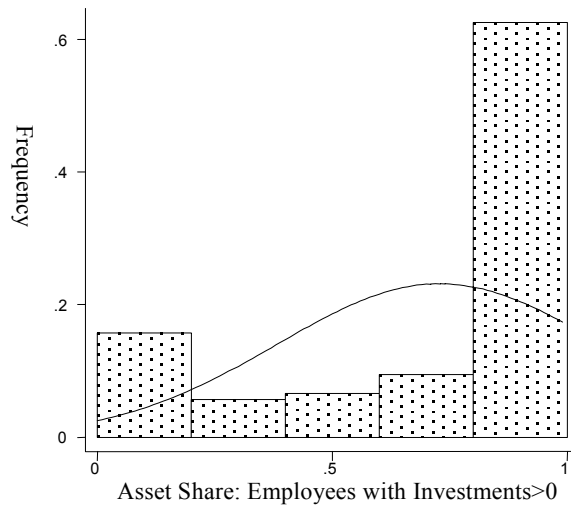
**Figure 3:** Asset Distribution: 3<sup>rd</sup> Difference



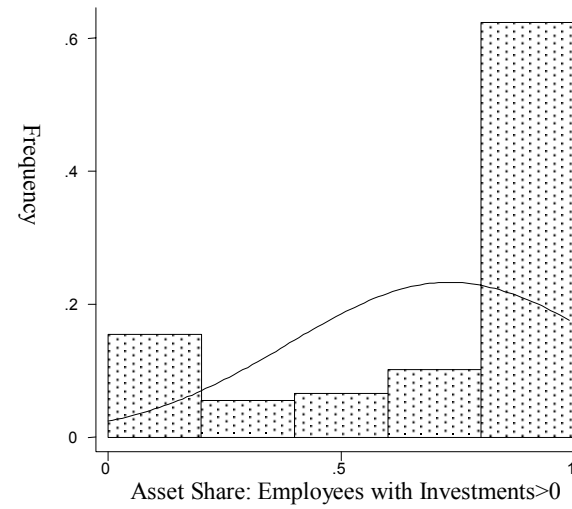
**Figure 4:** Asset Distribution: 1<sup>st</sup> Difference



**Figure 5:** Asset Distribution: 5<sup>th</sup> Difference

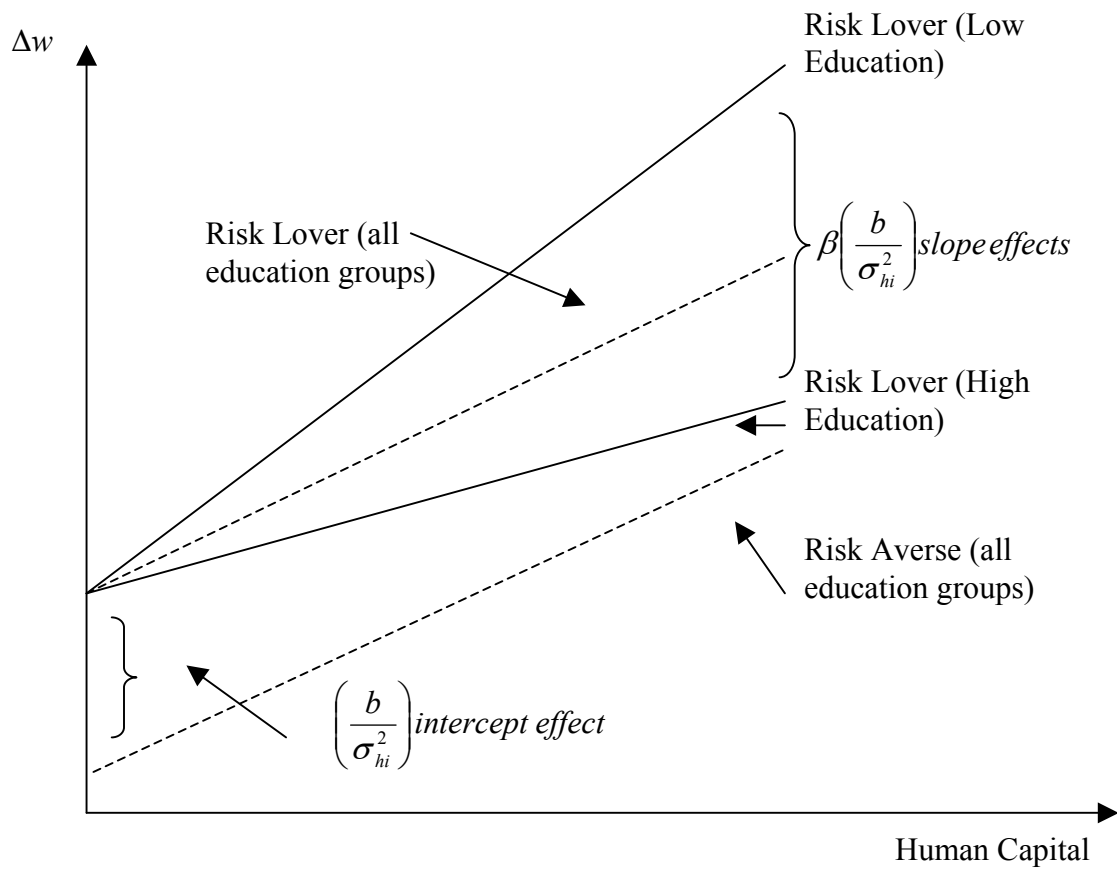


**Figure 6:** Asset Distribution: 3<sup>rd</sup> Difference

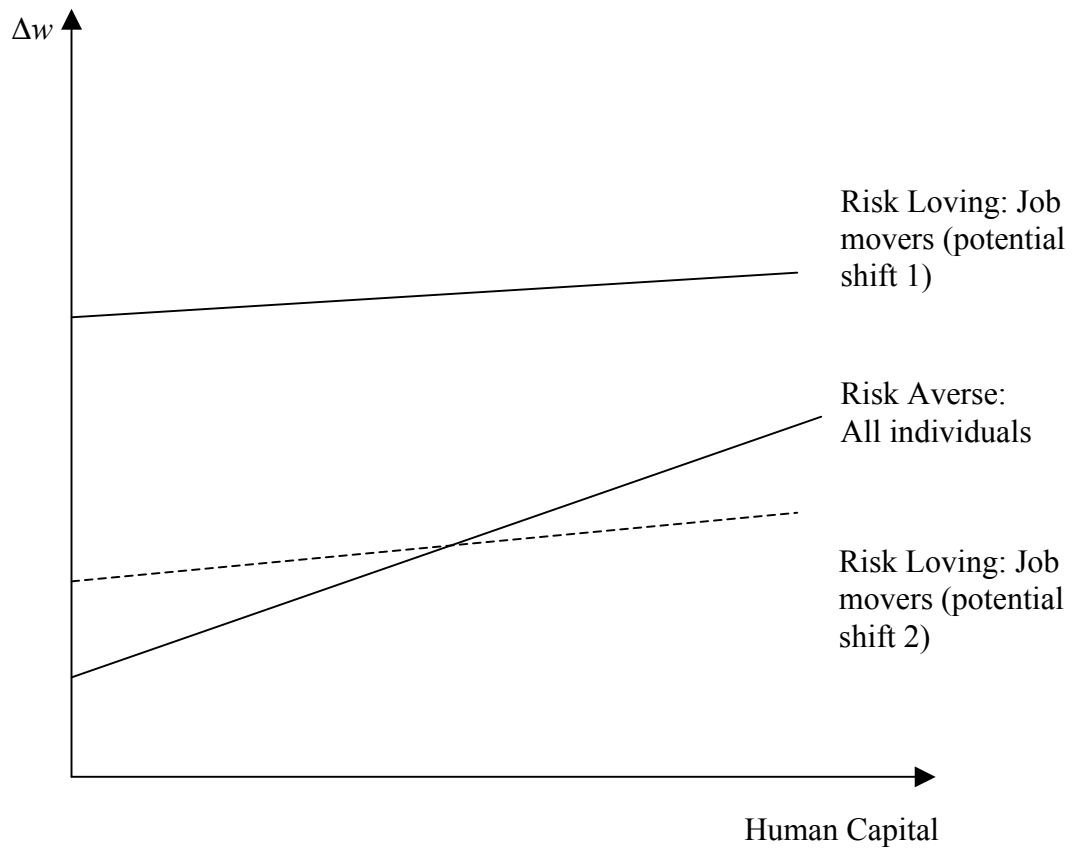


**Figure 7:** Asset Distribution: 1<sup>st</sup> Difference

**Figure 8:** The impact of risk attitudes upon returns to education



**Figure 9:** The impact of risk attitudes upon returns to education: Job movers 'v' stayers



**TABLE 1: Summary Statistics**

		5 <sup>TH</sup> DIFFERENCE			3 <sup>RD</sup> DIFFERENCE			1 <sup>ST</sup> DIFFERENCE		
		<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>
<b>ΔW</b>	Log wage growth	0.1437	-2.1707	2.3493	0.0811	-2.1655	3.3347	0.0337	-2.2742	2.669
<b>X</b>	Asset	0.2117	0	1	0.2084	0	1	0.2071	0	1
<b>X</b>	Log Debt	-5.8861	-18.4207	10.6522	-	-	-	-	-	-
<b>X</b>	Shares	0.1792	0	1	0.1728	0	1	0.1729	0	1
<b>X</b>	PEP	0.0654	0	1	0.0684	0	1	0.0689	0	1
<b>X</b>	Unit Trust	0.0414	0	1	0.0430	0	1	0.0441	0	1
<b>X</b>	Other Investment	0.0292	0	1	0.0238	0	1	0.0271	0	1
<b>X</b>	Experience	23.9425	2	50	24.444	2	57	24.728	3	57
<b>X</b>	Experience Squared/10	69.1342	1	250	72.826	1	325	75.318	1	325
<b>X</b>	Turnover	1.3001	0	6	1.5422	0	5	0.3449	0	1
<b>X</b>	Degree	0.1622	0	1	0.1536	0	1	0.1623	0	1
<b>X</b>	Further Education	0.2201	0	1	0.2204	0	1	0.2113	0	1
<b>X</b>	A Level	0.1417	0	1	0.1381	0	1	0.1356	0	1
<b>X</b>	GCSE grades A-C	0.2419	0	1	0.2392	0	1	0.2351	0	1
<b>X</b>	GCSE grades <C	0.0488	0	1	0.0537	0	1	0.0473	0	1
<b>X</b>	Other Qualification	0.0497	0	1	0.0442	0	1	0.0489	0	1
<b>X</b>	No Qualifications	0.1356	0	1	0.1487	0	1	0.1568	0	1
<b>X</b>	Employer Training	0.0802	0	1	-	-	-	-	-	-
<b>X</b>	Non-Employer Training	0.3801	0	40	-	-	-	-	-	-
<b>X</b>	Education Change 1	0.5192	0	1	-	-	-	-	-	-
<b>X</b>	Education Change 2	0.1478	0	1	-	-	-	-	-	-
<b>H</b>	Male	0.5078	0	1	0.5031	0	1	0.4969	0	1
<b>H</b>	Private	0.0567	0	1	0.0549	0	1	0.0554	0	1
<b>H</b>	White	0.9690	0	1	0.9644	0	1	0.9701	0	1
<b>H</b>	Immigrant	0.0462	0	1	0.0537	0	1	0.0493	0	1
<b>H</b>	Married	0.7576	0	1	0.7587	0	1	0.7424	0	1
<b>H</b>	Trade Union	0.3418	0	1	0.3449	0	1	0.3339	0	1
<b>H</b>	Firm Size 1-24	0.2847	0	1	0.2868	0	1	0.2937	0	1
<b>H</b>	Firm Size 25-99	0.2650	0	1	0.2642	0	1	0.2612	0	1
<b>H</b>	Firm Size 100-499	0.2668	0	1	0.2671	0	1	0.2651	0	1
<b>H</b>	Permanent	0.9477	0	1	0.9501	0	1	0.9485	0	1
	Observations		2,294			2,441			3,105	

**TABLE 2: Wage Growth across different time horizons**

	5 <sup>TH</sup> DIFFERENCE			3 <sup>RD</sup> DIFFERENCE			1 <sup>ST</sup> DIFFERENCE		
Asset	0.4919	***	(3.68)	0.3429	***	(3.15)	0.1735	**	(2.25)
Experience	-0.0729	***	(6.25)	-0.0469	***	(3.80)	-0.0705	***	(3.63)
Experience squared	0.0104	***	(4.32)	0.0051	**	(1.94)	0.0111	***	(2.85)
Turnover	0.0018		(0.17)	0.0708		(1.10)	0.2789		(1.26)
Degree	0.8927	***	(6.13)	0.5988	***	(3.33)	0.7854	***	(3.21)
Further	0.8893	***	(6.41)	0.6175	***	(3.58)	1.0015	***	(3.84)
A level	0.9447	***	(6.03)	0.8473	***	(4.41)	0.8983	***	(3.20)
GCSE grades A-C	1.0898	***	(6.90)	0.9336	***	(5.42)	0.9479	***	(3.87)
GCSE grades <C	1.4186	***	(4.45)	0.7763	***	(2.40)	0.6535	*	(1.31)
Other qualification	0.9456	***	(4.50)	0.8440	***	(3.46)	0.9639	***	(3.87)
Male	0.0372		(2.02)	0.0020		(0.13)	0.0237		(2.02)
Private education	0.0024		(0.07)	0.0399		(1.28)	0.0061		(0.27)
White	0.0910		(2.25)	0.1108		(3.28)	-0.0015		(0.06)
Immigrant	0.0296		(0.72)	0.0696		(2.09)	0.0533		(2.12)
Married	-0.0884		(4.69)	-0.0357		(2.19)	-0.0055		(0.47)
Trade union	-0.0878		(4.63)	-0.0582		(3.53)	-0.0134		(1.10)
Firm Size 1-24	0.0927		(3.75)	0.0808		(3.77)	0.0203		(1.30)
Firm Size 25-99	0.0660		(2.72)	0.0584		(2.76)	0.0079		(0.51)
Firm Size 100-499	0.0470		(1.96)	0.0437		(2.08)	-0.0019		(0.12)
Permanent contract	-0.0066		(0.20)	-0.0640		(2.19)	-0.0243		(1.13)
Controls		yes			yes			yes	
Observations		2,294			2,441			3,105	
Adjusted R squared		0.1659			0.0877			0.0213	

\*\*\*, \*\*, \* denotes 1, 5 and 10 per cent significance respectively shown only for intercept and slope coefficients

**TABLE 3: Wage Growth across different time horizons plus type of investment**

	5 <sup>TH</sup> DIFFERENCE			3 <sup>RD</sup> DIFFERENCE			1 <sup>ST</sup> DIFFERENCE		
Asset	0.2833	***	(2.36)	0.2406	***	(2.80)	0.1533	**	(1.88)
Shares	0.2443	***	(2.33)	0.1270	*	(1.34)	0.0829	*	(1.40)
PEPs	0.2539	**	(1.81)	0.1885	*	(1.43)	0.1063	*	(1.33)
Unit Trust	0.3132	**	(1.72)	-0.2913	**	(1.75)	-0.0735		(0.85)
Other Investment	-0.0031		(0.02)	0.0402		(0.23)	-0.1301		(1.25)
Experience	-0.0799	***	(6.21)	-0.0507	***	(4.50)	-0.0669	***	(3.01)
Experience squared	0.0118	***	(4.93)	0.0062	***	(2.58)	0.0105	***	(2.36)
Turnover	-0.1335	*	(1.38)	0.1182		(1.14)	0.3107		(1.14)
Degree	0.9854	***	(6.27)	0.6409	***	(4.05)	0.4682	*	(1.54)
Further	0.9933	***	(6.53)	0.5984	***	(3.83)	1.0107	***	(3.27)
A level	1.0452	***	(6.12)	0.6749	***	(3.97)	0.7568	***	(2.39)
GCSE grades A-C	1.0930	***	(6.55)	0.9233	***	(5.90)	1.0638	***	(3.37)
GCSE grades <C	1.6133	***	(4.66)	0.5983	**	(2.19)	0.4231		(0.67)
Other qualification	0.9177	***	(4.21)	0.8595	***	(3.96)	1.0317	***	(2.51)
Male	0.0387		(2.10)	0.0048		(0.31)	0.0246		(2.10)
Private education	0.0059		(0.17)	0.0442		(1.42)	0.0061		(0.27)
White	0.0968		(2.39)	0.1129		(3.35)	0.0010		(0.04)
Immigrant	0.0314		(0.76)	0.0669		(2.01)	0.0562		(2.24)
Married	-0.0901		(4.79)	-0.0341		(2.08)	-0.0071		(0.60)
Trade union	-0.0888		(4.69)	-0.0563		(3.42)	-0.0141		(1.17)
Firm Size 1-24	0.0920		(3.72)	0.0819		(3.81)	0.0204		(1.30)
Firm Size 25-99	0.0684		(2.82)	0.0593		(2.80)	0.0066		(0.43)
Firm Size 100-499	0.0500		(2.08)	0.0468		(2.23)	-0.0001		(0.01)
Permanent contract	-0.0041		(0.12)	-0.0681		(2.34)	-0.0252		(1.17)
Controls		yes			yes			yes	
Observations			2,294			2,441			3,105
Adjusted R squared			0.1700			0.0875			0.0219

\*\*\*, \*\*, \* denotes 1, 5 and 10 per cent significance respectively shown only for intercept and slope coefficients

**TABLE 4: Wage Growth in 5<sup>th</sup> Differences Robustness checks: Interactions and instrumentation**

	RISKY ASSET INTERACTIONS			INSTRUMENTED ASSET			INSTRUMENTED RISKY ASSET INTERACTIONS		
Asset		-		-0.8744	***	(2.71)		-	
Asset×Shares	0.3381	**	(1.75)		-		0.7682	*	(1.44)
Asset×PEPs	0.2201		(1.19)		-		0.6633	*	(1.41)
Asset×Unit Trust	-0.1265		(0.70)		-		0.3704		(0.97)
Asset×Other Investment	0.1204		(0.54)		-		-0.2343		(0.49)
Experience	-0.0742	***	(3.15)	-0.0611	*	(1.53)	-0.1109	**	(2.05)
Experience squared	0.0099	**	(2.16)	0.0094	*	(1.46)	0.0169	**	(1.96)
Turnover	-0.2041		(0.94)	0.2559	**	(1.65)	-0.7250	*	(1.42)
Degree	1.0174	***	(3.21)	0.2377		(1.01)	1.3798	**	(2.14)
Further	0.8327	***	(3.02)	0.4437	**	(2.24)	1.3629	**	(2.19)
A level	0.7520	***	(2.61)	0.5182	***	(2.68)	1.3256	**	(2.13)
GCSE grades A-C	1.2711	***	(3.23)	0.5293	***	(2.95)	1.3429	**	(2.18)
GCSE grades <C	1.7652	***	(2.38)	1.6408	***	(3.67)	2.6215	***	(2.60)
Other qualification	1.1218	***	(2.43)	1.1339	***	(4.39)	0.9564	**	(1.68)
Male	0.0419		(2.26)	0.0583		(3.23)	0.0444		(2.41)
Private education	-0.0013		(0.04)	0.0066		(0.20)	0.0069		(0.20)
White	0.0883		(2.17)	0.2299		(5.72)	0.0962		(2.38)
Immigrant	0.0277		(0.67)	0.1371		(3.40)	0.0341		(0.83)
Married	-0.0943		(5.01)	-0.0657		(3.59)	-0.0957		(5.09)
Trade union	-0.0871		(4.57)	-0.0752		(4.13)	-0.0910		(4.82)
Firm Size 1-24	0.0938		(3.76)	0.0883		(3.73)	0.0891		(3.60)
Firm Size 25-99	0.0678		(2.77)	0.0709		(3.06)	0.0682		(2.81)
Firm Size 100-499	0.0479		(1.98)	0.0593		(2.58)	0.0489		(2.03)
Permanent contract	-0.0064		(0.19)	0.0447		(1.39)	0.0006		(0.02)
Controls		yes			yes			yes	
Observations		2,294			2,294			2,294	
Adjusted R squared		0.1587			0.2399			0.1715	

\*\*\*, \*\*, \* denotes 1, 5 and 10 per cent significance respectively shown only for intercept and slope coefficients

**TABLE 5: Wage Growth in 5<sup>th</sup> Differences Robustness checks: Controlling for debt, composition and interactions**

	DEBT CONTROL			DEBT AND COMPOSITION			RISKY ASSET INTERACTIONS		
Asset	0.4481	***	(4.44)	0.3189	***	(2.89)		-	
Debt	-0.0176	***	(5.70)	-0.0169	***	(5.58)	-0.0176	***	(5.72)
Shares		-		0.2016	**	(1.79)		-	
PEPs		-		0.1435		(0.87)		-	
Unit Trust		-		0.2250		(1.10)		-	
Other Investment		-		0.0882		(0.41)		-	
Asset×Shares		-			-		-0.0085		(0.05)
Asset×PEPs		-			-		-0.3092	*	(1.29)
Asset×Unit Trust		-			-		-0.1396		(0.51)
Asset×Other Investment		-			-		-0.0334		(0.11)
Experience	-0.0594	***	(9.30)	-0.0629	***	(10.10)	-0.0558	***	(8.72)
Experience squared	0.0076	***	(5.28)	0.0085	***	(6.30)	0.0068	***	(4.53)
Turnover	-0.0062		(0.10)	-0.0357		(0.61)	0.0154		(0.24)
Degree	0.7836	***	(9.10)	0.8203	***	(9.88)	0.7478	***	(8.57)
Further	0.8428	***	(10.38)	0.8659	***	(11.02)	0.8209	***	(10.07)
A level	0.8762	***	(9.96)	0.9124	***	(10.60)	0.8496	***	(9.68)
GCSE grades A-C	1.0103	***	(11.86)	1.0112	***	(12.12)	0.9865	***	(11.79)
GCSE grades <C	1.1419	***	(7.61)	1.2066	***	(8.01)	1.1097	***	(7.58)
Other qualification	0.8459	***	(6.83)	0.8391	***	(6.92)	0.8419	***	(6.91)
Male	0.0341		(1.87)	0.0348		(1.90)	0.0329		(1.80)
Private education	0.0057		(0.16)	0.0072		(0.21)	0.0036		(0.10)
White	0.0735		(1.82)	0.0765		(1.90)	0.0748		(1.85)
Immigrant	0.0313		(0.77)	0.0317		(0.78)	0.0308		(0.76)
Married	-0.0607		(3.20)	-0.0626		(3.29)	-0.0599		(3.15)
Trade union	-0.0878		(4.70)	0.0878		(4.69)	-0.0883		(4.72)
Firm Size 1-24	0.0921		(3.77)	0.0931		(3.80)	0.0904		(3.68)
Firm Size 25-99	0.0667		(2.78)	0.0686		(2.86)	0.0653		(2.72)
Firm Size 100-499	0.0482		(2.03)	0.0503		(2.12)	0.0463		(1.95)
Permanent contract	-0.0005		(0.02)	0.0003		(0.01)	-0.0001		(0.01)
Controls		yes			yes			yes	
Observations		2,294			2,294			2,294	
Adjusted R squared		0.1858			0.1863			0.1849	

\*\*\*, \*\*, \* denotes 1, 5 and 10 per cent significance respectively shown only for intercept and slope coefficients

**TABLE 6: Wage Growth in 5<sup>th</sup> Differences Robustness checks: Positive assets, movers and human capital changes**

	POSITIVE ASSET SHARE			JOB MOVERS			RECENT HUMAN CAPITAL		
Asset×Shares	0.2254	*	(1.54)	1.8624	***	(3.15)	0.7263	**	(2.21)
Asset×PEPs	0.3295	*	(1.45)	0.0034		(0.01)	0.3482		(1.11)
Asset×Unit Trust	0.3403		(1.24)	0.9475		(0.99)	-0.1943		(0.58)
Asset×Other Investment	-0.2043		(0.84)	-0.2671		(0.27)	0.1481		(0.37)
Employer Training		-			-		-0.5252	***	(2.33)
Non-Employer Training		-			-		-0.0223		(0.17)
Education change 1		-			-		0.0976		(0.75)
Education change 2		-			-		0.0196		(1.07)
Experience	-0.1106	***	(2.54)	-0.0559	***	(4.46)	-0.0342	**	(1.92)
Experience squared	0.0180	***	(2.37)	0.0088	***	(3.46)	0.0045	*	(1.41)
Turnover	-0.3336	*	(1.35)		-		-0.1103		(1.05)
Degree	1.5304	***	(2.55)	0.6464	***	(4.35)	0.4469	**	(1.97)
Further	1.4845	***	(2.60)	0.7282	***	(4.38)	0.3854	**	(1.81)
A level	1.3439	***	(2.64)	0.4816	***	(2.95)	0.3359	*	(1.43)
GCSE grades A-C	1.4671	***	(2.64)	0.7839	***	(4.59)	0.6074	***	(2.37)
GCSE grades <C	2.4989	**	(2.01)	0.9001	***	(3.88)	0.8586	**	(2.29)
Other qualification	0.8092	*	(1.60)	0.8885	***	(3.71)	0.7790	***	(3.36)
Male	0.0308		(0.87)	0.0483		(1.28)	0.0423		(2.29)
Private education	0.0297		(0.57)	0.0071		(0.09)	-0.0012		(0.03)
White	0.1303		(1.50)	0.0759		(0.96)	0.0889		(2.18)
Immigrant	0.0816		(1.05)	0.0049		(0.07)	0.0241		(0.58)
Married	-0.0754		(2.04)	-0.1388		(3.73)	-0.0944		(5.00)
Trade union	-0.0681		(1.94)	-0.1604		(3.44)	-0.0883		(4.63)
Firm Size 1-24	0.0329		(0.72)	0.1436		(2.51)	0.0932		(3.74)
Firm Size 25-99	0.0439		(0.95)	0.0862		(1.50)	0.0672		(2.72)
Firm Size 100-499	0.0645		(1.48)	0.0137		(0.24)	0.0461		(1.91)
Permanent contract	0.1689		(2.30)	0.0259		(0.44)	-0.0057		(0.17)
Controls		yes			yes			yes	
Observations		667			775			2,294	
Adjusted R squared		0.1186			0.2218			0.1590	

\*\*\*, \*\*, \* denotes 1, 5 and 10 per cent significance respectively shown only for intercept and slope coefficients

**Table A1: Asset share model**

	COEFFICIENT		T STATISTIC
Intercept	-0.2885	***	(2.48)
Age	0.0087		(1.23)
Age Squared	-0.0001		(0.77)
Degree	0.1066	***	(3.28)
Further Education	0.0647	**	(2.25)
A level	0.0744	***	(2.39)
GCSE grades A-C	0.0837	***	(3.06)
GCSE grades <C	-0.0061		(0.14)
Other Qualification	0.0339		(0.83)
Male	0.0396	**	(2.30)
White	0.0178		(0.35)
Immigrant	0.0276		(0.65)
Married	-0.0367	**	(1.89)
Permanent Contract	-0.0026		(0.07)
Real Wage	0.0709	***	(3.80)
Unearned Income	0.0302	***	(6.80)
Observations		2,294	
Adjusted R squared		0.0605	

\*\*\*, \*\* denotes 1 and 5 per cent significance respectively