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DISCUSSION PAPER SERIES

IZA DP No. 16952

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ABSTRACT

Who Cares about Investing Responsibly? Attitudes and Financial Decisions*

The aim of this paper is twofold. Firstly, we investigate the determinants of individual's attitudes towards investing responsibly, based upon Environmental, Social, and Governance (ESG) considerations. Secondly, we look at how important ESG considerations are, over and above socio-economic characteristics including financial literacy and risk attitudes, in explaining whether individuals hold shares and/or equity, and the amount invested in financial assets. Using the UK Financial Lives Survey data which is collected by the Financial Conduct Authority, our analysis reveals that, firstly, individual characteristics have little explanatory power in terms of explaining responsible investments, except for: education; gender; age; and financial literacy. Secondly, those individuals who are interested in future responsible investments are approximately 7 percentage points more likely to hold shares/equity, and have around 77% more money invested in financial assets (i.e. just under twice the amount). We also undertake several sensitivity checks including the role of selection on unobservables and the extent to which the exogeneity assumption regarding interest in future responsible investments can be relaxed, as well as matching estimation techniques to move beyond mere statistical associations.

JEL Classification: D81, G11, D14
Keywords: ESG attitudes, financial literacy, portfolio investment

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1. Introduction and background

Environmental, social, and governance (ESG) considerations have gained increased attention as investors have grown more aware of the potential effects that their financial decisions may have on the world at large. ESG factors cover a broad spectrum of topics, such as how a business treats its workers and the community in which it operates, as well as its corporate governance procedures. There is now a lively discussion among academics, practitioners, and policymakers over the incorporation of ESG criteria into investment decision-making processes. It is to this debate that we add evidence using unique UK data collected from the Financial Conduct Authority.

1.1. Overview of the existing literature

A sizable body of literature has explored the relationship between individuals' investment choices and their ESG attitudes. Several studies have found that investors are willing to accept lower returns or bear the higher risk to align their portfolios with their ethical and social values (e.g. Riedl and Smeets, 2017; Hartzmark and Sussman, 2019). This phenomenon, known as the "ESG preference", suggests that investors derive non-financial utility from investing in companies that demonstrate strong ESG performance. Using a dataset comprising portfolio holdings of a sample of Dutch investors Riedl and Smeets (2017) highlight the importance of social preferences in driving ESG investment decisions, while Hartzmark and Sussman (2019) find that investors are willing to sacrifice up to 3.8% in annual returns to invest in funds with higher sustainability ratings. This indicates that for many investors, the firm's objectives extend beyond mere profit maximization and encompass broader societal and environmental considerations. Similarly, a study by Barber et al. (2021) provides micro-level evidence on the investment behavior and motivations of socially conscious investors. They reveal that impact investors are willing to accept lower expected returns to increase their portfolios' impact scores. The authors

estimate that impact investors are willing to sacrifice around 3% per year in performance for each standard deviation increase in impact. Using flows and expenses of ESG and non-ESG Index Funds, Baker et al. (2022) find that firms with higher aggregate ESG ratings command higher valuations, as measured by Tobin's Q. This valuation premium is driven primarily by the governance component of the ESG ratings, rather than the environmental or social components. Moreover, the positive relationship between ESG ratings and firm valuations is stronger for firms with greater institutional ownership and analyst coverage, suggesting sophisticated investors place more weight on ESG factors. While the traditional view of business often emphasizes profit maximization, the consideration of ESG criteria introduces a broader perspective that encompasses sustainability, social responsibility, and good governance. However, other research has challenged the notion that ESG preferences are widespread among individual investors. For instance Moss et al. (2023) conducted a study using data on retail investors' security positions and found no evidence that ESG disclosures influence retail investors' buy and sell decisions.

There is also a lively debate on whether investors prioritize financial performance or social/environmental impact. Some research suggests a focus on returns, while others show a willingness to sacrifice some return for positive ESG practices. For instance, Hong and Kacperczyk (2009) argue that *sin stocks*, which are stocks of companies involved in industries like tobacco, alcohol, and gambling, tend to be shunned by certain investors due to societal norms or ethical views. This exclusion from some investors' portfolios leads to a depressed demand and valuations for these stocks. As a result, the authors find that sin stocks deliver higher average returns compared to comparable stocks, as investors who are willing to hold them are compensated for bearing this societal norm risk. Blitz and Fabozzi (2017) challenge the notion that sin stocks systematically outperform. Their analysis suggests that the out-performance of sin stocks documented in earlier studies like Hong and Kacperczyk (2009) is largely incidental and can be attributed to other well-known risk factors, such as the value and size effects. Once they control for these factors, the authors find no significant difference in the performance of *sin stocks* compared to other

stocks. The plethora of studies on the subject has not reached a unanimous conclusion (e.g. Bolton and Kacperczyk, 2021; Barber et al., 2021; Friede et al., 2015; Khan et al., 2016). Ultimately, the conflicting evidence highlights the complexity of disentangling the impact of societal norms or ethical considerations on stock returns.

The heterogeneity in ESG preferences among individual investors has been linked to various demographic and socioeconomic factors. For instance, studies have shown that women, younger investors, and those with higher levels of education and income tend to exhibit stronger ESG preferences (e.g. Riedl and Smeets, 2017; Hartzmark and Sussman, 2019). Dyck et al. (2019) adds that cultural and social norms have also been found to play a role in shaping ESG attitudes.

Notably, researchers have increasingly recognized the importance of financial literacy in shaping individuals' ESG investment decisions. Anderson and Robinson (2022) argue that a lack of financial literacy can be a significant barrier to the adoption of ESG investing strategies. They suggest that individuals with limited financial knowledge may struggle to understand the complexities of ESG factors and their potential impact on investment performance, leading them to prioritize traditional financial metrics over ESG considerations.

Furthermore, the literature has explored the impact of ESG disclosure and transparency on individual investment decisions. A key finding is that individual investors are more likely to invest in companies that provide clear and comprehensive ESG reporting, as it reduces information asymmetry and enables better evaluation of ESG performance (e.g. Eccles and Krzus, 2010; Grewal et al., 2020). However, the effectiveness of ESG disclosure can be influenced by factors such as the quality and credibility of the information, as well as investors' ability to interpret and integrate ESG data into their decision-making processes. This latter point underscores the importance of financial literacy in facilitating the effective use of ESG information in investment decisions.

Our research further aligns with recent studies employing diverse methodologies, including field surveys Bauer et al. (2021), field experiments Heeb et al. (2023), and labora-

tory experiments Humphrey et al. (2021), which demonstrate investors' favorable inclination towards sustainable or impact investments. Additionally, it complements investigations into investors' motivations for ESG investments through the analysis of investment flows Renneboog et al. (2011); Döttling and Kim (2024).

In addition to individual investors, the literature has examined the ESG attitudes and practices of institutional investors, such as mutual funds, pension funds, and sovereign wealth funds. Bollen (2007) investigates why investors hold socially responsible mutual funds and find that both social and financial motivations play a role. They find that, although investors want socially conscious funds to have competitive financial performance, they are also ready to tolerate lesser returns. Renneboog et al. (2008) explore the drivers of socially responsible investment fund participation, highlighting the importance of investor characteristics, such as age, gender, and social norms, in shaping SRI preferences. Several studies have highlighted the growing adoption of ESG integration strategies by institutional investors, driven by factors such as regulatory pressures, stakeholder demands, and a recognition of the potential financial benefits of ESG investing Amel-Zadeh and Serafeim (2018); Eccles and Klimenko (2019). Pástor et al. (2021) propose a theoretical model for sustainable investment in equilibrium. Their model suggests some interesting testable hypotheses: investors with a stronger-than-average preference for ESG factors tilt their portfolios towards "green" assets, deviating from the market portfolio composition. Conversely, investors with a weaker-than-average ESG preference tilt their portfolios towards "brown" or less sustainable assets. The magnitude of these green and brown tilts increases when investors' risk aversion is lower. Stronger ESG preferences among investors result in poorer anticipated returns, particularly in situations when risk aversion is low and average ESG preferences are high. However, to maintain their ideal portfolio, these investors forfeit less return than they are prepared to. Moreover, these investors are willing to accept a larger reduction in returns to maintain their desired portfolio alignment with ESG principles.

A part of the literature has also explored the societal impacts of ESG investing. Dim-

son et al. (2020) argue that responsible investing represents the "ESG frontier", as it has the potential to drive positive change in corporate behavior and contribute to the achievement of sustainability goals. However, they also acknowledge the challenges associated with measuring and quantifying the non-financial impacts of ESG investing.

Overall, the existing literature paints a complex picture of ESG attitudes and their influence on individual and institutional investment decisions. While a segment of investors demonstrates a strong preference for ESG-aligned investments, driven by social preferences, financial motivations, and demographic factors, others prioritize financial returns over ESG considerations. Factors such as financial literacy, ESG disclosure practices, and regulatory frameworks have been identified as potential drivers or barriers to the adoption of ESG investing strategies. As the integration of ESG factors into investment decision-making continues to evolve, further research is needed to fully understand the dynamics, implications, and potential societal impacts of this emerging trend, as well as the role of financial literacy in facilitating informed and effective ESG investment decisions.

The papers mentioned above show a lot of ground has been covered regarding the possible costs and benefits of ESG investing. However, the real reasons and factors that influence individual retail investors to allocate their investments into ESG assets are still poorly understood.[1]

1.2. Our contribution

We contribute to the literature in several ways. Firstly, we look at a comprehensive survey for the United Kingdom that explores all three aspects of ESG: the environment, governance, and society. As far as we are aware this is the first paper based upon a large scale random sample survey of the UK population to undertaken such exploratory analysis. Evidence from another country which has its own set of cultural and social norms, which have been found to play a role in shaping ESG attitudes, is therefore also

[1] A notable exception is the recent paper by Giglio et al. (2023) who explore ESG beliefs and preferences in a large panel of retail investors linked to administrative data on their investment portfolios.

of relevance, see Dyck et al. (2019). Our empirical analysis starts by investigating which personal and socio-economic characteristics are associated with different aspects of ESG, including attitudes towards such investments. This is important as opinions regarding responsible investments may not be randomly allocated across households, consequently understanding the key drivers behind such investments is crucial before we go on to explore the role of ESG investment on different financial outcomes, which forms the second part of our empirical analysis.

To be specific, we investigate whether ESG considerations are associated with the likelihood of investing in shares and/or equity and the amount invested in financial assets, i.e. exploring whether there is are any effects on either the extensive and/or intensive margins. In doing so, we also include several sensitivity checks including the role of selection of unobservables and statistical matching techniques to move beyond statistical associations and assess the robustness of the baseline results. Our analysis reveals that individual socio-economic characteristics are largely insignificant in explaining attitudes to ESG, except for gender, educational attainment, and financial literacy (as found in the existing literature). Whether individuals are interested in ESG investments increases the probability of holding shares/equity by around 7 percentage points and increases the amount of financial assets held by over two-thirds (77%). The sign and statistical significance of the estimates are robust to several sensitivity checks, as well as matching estimation techniques.

2. Data

Our empirical analysis is based on data from the Financial Lives Survey (FLS) conducted by the Financial Conduct Authority (FCA). This is a repeated cross-sectional random household survey for the United Kingdom which is representative of the underlying population. The FLS measures the personal and economic well-being of individuals and households by assessing levels of assets, debt, savings, and planning for retirement. The

FLS also provides information on a host of socio-demographic factors that we control for in our analysis, as detailed below. The first wave of the survey is in 2017 and covers the United Kingdom: England; Wales; Scotland; and Northern Ireland. From the second wave onwards, the FLS has collected detailed information regarding individual investors' attitudes towards ESG and such investments. For this reason, we analyze information from waves 2 and 3 (collected between 2020 and 2022). This yields a sample size of 35,129 which is nationally representative of the population.

We control for the following individual socio-economic characteristics included in the vector, X_{it}: whether the individual is highly financially literate;[2] whether highly risk-tolerant;[3] age; gender; the number of adults in the household (excluding the respondent); the number of children in the household; housing tenure, specifically - whether own on a mortgage, rent or another type of housing tenure (where own outright is the omitted category); labor market status, whether the individual is - an employee, self-employed, unemployed, a student, sick/disabled, or another state (retired is the reference group); marital status, i.e. whether single; the natural logarithm of household income; and highest educational attainment, specifically - GCSE or apprenticeship, A'levels or vocational qualification, other higher qualification (e.g. teaching or nursing), undergraduate degree, and post-graduate degree e.g. masters or Ph.D. (no qualifications is the omitted category). We also incorporate regional identifiers and year of interview fixed effects.

The FLS also contains detailed information measuring the attitudes towards ESG issues, the primary focus of our analysis, and the relationship with investment risk-performance trade-offs. This part of the FLS questionnaire is asked to a random selection of all adults (1 in N) in the survey, where raw statistics in the data are reported as a

[2]This is defined as a binary variable when the respondent obtains three correct answers from the questions: *(1) How much would be in the account at the end of five years (remembering that there are no fees or tax deductions)?; (2) If the inflation rate is 5% and the interest rate you get on your savings is 3%, will your savings have more, less, or the same amount of buying power in a year?; and (3) Buying shares in a single company usually provides a safer return than buying shares in a range of companies?*

[3]We define high-risk attitude binary indicator from the responses to the following question: *Are you a person who is generally willing to take risks?*, where the responses are: *(0) Not at all willing to take risks*, through to *(11) Very willing to take risks*. The indicator is equal to unity if the respondent selects 10 or 11, and zero otherwise.

proportion of all relevant UK adults from the nationally representative sample.

The first set of questions aims to capture attitudes towards ESG issues among all the respondents. The individual is asked whether they agree or disagree with the following statements (question AT18 in the FLS): *(1) Environmental issues are really important to me*; *(2) Businesses should control executive pay*; *(3) Businesses have a wider social responsibility than simply making a profit*; *(4) It is important to me that the vulnerable in society are protected.* The respondent then has six possible responses: *1.Strongly agree; 2. Slightly agree; 3. Neither agree nor disagree; 4 Slightly disagree; 5. Strongly disagree; 6. Don't know.* For each question we then construct a dummy variable, which takes the value of one if the respondent answered either that they *strongly agreed* or *slightly agreed* with the above statements.

The second set of questions tries to capture the individual's willingness to sacrifice investment performance to achieve some ESG objective. The questions are only asked to individuals that have some form of investment. The question (ESG5) in the FLS is: *Thinking now in a bit more detail about how your money, e.g. money invested through your pension or other investments, could be used for responsible investment, to what extent do you agree or disagree with the following statements?* Where the following randomised alternatives are available: *(1) I would like the way my money is invested to do some good as well as provide me with a financial return; (2) I would like to invest in a way that is protecting the environment; (3) I would be prepared to take greater financial risk with a responsible investment than I would with a traditional investment; and (4) I would be prepared to accept higher costs with a responsible investment than I would with a traditional investment.* As with the AT18 questions the respondent has the same six possible responses available and so for each question we then define a dummy variable, which takes the value of one if the respondent answered either that they *strongly agreed* or *slightly agreed* with the above statements.

The respondents' level of interest in responsible investment issues is also captured in the FLS. These questions are split among investors (ESG4) and potential investors

(ESG6). Investors are asked the following question (ESG4): *How interested are you in investing in responsible investments in the future?* The responses are: *1. Very interested; 2. Somewhat interested; 3. Not very interested; 4 Not at all interested; 5. Don't know.* From this we create a binary indicator equal to unity if the response is (1) or (2). We also consider the responses to potential investors (ESG6): *Imagine you were in a position to invest some money tomorrow, e.g. in a pension or an investment product like a stocks and shares ISA. How likely or unlikely would you be to invest your money in Responsible Investments?* The possible responses are on a five-point scale: *1. Very likely; 2. Quite likely; 3. Neither likely nor unlikely; 4 Very unlikely; 5. Don't know.* We then a binary indicator if the respondent answered (1) or (2), i.e. *Very likely* or *Quite likely.*

Table I shows the summary statistics the ESG variables. For AT18 around 90% think that it is important to protect the vulnerable in society, compared to approximately 80% who report that environmental issues are really important to them. Of those respondents who currently have investments, 64% are interested in responsible investments in the future (ESG4). Considering ESG5, wanting to do good with any money invested and/or ensuring that the environment is protected when investing money is important to respondents at 82% and 77% respectively, whilst being willing to accept higher risks and/or higher costs than a typical investment, is around 40%.

The FLS also contains information on financial investments. We focus on responses to the following question: *Which, if any, of these investments do you currently have, either in your own name or in joint names? Shares/equities* to define investments in shares/equity at the extensive margin. In terms of the amount invested (the intensive margin) this information is taken from the following question: *How much in total do you currently have in investments at current market value? If you hold any investments jointly, only include the amount you consider to be yours within this.*[4] Table I shows the summary statistics for these two variables, where on average whether respondents

[4]Responses to the question are given in monetary bands which we convert into a continuous variable by taking the mid-point.

currently have investments in shares and/or equity and the amount invested in financial assets are 23% and £26,469 (4.218 log units) respectively.

Table I also provides summary statistics of the demographic and socio-economic characteristics that are used as control variables. The average age is 49, just under 50% of respondents own their home outright, most are employees, approximately 40% have educational attainment of at least undergraduate degree level, and the mean household income is £58,391.

3. The determinants of responsible investment

As far as we are aware there is no evidence for the UK to date that has explored what individual and socio-demographic factors influence environmental, social, and governance (ESG) issues. Hence, we start by ascertaining the socio-economic characteristics associated with attitudes towards ESG and ESG investment. Given each aspect of ESG may not be randomly allocated across households, understanding the drivers behind responsible investments is important before we go on to explore the role of ESG investment on different financial outcomes in Section 4. Our empirical approach is as follows:

$$ESG_{it} = \alpha + X'_{it}\lambda + \zeta_{it} \tag{1}$$

where all ESG outcomes are binary, hence we model the probability of ESG attitudes and ESG investments via a binary linear probability model (LPM), where $ESG_{it} \in (0, 1)$.[5] The subscripts i and t denote the individual and FLS wave respectively. The alternative outcomes are conditioned on a set of explanatory variables X_{it}, as shown in Table I. All LPM regressions incorporate FLS sampling weights and report heteroscedastic robust standard errors. The results are shown in Tables II to VI where we also condition each ESG outcome on financial literacy and the results which follow are not sensitive to its

[5]The results which follow are robust to using a probit specification.

exclusion.[6]

In Tables VII and VIII we report the results from modelling passive and active ESG investors respectively, as in Anderson and Robinson (2022). Active ESG investment is defined as a binary variable equal to unity if the respondent answers "*yes*" to the following question which is asked in the context of responsible investments: *Have you ever invested in this way before, either with your pension money, e.g. through a workplace pension or private pension, or with another investment?*. Passive ESG investment is constructed as a binary indicator if the respondent answered "*no*" to the previous question and indicate that they are interested in future investments in ESG. Table I reveals that around 75% of individuals invest either passively or actively in ESGs.

Table II presents the results from exploring whether any demographic or socio-economic characteristics can explain an individual's sensitivity to different ESG themes (AT18). There is an important message appearing, the higher the level of education the stronger the support for the ESG investment. We find very limited support for any other socio-economic characteristics. Looking at the financial literacy indicator, a variable that *a priori* one could have thought to be strongly correlated with ESG, the coefficient is of the expected sign but the statistical significance is limited to Q3 and Q4 and only at the 10% confidence level. The result is probably not entirely surprising given the strong correlation with the education of the individual. The results also suggest that there is some evidence of a gender division when considering environmental (Q1) and societal issues (Q4). Males are reported to have negative and statistically significant coefficients, suggesting that females have a higher preference than men for those particular issues. We do not find any age trend suggesting that the issues covered by the ESG label are just of importance for the younger generation of adults. Also, income does not seem to play a factor here.

The results in Tables III to VI show the results of modelling the determinants of different aspects of responsible investments, whilst Tables VII and VIII consider passive

[6]Hence, for brevity we only show specifications which include financial literacy.

and active ESG investment respectively.

Table III shows the analysis of the set of questions that are well placed to understand whether there is an "ESG preference", which is captured by whether individual investors are willing to sacrifice investment performance when investing in ESG-compliant assets. The analysis in column 1 reveals that male (single) individuals are less (more) likely to be willing for their investment to do some good as well as provide a financial return. In column 2 we see which individual characteristics explain the trade-off between investment and *environment*. There are three statistically significant coefficients; the level of financial literacy and the level of education both enter positively, suggesting that individuals with those types of characteristics are more inclined towards "impact investing". On the other hand, male investors seem less sensitive to this type of investing. Columns 3 and 4 investigate the willingness to take on board a higher risk or higher cost when investing responsibly, respectively. We notice that higher costs are only accepted by highly educated individuals (i.e. individuals with a post-graduate qualification).

Moving to Table IV and V, we report results from a question asking current investors whether they are potentially interested in ESG investment (ESG4). Starting with Table IV, alongside the covariates which aim to capture the individual's socio-economic characteristics, we include the attitudes towards ESG issues (AT18). These are reported individually in columns 2 to 5 and simultaneously in column 6. Some interesting patterns emerge. Firstly, the role of education and financial literacy is in line with the results in Table II and III. For example, a highly financially literate individual is around 16 percentage points (pp) more likely to show an interest in future responsible investments, where the magnitude is in accordance with that stemming from education. Second, investors who rent or have a mortgage are less likely to show intent for this type of investment. Third, males are more likely to be interested in making future responsible investments, by around 6pp. Fourth, the attitudes towards ESG, i.e. the AT18 covariates, are individually positive and statistically significant at the usual level of confidence. However, when all of them are included (column 6) environmental issues dominate. Interesting, in

terms of economic magnitude this coefficient dominates those of both financial literacy and educational attainment.

Table V presents the results on whether investors are interested in future responsible investing (ESG4) and how money should be used for such investment. The education and financial literacy theme is confirmed as a key indicator. We also find, as in Table IV, that housing tenure matters. Furthermore, life-cycle effects are apparent where ESG investment is inversely related to age when one controls for the individual's trade-off between ESG and return and/or risk, which is consistent with Bauer et al. (2021) who find that older people are less in favor of sustainable investments. For example, an additional year of age decreases the likelihood that the respondent is interested in future responsible investing by approximately 0.6pp.

Whether the respondent is interested in future responsible investing (ESG4) is the primary variable reflecting ESG attitudes that we focus on when exploring financial outcomes (we explain the justification for this in the next section). As such, we investigate heterogeneity across the sexes along the lines of two continuous covariates that were found to be important in explaining ESG4 (see Table V) - namely age and household income. The results are shown in Figure 1 where the left (right) pane focuses on differences across age (household income) between males and females. Clearly, there are no significant income differences across the sexes when considering the effect upon the likelihood of future responsible investing, the only borderline significant effect is for household income of £40,000 albeit the estimate is very small. However, males aged 36-45 and 56-65 (compared to females of the same age) are around 10pp more likely to be interested in future ESG investments, whilst the opposite is apparent for those males aged 75 and above (15pp less likely relative to females).

In Tables IV and V the question is asked to individual investors, whilst in Table VI a similar question is asked solely of those individuals who do not have any investment at the time of the survey (ESG6). As previously stated, education is positively correlated, but in this context, housing tenure characteristics do not matter. Similar findings are also

revealed for attitudes towards ESG investments. To be specific, when entered individually these variables are positive and statistically significant, but also noticeably larger in magnitude than the corresponding estimates in Table IV.

Considering passive ESG investment the results of Table VII show that few individual level characteristics hold explanatory power, except for financial literacy and income, albeit only at the 10% level of statistical significance. In contrast to Anderson and Robinson (2022) there is no evidence of life-cycle effects. The same picture is also evident for the determinants of active ESG investment as can be seen from Table VIII. Following Anderson and Robinson (2022) we explore the role of the ESG5 variables and AT18Q1 (i.e. environmental concerns) on both passive and active ESG. Due to concerns over multicollinearity, given that such covariates are likely to be correlated, we enter them one-by-one in columns (1) to (5) and then all simultaneously in column (6) in both tables. Interestingly, where statistically significant the ESG5 variables have a positive (negative) association with passive (active) ESG investment as can be seen from Table VII (VIII). For example, individuals who state *I would like the way my money is invested to do some good as well as provide me with a financial return*, are around 48pp more likely to want to passively invest in ESG, but 6pp less likely to actively hold ESG investments. The differences in statistical significance and direction of impact of the ESG5 variables on passive and active ESG investment is consistent with Anderson and Robinson (2022).

4. ESG and financial investments

Having contributed to the literature which has examined who is likely to be concerned with different aspects of ESG, we now explore whether individuals who are interested in future ESG investments: (i) have a higher probability of owning shares and/or equity, $y_{it} \in (0, 1)$; and (ii) the amount invested in financial assets, $y_{it} \in (-\infty, +\infty)$. Each financial outcome y_{it} is modelled via LPM/OLS regressions incorporating FLS sampling weights and heteroscedastic robust standard errors. Our empirical approach is as follows:

$$y_{it} = \phi + \beta ESG_{it} + X'_{it}\theta + \epsilon_{it} \tag{2}$$

We start by exploring a number of aspects of ESG upon the extensive and intensive margins, where Tables IX and X show the results respectively, excluding control variables, i.e. $\theta = 0$. However, all of the ESG variables (with the exception of interest in future ESG investing - ESG4), such as *'I would like the way my money is invested to do some good as well as provide me with a financial return'* and *'I would be prepared to accept higher costs with a responsible investment than I would with a traditional investment'*, have no significant effect on either the likelihood of owning shares/equity, or the amount of money invested in financial assets, this is consistent with the findings of Anderson and Robinson (2022) for Swedish households. Whilst some of the attitudinal questions (AT18) are statistically significant, once controls are added into the specification all aspects of ESG5 and AT18 become insignificant.[7]

Consequently, in what follows we focus solely upon ESG4 *'Whether interested in investing in responsible investments in the future'*, where we condition each outcome on a range of controls given in vector X_{it} (as defined above in Section 2), where the multiple regression analysis identifies conditional correlations. A causal interpretation of β is only possible under the assumption of conditional mean independence (or unconfoundedness), i.e. $E[\epsilon_{it} \mid ESG_{it}, X_{it}] = E[\epsilon_{it} \mid X_{it}]$. The vector of controls also includes financial literacy and the results which follows are not sensitive to its exclusion.[8]

The results of estimating Equation (2) are shown in Table XI for the determinants of the likelihood of investing in shares/equity (columns 1 and 2) and/or the amount invested in financial assets (columns 3 and 4). In columns 2 and 3 we consider arguably

[7] As an additional financial outcome, we have also considered financial engagement by modelling the likelihood that respondents have not checked the value of their pension pot over the past 12 months. Consistent with Anderson and Robinson (2022), high financial literacy respondents are much less likely to have not checked their retirement balances. Moreover, none of the ESG variables (ESG4, ESG5 or the AT18 questions) are statistically significant. Hence, there is some evidence to suggest that retirement planning responses point to disengagement with financial markets as was found for Swedish households.

[8] Hence, for brevity we only show specifications which include financial literacy.

more stringent specifications where the key covariate is now redefined for people who have never previously invested responsibly. To be specific we use the responses to the following question (ESG2), which is asked in the context of responsible investments: *'Have you ever invested in this way before, either with your pension money, e.g. through a workplace pension or private pension, or with another investment?'*, where if the respondent answered "*no*" the ESG4 variable *'Whether interested in investing in responsible investments in the future'* is recoded to zero.

The findings are consistent with those found in the existing literature, e.g. van Rooij et al. (2011); Gomes et al. (2021); Anderson and Robinson (2022); and Kaiser and Lusardi (2024). Both the extensive and intensive margins are positively associated with: financial literacy; whether male; degree level education; and conversely, negatively associated with: all types of housing tenure relative to owned outright; whether an employee (compared to retired); and income. For example, a 1% increase in income increases the probability of owning shares/equity by around 5pp and increases the amount invested by 0.87%, i.e. income inelastic. Whether the individual is a risk taker and age also have a positive impact on the amount invested in financial assets. Focusing on the key parameter of relevance, those individuals who are interested in future responsible investments are approximately 7pp more likely to hold shares/equity, and have around 77% more money invested in financial assets (i.e. just under twice the amount).[9] The effects are roughly half the magnitude of whether the individual has a degree and/or is highly financially literate.[10] Moreover, the parameter estimates increase in magnitude for those who are interested in future responsible investments, but haven't invested in this way before, as can be seen from columns 2 and 4 of Table XI.

In the final part of the table we test to see whether ESG4 is exogenous using a robust

[9]Excluding covariates, X_{it}, the corresponding estimates for columns 1 and 3 are 0.116 and 1.473 respectively, and are statistically significant at the 1% level, as can be seen from Tables IX and X respectively.

[10]Given the statistical insignificance of the ESG5 and AT18 variables, in what follows we focus solely upon ESG4 *'Whether interested in investing in responsible investments in the future'* in terms of sensitivity analysis and heterogeneity.

score test and a robust regression-based test, see Wooldridge (1995). We do this by instrumenting on AT18Q1, i.e. whether the individual responds that environmental issues are really important to them, as *a priori* there is no reason why this variable should influence financial decisions at either the intensive or extensive margins (indeed statistically they don't as can be seen from Tables IX and X respectively). However, as required in the first stage of 2SLS analysis, they are found to influence whether individuals are interested in future responsible investments as reported in Table IV. The results of the tests shown in the final rows of Table XI show that the null hypothesis of exogeneity can-not be rejected at conventional levels of statistical significance.

4.1. Sensitivity analysis

In this section, we undertake a number of robustness checks in order to: firstly, examine how sensitive the coefficients are to selection effects; and secondly, establish average treatment effects.

4.1.1. Selection on unobservables

Following the seminal work of Altonji et al. (2005) it is now common in applied work for researchers to assess the sensitivity of empirical findings to omitted variable bias. In this section, we assess the robustness of our results using the approaches developed Oster (2019) and Diegert et al. (2023). Treatment effects and the relative degree of selection under proportional selection of observables and unobservables is calculated in order to assess the role of omitted variable bias. In the event of omitted variable bias the model in Equation (2) could yield biased coefficients if there are omitted covariates that are correlated with ESG_{it}.

Both the approach of Oster (2019) and Diegert et al. (2023) start from the same baseline model. Omitting subscripts for brevity, let $W = (X, X_2)$, where X is a vector of observed covariates (as defined above) and X_2 is a vector of unobserved covariates. Then:

$$y = \beta ESG + \gamma_1' X + \gamma_2' X_2 + y^{\perp ESG,W} \tag{3}$$

where $y^{\perp ESG,W}$ is the OLS residual and so is uncorrelated with each component of (ESG, W) by construction. The parameter of interest is β, i.e. the association between whether the respondent has an interest in responsible investments and financial outcomes. The next step is to consider the OLS estimand of ESG on $(1, X, X_2)$, as follows:

$$ESG = \pi_1' X + \pi_2' X_2 + ESG^{\perp W} \tag{4}$$

where $ESG^{\perp W}$ is the OLS residual and is uncorrelated with W. The parameters π_1 and π_2 represent selection on observables and unobservables respectively. If $\pi_2 = 0$ then there is no selection on unobservables.

The approach proposed by Oster (2019) method takes into account the R-squared obtained from OLS to establish a range from a controlled treatment effect to an unbiased treatment effect. Suppose that R_{max} indicates the R-squared value of a theoretical specification that includes all observed and unobserved variables both time-variant and time-invariant, i.e. obtained from Equation (3), and $\tilde{R}$ denotes the R-squared value of a fully controlled specification, i.e. Equation (2). Oster (2019) suggests that a bias-adjusted treatment effect is equal to $R_{\max} = 1.3\tilde{R}$.[11] The calculation of the bias adjusted estimator is as follows:

$$\beta^* \approx \tilde{\beta} - \delta[\dot{\beta} - \tilde{\beta}]\frac{R_{max} - \tilde{R}}{\tilde{R} - \dot{R}} \tag{5}$$

where: (i) δ is the degree of unobserved selection relative to observed selection; (ii) parameters (R-squared) $\dot{\beta}$ $(\dot{R})$ relate to a bivariate OLS regression of the outcome, y_{it}, regressed against the treatment, ESG_{it}, only; and (iii) parameters (R-squared) $\tilde{\beta}$ $(\tilde{R})$ correspond to

[11] Given that randomized results might provide a bounding value, Oster (2019) used a sample of randomized academic papers in order to derive the cut-off value of 1.3, which would allow for at least 90% of randomized results to survive.

an OLS regression with observable characteristics, X_{it}, incorporated in the model. Oster (2019) defines the degree of unobserved selection relative to observed selection, i.e. the coefficient of proportionality, as follows:

$$\delta = \frac{cov\left(ESG, \gamma_2' X_2^{\perp X}\right)}{var\left(\gamma_2' X_2^{\perp X}\right)} \Big/ \frac{cov\left(ESG, (\gamma_1 + \rho)' X\right)}{var\left((\gamma_1 + \rho)' X\right)} \tag{6}$$

where $\rho = var(X)^{-1} cov(X, \gamma_2' X_2)$. The numerator of Equation (6) is a measure of selection on unobservables, whilst the denominator is a measure of selection on observables, where the metric allows for endogeneity.

The estimated values of δ for each dependent variable required to drive the effect of interest in future ESG investment to insignificance, i.e., $\beta = 0$, are shown in Table XII Panel A. For both outcomes the proportion of the variation explained by unobservables would need to be approximately 3 times as large as that of the share of variation explained by observable characteristics to drive the β to zero. These are implausible degrees of variation to attribute to unobservables and hence it would imply selection bias is not sufficient to explain the results in Table XI.

Next we explore the sensitivity of the estimate of ESG by reporting Oster bounds, i.e. the bias adjusted treatment effect β^*. The results are shown in Table XII Panel B for alternative values of δ.[12] The first row of Panel B shows the OLS estimates for the effect of investing in responsible investments in the future, i.e. β from Table XI. The results show that regardless the assumptions made about δ the bias adjusted treatment effect β^* is in line with the estimates of interest in making future ESG investments, i.e. β, reported in Table XI in terms of sign, magnitude and statistical significance.

Both Masten et al. (2024) and Diegert et al. (2023) have recently criticised the approach of Oster (2019) in terms of its robustness to different assumptions. Diegert et al. (2023) provide a new approach to sensitivity analysis, whilst allowing omitted variables

[12]Where: $\delta = 0.5$ selection in unobservables is smaller than selection on observables; $\delta = 1$ selection in unobservables is equal to selection in observables; and $\delta = 1.5$ selection in unobservables is larger than selection on observables.

to be correlated with the included controls, as well as varying the calibration of sensitivity parameters by comparing the magnitude of selection on observables with the magnitude of selection as in previous methods. Hence, we also adopt this methodology as an additional sensitivity check for the impact of selection on unobserables in our analysis thus far. Diegert et al. (2023) define the relative variation in selection as the ratio of the selection in unobservables to the selection in observables defined as:

$$r_{ESG} \equiv \frac{\sqrt{var(\pi_2' X_2)}}{\sqrt{var(\pi_1' X)}} \tag{7}$$

They assume that the association between the treatment ESG and a one standard deviation increase in the index of unobservables is at most $\overline{r}_{ESG}$ times the association between the treatment and a one standard deviation increase in the index of observables, i.e.:

$$\sqrt{var(\pi_2' X_2)} \leq \overline{r}_{ESG} \cdot \sqrt{var(\pi_1' X)} \tag{8}$$

They then define the breakpoint as the largest amount of selection on unobservables which still yields a statistically significant estimate, i.e. the extent to which the exogeneity assumption can be relaxed before the hypothesis that $\beta > 0$ is rejected.

$$\overline{r}^{bp}_{ESG} = \left(\frac{R^2_{y \sim ESG \bullet X}}{\frac{R^2_{ESG \sim X}}{1 - R^2_{ESG \sim X}} + R^2_{y \sim ESG \bullet X}} \right) \tag{9}$$

Diegert et al. (2023) show that the breakpoint, $\overline{r}^{bp}_{ESG}$, is dependent on just two features of the observed data:[13] (i) the relationship between treatment and the outcome, after adjusting for the observed covariates, i.e., Equation (3) with $\gamma_2 = 0$, given by the R-squared value on the numerator, and (ii) the first stage relationship between treatment and the observed covariates, given by the R-squared from Equation (4) with $\pi_2 = 0$, shown on the denominator. As the relationship between treatment and covariates strengthens, the breakdown point decreases. Diegert et al. (2023) show that restrictions on the joint dis-

[13] The numerator is the R-squared from Equation (3) and on the denominator $R^2_{ESG \sim X}$ is the R-squared from Equation (4) that only includes X, i.e. $\pi_2 = 0$.

tribution of (y, ESG, X, X_2) are governed by three scalar sensitivity parameters, namely: $\overline{r}_{ESG}$; $\overline{r}_y$; and $\overline{c}$. When the covariates are mutually uncorrelated, hence exogeneity holds, then $\overline{c} = 1$, and the unconfoundedness assumption holds. When the covariares are correlated then generally $\overline{c} \neq 1$. The relative impact of unobservables and observations on outcomes (which is analogous to r_{ESG}) is given by $r_y \equiv \frac{\sqrt{var(\gamma_2' X_2)}}{\sqrt{var(\gamma_1' X)}}$, where $r_y \leq \overline{r}_y$ for a known value of $\overline{r}_y$.

The breakdown point in Equation (9) is calculated holding $\overline{c} = 1$ and $\overline{r}_y = +\infty$. Diegert et al. (2023) note that the breakdown point $\overline{r}^{bp}_{ESG}$ is a conservative measure of robustness to omitted variables since it does not restrict the impact of omitted covariates on outcomes. Hence, they also advocate the use of $\overline{r}^{bp}$ which restricts the omitted variables' impact on treatment and on outcomes. The final two rows of Table XII shown in panel C report both breakdown point metrics, $\overline{r}^{bp}_{ESG}$ and $\overline{r}^{bp}$, which represent the largest amount of selection on unobservables, as a percentage of selection on observables, allowed for until it is no longer possible to conclude that $\beta > 0$. Both of these metrics hold for arbitrarily endogenous covariates. From Table XII panel C we see that the breakdown point is larger for $\overline{r}^{bp}$ compared to $\overline{r}^{bp}_{ESG}$ for both the probability of holding shares/equity and the amount invested in financial assets. The breakdown point estimates for the amount invested is more robust at 44% (67%) than the likelihood of owning shares/equity where the respective breakdown estimate is 29% (54%). Hence, focusing upon the amount invested we can conclude that $\beta > 0$ provided that selection on unobservables is at most 44% as large as selection on observables. Based upon the alternative $\overline{r}^{bp}$ statistic the evidence suggests that selection on unobservables needs to be 67% as large as selection on observables to overturn our conclusion that $\beta > 0$. Both breakdown statistics reveal a consistent pattern, hence the analysis shows that, at both the extensive and intensive margins, the effect of whether the respondent is interested investing responsibly in the future upon financial behavior is relatively robust to selection on unobservables.

We now relax the assumption that $\overline{c} = 1$, i.e., allowing for correlation between the covariates (observed and unobserved). The results are shown in Figure 2 for the prob-

ability of investing in shares/equity and Figure 3 for the amount of money invested in financial assets respectively. In both figures the blue line denotes a zero effect of β and the dashed red line for the original assumption that $\bar{c} = 1$. The breakpoint is when the frontier intersects the horizontal zero. For the likelihood of investing in shares/equity regardless of the value of $\bar{c}$ the breakdown point remains at around 30%, whilst for the amount invested in financial assets the breakdown is between 44% and 50% depending on the value of $\bar{c}$. Hence, the results appear to be robust to alternative assumptions about the degree of correlation amongst the covariates, given that the bounds on the parameter estimates of β are very similar regardless of the value of $\bar{c}$, see Figures 2 and 3, and are positive in line with the OLS results up until the breakdown point.

Overall both the Oster (2019) and Diegert et al. (2023) approaches to selection on unobservables show that the OLS estimates of the treatment effect of the respondent signalling that they are interested in future responsible investments upon both the extensive and intensive margins is generally robust and moves beyond a mere statistical association.

4.1.2. Matching estimators and inverse probability weighted regression adjustment

In this section, we assess the robustness of our results using matching techniques as well as inverse probability weighted regression adjustment (IPWRA). The model in Equation (2) could generate biased coefficient estimates because the treatment and control groups are intrinsically different.

We match on observable characteristics, where, as above, the treatment group comprises those individuals who receive financial advice. Using both propensity score (PS) and nearest neighbor (NN) matching methods, this enables the ATEs of effect of interest in future ESG investment on the two household finance outcomes to be estimated, as defined in Imbens (2003). The IPWRA is an alternative approach to estimate unbiased treatment effects in the presence of confounding. This approach magnifies the treatment of individuals, who otherwise look like they would not have selected treatment, and, con-

versely, magnifies control individuals, who otherwise look like they would have selected treatment. Therefore, the IPWRA is arguably more strigent than the OLS estimator as it accounts for two levels of selection – in both the treatment and outcome.[14]

Let $y(ESG)$, for $ESG \in (0, 1)$, denote the outcome for either the probability of owning shares/equity or the amount invested in financial assets when the treatment that the respondent is interested in future responsible investing is applied. For a given set of covariates, X the exogeneity assumption, or unconfoundedness, is given by:

$$y(0), y(1) \perp ESG \mid X \tag{10}$$

The average effect of the treatment average over the distribution of covariates can then be defined as:

$$\tau \equiv E[y(1) - y(0)] = E[\tau(X)] \tag{11}$$

Table XIII reports the ATEs corresponding to the effects of whether the individual is interested in future responsible investments on the likelihood of owning shares/equity and the amount invested in financial assets. The results shown in row 1 are based on PS matching, row 2 on NN matching and row 3 on the IPWRA estimator. Figure 4 produces a box plot, which checks for balance in matched samples after PS and NN matching and reveals that the matching balanced all the covariates based on the plot of the estimated propensity score. Similarly, for the IPWRA estimates reported in Table XIII row 3, the null hypothesis that the covariates are balanced can-not be rejected at conventional levels of statistical significance for both outcomes. Comparing the ATEs across each panel with the OLS β estimates reported in Table XI, they are generally equivalent in terms of sign, magnitude and statistical significance.

[14] An additional important feature of IPWRA is that of double robustness, where the estimator is still consistent if either the treatment equation or the outcome equation is mis-specified.

4.2. Heterogeneity analysis

Heterogeneity in ESG preferences among individual investors has been linked to a number of demographic and socioeconomic factors, as discussed in Section 1.1, and as revealed in our empirical analysis of the determinants of opinions regarding responsible investments, see Section 3, where gender, age, education, and financial literacy were found to play a role. We now consider such heterogeneity by contrasting the effect of future responsible investment by gender across: age; education; financial literacy; and also risk tolerance, in order to ascertain the existence of differential effects on the probability of holding shares/equity and the amount invested in financial assets.

Firstly, we explore whether the results of Table XI differ by gender across age and education by contrasting the linear prediction, at both the extensive and intensive margins, over whether the individual is interested in future ESG investments. For example, the existing literature has shown that women, younger investors, and those with higher levels of education tend to exhibit stronger ESG preferences, e.g. Riedl and Smeets (2017) and Hartzmark and Sussman (2019), and this might therefore translate into heterogenous effects on financial decisions.

The results are presented graphically shown in Figure 5. Panels A and B contrast the predictive margins between ESG=0/1 (i.e. control and treatment) across age groups and by gender, at the extensive and intensive margins respectively. The most noticeable differences are that females aged between 56 and 65 (in comparison to other age groups) who respond that they are interested in future responsible investments are more likely to hold shares/equity, the same effect is apparent for males at two the extreme points of the age distribution (see Panel A). The youngest and oldest groups of males who respond that they are interested in future responsible investing have a greater amount of money currently invested in financial assets, for the former group around £55 (Panel B),[15] whilst those females aged between 56 and 75 have a higher monetary value of financial assets,

[15]The monetary amount is found by taking the anti-log of the linear prediction which is in natural logarithmic units, i.e. $exp(4) = £54.60$.

by approximately £7.

Panels C and D of Figure 5 contrast the predictive margins between ESG=0/1 (i.e. control and treatment) across levels of highest educational attainment and by gender. Interesting, considering the extensive margin, males with no education who signify an interest in future ESG investment is the only educational group to show a positive significant association with the probability of owning shares/equity (Panel C). For females, the corresponding educational groups associated with a positive impact on the extensive margin when the individual is interested in future ESG investments are GCSE and/or apprenticeships and other higher qualifications, e.g. nursing or teaching. Turning to the intensive margin and the amount invested in financial assets, shown in Panel D, males with higher levels of educational attainment, i.e. other higher qualification and/or degree, who signal an interest in ESG investments are found to have more money in their financial portfolio.

Finally, we explore whether the results found in Table XI differ by gender across financial literacy and risk tolerance by contrasting the linear prediction (again at the extensive and intensive margins) over whether the individual is interested in future ESG investments. For example, generally women exhibit lower levels of financial literacy than males, see Lusardi and Mitchell (2008) and Tinghog et al. (2021); and risk-tolerance also tends to differ across the sexes, e.g. Charness and Gneezy (2012). Hence, we might expect *a priori* to observe differential effects by gender of the impact of future ESG investments upon financial decisions across such traits.

The results are presented graphically shown in Figure 6. Panels A and B contrast the predictive margins between ESG=0/1 (i.e. control and treatment) across low/high financial literacy and by gender. Interestingly, females (males) with high (low) financial literacy who are interested in future responsible investments have a higher likelihood of owning shares/equity, at approximatelty 10pp, as can be seen from Panel A. In terms of the amount invested in financial assets regardless of gender those individuals with low levels of financial literacy in the treated group have more money invested in financial assets,

although the effects are small at around £3, albeit statistically significant, (see Panel B). Turning to risk tolerance, both the extensive and intensive margins are positively affected by low risk individuals who signal an interest in future ESG investments (see Panels C and D respectively), for the former by around 0.5pp regardless of gender. However, these effects are dominated by the impact from males with high risk tolerance who are interested in investing responsibly in the future, where the probability of owning shares/equity is increased by 25pp, and such individuals have approximately £20 more invested in financial assets.

The heterogeneity analysis has revealed considerable variation between the sexes across key characteristics, which we previously found to play a role in determining ESG preferences in Section 3, upon financial behavior at both the extensive and intensive margins. In particular, there is some evidence in support of a gender gap in responsible investments across key demographics and traits (e.g. financial literacy) which can impact upon financial behavior.

5. Conclusion

We have explored a range of factors which may be associated with different aspects of attitudes towards ESG investments. Using data from the UK Financial Lives Survey the analysis revealed that individual socio-economic characteristics have little explanatory power in determining responsible investments. The key exceptions to this are education, gender and financial literacy. The second part of the analysis investigated whether future interest in responsible investing was associated with the likelihood of owning shares/equity, and the amount invested in financial assets. The results showed a positive impact on both the extensive and intensive margins, effects over and above a range of controls including income, financial literacy and educational attainment. Moreover, the results were robust to checks for omitted variable bias and matching estimation techniques.

Detailed household survey evidence can provide valuable information on how people

form opinions and beliefs regarding ESG considerations, and ultimately how such concepts and ESG attitudes influence the financial behavior of households and investors. Moreover, such analysis can also reflect informational constraints associated with certain households in regard to the use of ESG information when undertaking investment decisions, e.g. Amel-Zadeh and Serafeim (2018). Moreover, investing in ESG assets is a fairly recent phenomenon and is likely to be of both contemporary and future importance in terms of changes in both government policy and industry practice to promote responsible investing.[16]

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[16] In the context of the UK economy the government published an updated Green Finance Strategy, reinforcing its ambition for the UK to continue as a global leader in green finance, HM-Treasury (2023). Stemming from this it was announced by the Chancellor of the Exchequer in the Spring Budget 2024 that the government will regulate the provision of ESG ratings to make sure they are reliable and credible, where these metrics are used for investment decisions.

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Table I: Summary statistics

	Mean	Std. dev.	Min	Max
AT18Q1: *Environmental issues are really important to me.*	0.806	0.395	0	1
AT18Q2: *Businesses should control executive pay.*	0.866	0.340	0	1
AT18Q3: *Businesses have a wider social responsibility than simply making a profit.*	0.864	0.343	0	1
AT18Q4: *It is important to me that the vulnerable in society are protected.*	0.884	0.320	0	1
ESG4: *Whether interested in investing in responsible investments in the future.*	0.641	0.480	0	1
ESG5 Return: *I would like the way my money is invested to do some good as well as provide me with a financial return.*	0.817	0.387	0	1
ESG5 Protect Env.: *I would like to invest in a way that is protecting the environment.*	0.769	0.421	0	1
ESG5 More Risk: *I would be prepared to take greater financial risk with a responsible investment than I would with a traditional investment.*	0.355	0.479	0	1
ESG5 Higher Cost: *I would be prepared to accept higher costs with a responsible investment than I would with a traditional investment.*	0.390	0.488	0	1
ESG6: *If in a position to invest some money tomorrow, whether likely to invest your money in Responsible Investments?*	0.500	0.499	0	1
ESG Active: If individual has invested in responsible investments before.	0.746	0.435	0	1
ESG Passive: If individual does not hold a responsible investment, but is interested in such investments in the future (ESG Active=0 and ESG4=1).	0.763	0.403	0	1
Whether invest in shares and/or equity, y_{it}	0.235	0.424	0	1
Natural logarithm of amount invested in financial assets, y_{it}	4.218	4.937	0	12.429
High Fin. Lit.	0.575	0.494	0	1
Risk High	0.032	0.176	0	1
Age	49.238	17.688	18	97
Male	0.502	0.500	0	1
Adults	2.165	0.973	1	8
Children	0.521	0.921	0	7
Mortgage	0.346	0.476	0	1
Rent	0.275	0.447	0	1
Other type of tenure	0.086	0.281	0	1
White	0.884	0.321	0	1
Employed	0.577	0.494	0	1
Self-employed	0.064	0.244	0	1
Unemployed	0.034	0.182	0	1
Students	0.023	0.151	0	1
Sick/disabled	0.025	0.156	0	1
Other	0.031	0.173	0	1
Single	0.324	0.468	0	1
GCSE/apprent	0.127	0.333	0	1
A'lev/voc	0.190	0.392	0	1
Oth higher	0.122	0.328	0	1
Degree	0.197	0.398	0	1
Post-grad	0.193	0.395	0	1
Natural logarithm of household annual income	10.527	1.013	8.923	12.525

Table II: Attitudes towards environmental and responsible investment - AT18

	(1)	(2)	(3)	(4)
	Environment (AT18Q1)	Control Pay (AT18Q2)	More than Profit (AT18Q3)	Protect Vulnerable (AT18Q4)
High Fin. Lit.	0.025	0.022	0.033*	0.031*
	(0.02)	(0.01)	(0.01)	(0.01)
Risk High	-0.022	-0.015	-0.024	0.019
	(0.05)	(0.03)	(0.04)	(0.03)
Age	-0.000	0.001	0.001	0.002*
	(0.00)	(0.00)	(0.00)	(0.00)
Male	-0.066***	0.001	-0.005	-0.033**
	(0.02)	(0.01)	(0.01)	(0.01)
Adults	0.006	-0.012	-0.008	0.003
	(0.01)	(0.01)	(0.01)	(0.01)
Children	0.002	-0.007	-0.008	0.009
	(0.01)	(0.01)	(0.01)	(0.01)
Mortgage	-0.062*	-0.021	-0.015	-0.016
	(0.02)	(0.02)	(0.02)	(0.02)
Rent	-0.079*	-0.015	-0.036	0.002
	(0.03)	(0.03)	(0.03)	(0.02)
Other	-0.184***	-0.067	-0.060	-0.050
	(0.05)	(0.04)	(0.04)	(0.03)
White	0.025	0.050	0.005	0.044
	(0.03)	(0.03)	(0.03)	(0.03)
Employed	-0.006	0.028	0.038	0.003
	(0.03)	(0.03)	(0.02)	(0.02)
Self-employed	-0.018	-0.017	0.020	-0.027
	(0.04)	(0.04)	(0.03)	(0.03)
Unemployed	-0.033	-0.024	-0.004	-0.054
	(0.05)	(0.05)	(0.05)	(0.04)
Students	-0.007	0.012	0.084	0.028
	(0.07)	(0.06)	(0.05)	(0.05)
Sick/disabled	-0.102	-0.089	-0.094	-0.091
	(0.07)	(0.06)	(0.06)	(0.05)
Other	0.005	0.046	0.097*	0.077**
	(0.06)	(0.04)	(0.04)	(0.03)
Single	0.030	0.010	-0.008	0.030
	(0.02)	(0.02)	(0.02)	(0.02)
GCSE/apprent	-0.007	0.098**	0.026	0.020
	(0.04)	(0.03)	(0.03)	(0.03)
A'lev/voc	0.034	0.097**	0.070*	0.054*
	(0.03)	(0.03)	(0.03)	(0.02)
Oth higher	0.057	0.098**	0.069*	0.040
	(0.03)	(0.03)	(0.03)	(0.03)
Degree	0.079**	0.135***	0.093***	0.069**
	(0.03)	(0.03)	(0.03)	(0.02)
Post-grad	0.100***	0.111***	0.083**	0.067**
	(0.03)	(0.03)	(0.03)	(0.02)
Income	0.013	0.008	-0.008	0.007
	(0.01)	(0.01)	(0.01)	(0.01)
Constant	0.690***	0.482***	0.801***	0.644***
	(0.13)	(0.14)	(0.13)	(0.11)
Obs.	4,238	4,238	4,238	4,238
Adj. R-sqr.	0.037	0.087	0.028	0.023

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All specifications include regional and year fixed effects. All models incorporate individual weights. Standard errors are shown in parentheses throughout. AT18Q1: Environmental issues are really important to me. AT18Q2: Businesses should control executive pay. AT18Q3: Businesses have a wider social responsibility than simply making a profit. AT18Q4: It is important to me that the vulnerable in society are protected.

Table III: Attitudes towards ESG issues and investments (ESG5)

	(1)	(2)	(3)	(4)
	ESG5 Return	ESG5 Protect Env.	ESG5 More Risk	ESG5 Higher Cost
High Fin. Lit.	0.026	0.067**	0.038	0.056*
	(0.02)	(0.02)	(0.02)	(0.03)
Risk High	-0.005	0.029	0.021	0.011
	(0.04)	(0.04)	(0.05)	(0.06)
Age	-0.000	-0.000	-0.003*	-0.002
	(0.00)	(0.00)	(0.00)	(0.00)
Male	-0.060**	-0.064**	-0.004	-0.024
	(0.02)	(0.02)	(0.02)	(0.02)
Adults	0.002	0.001	-0.004	-0.016
	(0.01)	(0.01)	(0.02)	(0.02)
Children	0.000	-0.019	0.013	0.013
	(0.01)	(0.01)	(0.01)	(0.02)
Mortgage	0.003	-0.006	-0.012	-0.056
	(0.03)	(0.03)	(0.03)	(0.04)
Rent	-0.041	-0.044	0.008	-0.057
	(0.04)	(0.04)	(0.04)	(0.04)
Other	-0.089	-0.122*	-0.086	-0.109
	(0.05)	(0.06)	(0.05)	(0.06)
White	0.024	0.034	-0.038	-0.004
	(0.03)	(0.04)	(0.05)	(0.05)
Employed	-0.013	-0.021	-0.009	-0.048
	(0.03)	(0.04)	(0.04)	(0.04)
Self-employed	0.015	0.018	-0.006	-0.041
	(0.04)	(0.04)	(0.05)	(0.05)
Unemployed	-0.057	0.050	-0.027	0.078
	(0.08)	(0.07)	(0.11)	(0.10)
Students	-0.077	-0.022	0.105	0.076
	(0.09)	(0.09)	(0.10)	(0.10)
Sick/disabled	0.079	0.103	0.112	0.061
	(0.09)	(0.11)	(0.14)	(0.13)
Other	0.041	0.070	0.066	0.062
	(0.06)	(0.06)	(0.11)	(0.11)
Single	0.065**	0.042	0.018	0.046
	(0.02)	(0.03)	(0.03)	(0.03)
GCSE/apprent	-0.016	-0.018	-0.060	-0.051
	(0.05)	(0.05)	(0.05)	(0.05)
A'lev/voc	0.021	0.049	-0.010	0.016
	(0.04)	(0.05)	(0.05)	(0.05)
Oth higher	0.024	0.072	-0.018	0.032
	(0.05)	(0.05)	(0.05)	(0.06)
Degree	0.067	0.089*	0.056	0.111*
	(0.04)	(0.04)	(0.05)	(0.05)
Post-grad	0.066	0.135**	0.078	0.135**
	(0.04)	(0.05)	(0.05)	(0.05)
Income	-0.011	-0.002	0.009	0.020
	(0.01)	(0.01)	(0.01)	(0.02)
Constant	0.951***	0.739***	0.433*	0.385*
	(0.15)	(0.17)	(0.19)	(0.19)
Obs.	2,849	2,849	2,849	2,849
Adj. R-sqr.	0.024	0.037	0.026	0.035

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All specifications include regional and year fixed effects. All models incorporate individual weights. Standard errors are shown in parentheses throughout.

Table IV: Whether interested in future responsible investments (ESG4) and attitudes towards such investments (AT18)

	(1)	(2)	(3)	(4)	(5)	(6)
High Fin. Lit.	0.030***	0.168***	0.170***	0.171***	0.167***	0.169***
	(0.00)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Risk High	0.000	-0.018	-0.015	-0.026	-0.029	-0.011
	(0.01)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Age	-0.000	-0.001	-0.002	-0.002*	-0.002*	-0.002*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Male	0.004	0.063***	0.049**	0.048**	0.056**	0.059***
	(0.00)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Adults	-0.001	-0.013	-0.011	-0.009	-0.011	-0.012
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Children	0.001	0.001	0.004	0.003	-0.000	0.004
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Mortgage	-0.007*	-0.063*	-0.074**	-0.071**	-0.073**	-0.063*
	(0.00)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Rent	-0.012***	-0.089***	-0.105***	-0.100***	-0.107***	-0.092***
	(0.00)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Other	-0.018***	-0.129***	-0.162***	-0.156***	-0.160***	-0.129***
	(0.01)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
White	-0.005	-0.030	-0.033	-0.020	-0.031	-0.027
	(0.01)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)
Employed	0.005	0.082**	0.074*	0.072*	0.079**	0.075*
	(0.00)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Self-employed	-0.000	0.052	0.057	0.052	0.055	0.059
	(0.01)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Unemployed	-0.005	-0.029	-0.032	-0.039	-0.031	-0.027
	(0.01)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Students	-0.007	-0.001	-0.014	-0.022	-0.002	-0.015
	(0.01)	(0.06)	(0.06)	(0.07)	(0.06)	(0.06)
Sick/disabled	-0.015**	-0.057	-0.066	-0.061	-0.056	-0.049
	(0.00)	(0.04)	(0.04)	(0.05)	(0.04)	(0.05)
Other	-0.005	-0.016	-0.025	-0.031	-0.033	-0.025
	(0.01)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Single	0.005	0.022	0.028	0.030	0.023	0.019
	(0.00)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
GCSE/apprent	-0.020**	0.001	-0.017	-0.006	-0.001	-0.013
	(0.01)	(0.03)	(0.03)	(0.04)	(0.03)	(0.04)
A'lev/voc	0.004	0.090**	0.082*	0.084*	0.091**	0.075*
	(0.00)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Oth higher	0.001	0.026	0.023	0.026	0.034	0.012
	(0.00)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Degree	0.010**	0.117***	0.109***	0.114***	0.123***	0.096**
	(0.00)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Post-grad	0.018***	0.156***	0.158***	0.158***	0.170***	0.136***
	(0.00)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Income	0.006***	0.053***	0.054***	0.054***	0.054***	0.051***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Environment (AT18Q1)		0.223***				0.190***
		(0.02)				(0.02)
Control Pay (AT18Q2)			0.154***			0.053
			(0.02)			(0.03)
More than Profit (AT18Q3)				0.162***		0.026
				(0.02)		(0.03)
Protect Vulnerable (AT18Q4)					0.174***	0.033
					(0.02)	(0.03)
Constant	-0.079***	-0.373**	-0.274*	-0.314*	-0.322*	-0.370**
	(0.02)	(0.13)	(0.13)	(0.14)	(0.13)	(0.14)
Obs.	35,129	4,344	4,275	4,318	4,344	4,238
Adj. R-sqr.	0.044	0.184	0.159	0.160	0.165	0.179

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All specifications include regional and year fixed effects. All models incorporate individual weights. Standard errors are shown in parentheses throughout.

Table V: Whether interested in future responsible investments (ESG4) and how money should be used for such investments (ESG5)

	(1)	(2)	(3)	(4)	(5)	(6)
High Fin. Lit.	0.030***	0.139***	0.115***	0.131***	0.120***	0.105***
	(0.00)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Risk High	0.000	-0.021	-0.038	-0.036	-0.035	-0.047
	(0.01)	(0.05)	(0.05)	(0.05)	(0.05)	(0.04)
Age	-0.000	-0.004***	-0.004***	-0.003**	-0.004***	-0.004***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Male	0.004	0.044*	0.042*	0.008	0.015	0.032
	(0.00)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Adults	-0.001	-0.001	-0.001	0.002	0.010	0.004
	(0.00)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Children	0.001	0.015	0.024	0.013	0.015	0.022
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Mortgage	-0.007*	-0.077*	-0.069*	-0.075*	-0.060	-0.070*
	(0.00)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Rent	-0.012***	-0.091*	-0.095*	-0.112**	-0.092*	-0.088*
	(0.00)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Other	-0.018***	-0.101*	-0.082	-0.113*	-0.104*	-0.065
	(0.01)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
White	-0.005	0.003	0.001	0.017	0.021	0.009
	(0.01)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Employed	0.005	-0.034	-0.038	-0.036	-0.036	-0.032
	(0.00)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Self-employed	-0.000	-0.051	-0.046	-0.029	-0.016	-0.033
	(0.01)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Unemployed	-0.005	-0.053	-0.097	-0.069	-0.130	-0.110
	(0.01)	(0.11)	(0.10)	(0.11)	(0.11)	(0.12)
Students	-0.007	0.119	0.084	0.032	0.031	0.037
	(0.01)	(0.09)	(0.09)	(0.09)	(0.09)	(0.08)
Sick/disabled	-0.015**	-0.165	-0.185	-0.177	-0.119	-0.172
	(0.00)	(0.12)	(0.12)	(0.10)	(0.11)	(0.11)
Other	-0.005	-0.049	-0.080	-0.067	-0.083	-0.100
	(0.01)	(0.09)	(0.09)	(0.10)	(0.10)	(0.10)
Single	0.005	0.037	0.045	0.067*	0.051	0.043
	(0.00)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
GCSE/apprent	-0.020**	0.010	0.024	0.027	0.012	0.030
	(0.01)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
A'lev/voc	0.004	0.072	0.061	0.080	0.070	0.057
	(0.00)	(0.05)	(0.05)	(0.05)	(0.05)	(0.04)
Oth higher	0.001	0.019	-0.004	0.042	0.020	0.007
	(0.00)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Degree	0.010**	0.113*	0.100*	0.117**	0.098*	0.078
	(0.00)	(0.04)	(0.05)	(0.04)	(0.04)	(0.04)
Post-grad	0.018***	0.168***	0.136**	0.162***	0.145**	0.112*
	(0.00)	(0.05)	(0.05)	(0.05)	(0.05)	(0.04)
Income	0.006***	0.043**	0.040**	0.035**	0.030*	0.034**
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
ESG5 Return		0.437***				0.152***
		(0.02)				(0.04)
ESG5 Protect Env.			0.458***			0.282***
			(0.02)			(0.04)
ESG5 More Risk				0.315***		0.148***
				(0.02)		(0.03)
ESG5 High Cost					0.309***	0.100***
					(0.02)	(0.03)
Constant	-0.079***	-0.132	-0.049	0.182	0.227	-0.090
	(0.02)	(0.19)	(0.19)	(0.18)	(0.18)	(0.18)
Obs.	35,129	3,010	3,000	2,935	2,938	2,883
Adj. R-sqr.	0.044	0.207	0.242	0.184	0.180	0.295

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All specifications include regional and year fixed effects. All models incorporate individual weights. Standard errors are shown in parentheses throughout.

Table VI: How likely to invest in responsible investment if had money available (ESG6) and attitudes towards such investments (AT18)

	(1)	(2)	(3)	(4)	(5)	(6)
High Fin. Lit.	0.189***	0.176***	0.178***	0.162***	0.170***	0.163***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Risk High	-0.024	-0.039	-0.044	-0.055	-0.056	-0.057
	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Age	0.001	0.002	0.001	0.001	0.001	0.001
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Male	-0.081*	-0.053	-0.077*	-0.096*	-0.071	-0.069*
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Adults	-0.001	-0.003	0.001	0.001	0.000	-0.003
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Children	-0.015	-0.013	-0.003	-0.009	-0.014	-0.009
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Mortgage	0.039	0.071	0.031	0.041	0.042	0.055
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Rent	-0.075	-0.048	-0.045	-0.041	-0.072	-0.024
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Other	-0.098	-0.020	-0.075	-0.061	-0.076	-0.005
	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
White	-0.131	-0.114	-0.123	-0.137	-0.125	-0.132*
	(0.08)	(0.08)	(0.08)	(0.07)	(0.07)	(0.08)
Employed	0.044	0.073	0.034	0.006	0.059	0.033
	(0.07)	(0.08)	(0.07)	(0.07)	(0.07)	(0.07)
Self-employed	0.253*	0.241*	0.233*	0.190	0.241*	0.192*
	(0.11)	(0.12)	(0.11)	(0.11)	(0.11)	(0.11)
Unemployed	0.126	0.156	0.110	0.090	0.152	0.102
	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Students	0.178	0.175	0.194	0.084	0.172	0.146
	(0.13)	(0.13)	(0.13)	(0.12)	(0.12)	(0.13)
Sick/disabled	0.085	0.140	0.075	0.065	0.113	0.100
	(0.10)	(0.10)	(0.10)	(0.09)	(0.10)	(0.09)
Other	0.169	0.178	0.113	0.095	0.132	0.114
	(0.12)	(0.13)	(0.12)	(0.12)	(0.11)	(0.13)
Single	0.025	0.023	0.040	0.024	0.023	0.026
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
GCSE/apprent	0.093	0.065	0.054	0.076	0.083	0.041
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
A'lev/voc	0.161*	0.122	0.110	0.138*	0.143*	0.103
	(0.07)	(0.06)	(0.07)	(0.06)	(0.06)	(0.06)
Oth higher	0.055	0.032	0.011	0.038	0.037	0.010
	(0.07)	(0.07)	(0.07)	(0.08)	(0.07)	(0.06)
Degree	0.166**	0.125*	0.116	0.143*	0.150*	0.096
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Post-grad	0.204**	0.146*	0.161*	0.188**	0.169**	0.140**
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Income	-0.009	-0.019	-0.005	-0.003	-0.013	-0.010
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Environment (AT18Q1)		0.308***				0.217***
		(0.04)				(0.06)
Control Pay (AT18Q2)			0.247***			0.059
			(0.05)			(0.06)
More than Profit (AT18Q3)				0.310***		0.144**
				(0.05)		(0.06)
Protect Vulnerable (AT18Q4)					0.320***	0.065
					(0.05)	(0.06)
Constant	0.398	0.244	0.208	0.170	0.168	0.106
	(0.30)	(0.29)	(0.30)	(0.29)	(0.29)	(0.29)
Obs.	1,123	1,110	1,085	1,096	1,112	1,067
Adj. R-sqr.	0.077	0.130	0.096	0.116	0.114	0.176

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All specifications include regional and year fixed effects. All models incorporate individual weights. Standard errors are shown in parentheses throughout.

Table VII: Passive ESG

	(1)	(2)	(3)	(4)	(5)	(6)
High Fin. Lit	0.085*	0.092*	0.111**	0.103*	0.073*	0.073*
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Risk High	0.033	0.005	0.001	0.003	-0.023	-0.023
	(0.08)	(0.09)	(0.08)	(0.08)	(0.09)	(0.09)
Age	-0.004	-0.004	-0.002	-0.002	-0.003	-0.003
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Male	-0.060	-0.070	-0.083*	-0.088*	-0.051	-0.051
	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)
Adults	0.010	0.005	0.012	0.020	0.009	0.009
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Children	0.022	0.038	0.035	0.041	0.023	0.023
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Mortgage	-0.007	-0.038	-0.001	0.008	-0.001	-0.001
	(0.05)	(0.05)	(0.05)	(0.06)	(0.05)	(0.05)
Rent	0.043	0.011	0.014	0.038	0.030	0.030
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Other	-0.108	-0.117	-0.038	-0.035	-0.041	-0.041
	(0.11)	(0.10)	(0.10)	(0.10)	(0.08)	(0.08)
White	0.008	-0.003	0.013	-0.005	-0.021	-0.021
	(0.07)	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)
Employed	-0.028	-0.004	-0.012	0.009	0.005	0.004
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Self-employed	0.073	0.104	0.072	0.126	0.076	0.076
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
Unemployed	-0.318	-0.330	-0.410*	-0.368	-0.447*	-0.447*
	(0.18)	(0.19)	(0.19)	(0.19)	(0.21)	(0.21)
Students	-0.350	-0.335	-0.350	-0.312	-0.387	-0.387
	(0.27)	(0.28)	(0.32)	(0.31)	(0.28)	(0.28)
Sick/disabled	0.246*	0.231	0.125	0.231*	0.137	0.138
	(0.11)	(0.12)	(0.11)	(0.12)	(0.11)	(0.11)
Other	0.349*	0.324*	0.241	0.323	0.233	0.233
	(0.16)	(0.15)	(0.16)	(0.21)	(0.13)	(0.13)
Single	0.069	0.075	0.120**	0.101*	0.069	0.069
	(0.05)	(0.05)	(0.05)	(0.05)	(0.04)	(0.04)
GCSE/apprent	-0.041	0.034	-0.056	-0.068	-0.044	-0.044
	(0.10)	(0.10)	(0.10)	(0.10)	(0.09)	(0.09)
A'lev/voc	-0.053	0.000	-0.030	-0.035	-0.083	-0.083
	(0.09)	(0.09)	(0.08)	(0.08)	(0.08)	(0.08)
Oth higher	-0.161	-0.112	-0.162	-0.150	-0.213*	-0.213*
	(0.11)	(0.11)	(0.10)	(0.10)	(0.10)	(0.10)
Degree	-0.053	0.008	-0.040	-0.054	-0.099	-0.099
	(0.09)	(0.09)	(0.08)	(0.08)	(0.08)	(0.08)
Post-grad	0.075	0.104	0.065	0.049	-0.000	-0.000
	(0.09)	(0.08)	(0.08)	(0.07)	(0.07)	(0.07)
Income	0.064*	0.057*	0.060*	0.051*	0.042	0.042
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
ESG5 Return	0.481***				0.232*	0.232*
	(0.06)				(0.09)	(0.09)
ESG5 Protect Env.		0.485***			0.294***	0.295***
		(0.06)			(0.08)	(0.09)
ESG5 More Risk			0.231***		0.133***	0.133***
			(0.03)		(0.04)	(0.04)
ESG5 Higher Cost				0.201***	0.046	0.046
				(0.04)	(0.04)	(0.04)
Environment (AT18Q1)						-0.002
						(0.07)
Constant	-0.208	-0.155	0.085	0.116	-0.039	-0.038
	(0.34)	(0.34)	(0.32)	(0.33)	(0.31)	(0.31)
Obs.	632	632	617	622	613	613
Adj. R-sqr.	0.253	0.267	0.204	0.180	0.329	0.328

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All specifications include regional and year fixed effects. All models incorporate individual weights. Standard errors are shown in parentheses throughout.

Table VIII: Active ESG

	(1)	(2)	(3)	(4)	(5)	(6)
High Fin. LIt.	0.038	0.043*	0.036	0.043*	0.043*	0.044*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Risk High	-0.017	-0.015	-0.019	-0.019	-0.018	-0.017
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Age	-0.000	-0.000	-0.000	-0.001	-0.000	-0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Male	0.019	0.017	0.031	0.025	0.024	0.025
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Adults	-0.001	-0.000	-0.001	-0.001	0.001	0.001
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Children	0.007	0.008	0.004	0.007	0.006	0.006
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Mortgage	-0.047	-0.047	-0.043	-0.043	-0.045	-0.044
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Rent	0.054	0.053	0.050	0.043	0.039	0.042
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Other	-0.001	0.004	0.018	0.015	0.009	0.011
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
White	-0.039	-0.033	-0.042	-0.034	-0.036	-0.036
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Employed	-0.017	-0.017	-0.012	-0.019	-0.017	-0.017
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Self-employed	0.006	0.011	0.010	0.004	0.017	0.018
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Unemployed	0.008	0.011	0.022	0.023	0.023	0.020
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
Students	0.099	0.099	0.114	0.109	0.108	0.107
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Sick/disabled	0.014	0.012	0.011	-0.012	-0.017	-0.014
	(0.10)	(0.10)	(0.10)	(0.11)	(0.12)	(0.12)
Other	0.123*	0.124*	0.128*	0.128*	0.128*	0.129*
	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)
Single	-0.014	-0.008	-0.022	-0.019	-0.014	-0.015
	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)
GCSE/apprent	-0.021	-0.024	-0.040	-0.034	-0.028	-0.027
	(0.05)	(0.04)	(0.05)	(0.04)	(0.05)	(0.05)
A'lev/voc	-0.006	-0.005	-0.007	-0.015	-0.001	-0.001
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Oth higher	-0.007	-0.008	-0.022	-0.029	-0.017	-0.017
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Degree	-0.033	-0.038	-0.044	-0.045	-0.035	-0.035
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Post-grad	-0.023	-0.020	-0.034	-0.033	-0.019	-0.019
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Income	-0.011	-0.013	-0.011	-0.012	-0.013	-0.013
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
ESG5 Return	-0.055*				0.022	0.017
	(0.02)				(0.03)	(0.03)
ESG5 Protect Env.		-0.078***			-0.086***	-0.094***
		(0.02)			(0.03)	(0.03)
ESG5 More Risk			-0.031		0.009	0.008
			(0.02)		(0.02)	(0.02)
ESG5 Higher Cost				-0.058**	-0.044	-0.045
				(0.02)	(0.02)	(0.02)
Environment (AT18Q1)						0.028
						(0.03)
Constant	1.054***	1.070***	1.024***	1.054***	1.090***	1.074***
	(0.15)	(0.15)	(0.15)	(0.15)	(0.15)	(0.15)
Obs.	3,010	3,000	2,935	2,938	2,883	2,880
Adj. R-sqr.	0.024	0.028	0.023	0.024	0.028	0.028

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All specifications include regional and year fixed effects. All models incorporate individual weights. Standard errors are shown in parentheses throughout.

Table IX: Probability of shares/equity (excluding controls)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Whether interested in future responsible investment (ESG4)	0.116***								
	(0.02)								
ESG5 Return		0.005							
		(0.02)							
ESG5 Protect Env.			0.031						
			(0.02)						
ESG5 More Risk				0.000					
				(0.02)					
ESG5 Higher Cost					0.000				
					(0.02)				
Environment (AT18Q1)						0.034			
						(0.02)			
Control Pay (AT18Q2)							0.092***		
							(0.02)		
More than Profit (AT18Q3)								0.078***	
								(0.02)	
Protect Vulnerable (AT18Q4)									0.030
									(0.02)
Constant	0.284***	0.350***	0.332***	0.358***	0.359***	0.176***	0.147***	0.157***	0.186***
	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
Obs.	3,539	3,820	3,809	3,711	3,716	5,799	5,674	5,747	5,792
Adj. R-sqr.	0.014	-0.000	0.001	-0.000	-0.000	0.003	0.006	0.005	0.001

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Columns (1) to (9) refer to the probability of holding shares/equity. All models incorporate individual weights.

Table X: Amount invested in financial assets (excluding controls)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Whether interested in future responsible investment (ESG4)	1.473***								
	(0.24)								
ESG5 Return		0.077							
		(0.28)							
ESG5 Protect Env.			0.455						
			(0.26)						
ESG5 More Risk				0.075					
				(0.23)					
ESG5 Higher Cost					0.194				
					(0.23)				
Environment (AT18Q1)						0.401			
						(0.28)			
Control Pay (AT18Q2)							0.937***		
							(0.24)		
More than Profit (AT18Q3)								0.666**	
								(0.25)	
Protect Vulnerable (AT18Q4)									0.319
									(0.26)
Constant	4.382***	5.169***	4.884***	5.278***	5.261***	2.962***	2.738***	2.927***	3.221***
	(0.19)	(0.26)	(0.23)	(0.14)	(0.14)	(0.18)	(0.22)	(0.24)	(0.25)
Obs.	2,888	3,081	3,074	3,003	3,001	4,392	4,318	4,366	4,387
Adj. R-sqr.	0.021	-0.000	0.001	-0.000	0.000	0.003	0.004	0.002	0.000

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Columns (1) to (9) refer to the amount of money invested in financial assets. All models incorporate individual weights.

Table XI: Probability of shares/equity and amount invested

	Probability of shares and/or equity		Amount invested	
	(1)	(2)	(3)	(4)
High Fin. Lit	0.119***	0.120***	1.447***	1.457***
	(0.02)	(0.02)	(0.22)	(0.22)
Risk High	0.077	0.064	1.913***	1.735***
	(0.05)	(0.05)	(0.40)	(0.41)
Age	0.002	0.002	0.029**	0.027*
	(0.00)	(0.00)	(0.01)	(0.01)
Male	0.045*	0.046*	0.509*	0.516*
	(0.02)	(0.02)	(0.20)	(0.20)
Adults	0.006	0.007	0.052	0.054
	(0.02)	(0.02)	(0.14)	(0.15)
Children	-0.013	-0.011	-0.005	0.015
	(0.01)	(0.01)	(0.12)	(0.12)
Mortgage	-0.072*	-0.075*	-2.136***	-2.161***
	(0.03)	(0.03)	(0.31)	(0.31)
Rent	-0.170***	-0.171***	-2.746***	-2.735***
	(0.04)	(0.04)	(0.38)	(0.38)
Other tenure	-0.160***	-0.165***	-2.018***	-2.044***
	(0.05)	(0.05)	(0.51)	(0.50)
White	0.022	0.016	0.304	0.208
	(0.04)	(0.04)	(0.42)	(0.41)
Employed	-0.103**	-0.104**	-2.036***	-2.051***
	(0.04)	(0.04)	(0.37)	(0.37)
Self-employed	-0.077	-0.083	-1.494**	-1.595***
	(0.05)	(0.05)	(0.47)	(0.47)
Unemployed	-0.073	-0.072	-0.129	-0.137
	(0.08)	(0.08)	(0.77)	(0.78)
Students	-0.024	-0.017	0.613	0.667
	(0.09)	(0.09)	(0.86)	(0.84)
Sick/disabled	-0.130	-0.134	-0.752	-0.835
	(0.08)	(0.08)	(1.23)	(1.28)
Other state	-0.143*	-0.135	-2.706**	-2.592**
	(0.07)	(0.07)	(0.91)	(0.95)
Single	0.021	0.024	0.444	0.470
	(0.03)	(0.03)	(0.25)	(0.24)
GCSE/apprent	0.100*	0.106*	0.822	0.887
	(0.05)	(0.05)	(0.48)	(0.48)
A'lev/voc	0.060	0.065	0.533	0.612
	(0.04)	(0.04)	(0.43)	(0.43)
Oth higher	0.112*	0.115**	0.871	0.917*
	(0.04)	(0.04)	(0.46)	(0.46)
Degree	0.120**	0.124**	1.465***	1.511***
	(0.04)	(0.04)	(0.43)	(0.42)
Post-grad	0.090*	0.092*	1.747***	1.776***
	(0.04)	(0.04)	(0.43)	(0.42)
Income	0.053***	0.053***	0.871***	0.871***
	(0.01)	(0.01)	(0.13)	(0.13)
Interested in future responsible investment (ESG4)	0.065**		0.771***	
	(0.02)		(0.22)	
Interested in future resp. inv. & not invested this way before		0.104***		0.928***
		(0.03)		(0.025)
Constant	-0.344*	-0.311	-5.194**	-4.796*
	(0.17)	(0.17)	(1.93)	(1.95)
Obs.	2,827	2,827	2,583	2,583
Adj. R-sqr.	0.140	0.141	0.325	0.328
H_0 : ESG4 Exogenous				
Robust score $\chi^2(1)$	2.844; *p=0.092*	0.930; *p=0.335*	2.326; *p=0.127*	2.539; *p=0.111*
Robust regression $F(1,\infty)$	2.095; *p=0.148*	0.703; *p=0.402*	1.548; *p=0.214*	1.507; *p=0.220*

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All specifications include regional and year fixed effects. All models incorporate individual weights.

Table XII: The role of selection on unobservables

Panel A: Oster delta (δ) values to drive the effect of ESG4 to zero ($\beta = 0$)		
	Probability of Shares/Equity	Amount Invested
$R_{\max} = 1.3\tilde{R}$, δ	3.1167	2.7673
Panel B: Oster bias adjusted treatment: Alternative values of δ		
	Probability of Shares/Equity	Amount Invested
OLS β	0.065**	0.771***
	(0.02)	(0.22)
$\delta = 0.5$, $R_{\max} = 1.3\tilde{R}$, β^*	0.056***	0.643***
	(0.02)	(0.23)
$\delta = 1$, $R_{\max} = 1.3\tilde{R}$, β^*	0.046**	0.511**
	(0.02)	(0.23)
$\delta = 1.5$, $R_{\max} = 1.3\tilde{R}$, β^*	0.041**	0.475**
	(0.02)	(0.24)
Panel C: Sensitivity analysis DMP		
	Probability of Shares/Equity	Amount Invested
$\overline{r}^{bp}_{ESG}$ breakdown $\beta > 0$	29.4%	44.3%
$\overline{r}^{bp}$ breakdown $\beta > 0$	54.3%	67.1%

Notes: Obs. column 1 (2) = 2,827 (2,583). In Panel A, the Oster (2019) test of δ's values to drive the treatment effect to zero (i.e. $\beta = 0$) based upon regressions from Table XI. In Panel B: (i) $\delta = 0.5$, i.e. selection in unobservables is smaller than selection on observables; (ii) $\delta = 1$, i.e. selection in unobservables is equal to selection on observables, and; (iii) $\delta = 1.5$, i.e. selection in unobservables is larger than selection on observables. In Panel C, the results are based Diegert et al. (2023) and show the point at which the estimate of β becomes statistically insignificant. All specifications include controls as shown in Table XI as well as regional and year fixed effects. All models incorporate individual weights. Standard errors are shown in parentheses throughout. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table XIII: Matching estimation

	Probability of shares/equity	Amount invested
1. Propensity score	0.039**	0.964***
	(0.02)	(0.21)
2. Nearest neighbor	0.054***	1.084***
	(0.02)	(0.23)
3. IPWRA	0.082***	1.047***
	(0.02)	(0.22)
H_0 : covariates are balanced χ^2 (40)	47.74; *p=0.187*	30.05; *p=0.874*
Obs.	2,827	2,583

Notes: IPWRA denotes the inverse probability weighted regression adjustment estimator. In each model the treatment is binary. The outcome is binary in column (1) and continuous in column (2). All specifications include controls as shown in Table XI as well as regional and year fixed effects. All models incorporate individual weights. Standard errors are shown in parentheses throughout. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Figure 1: Heterogeneity by gender - whether interested in future responsible investing (ESG4): age and household income

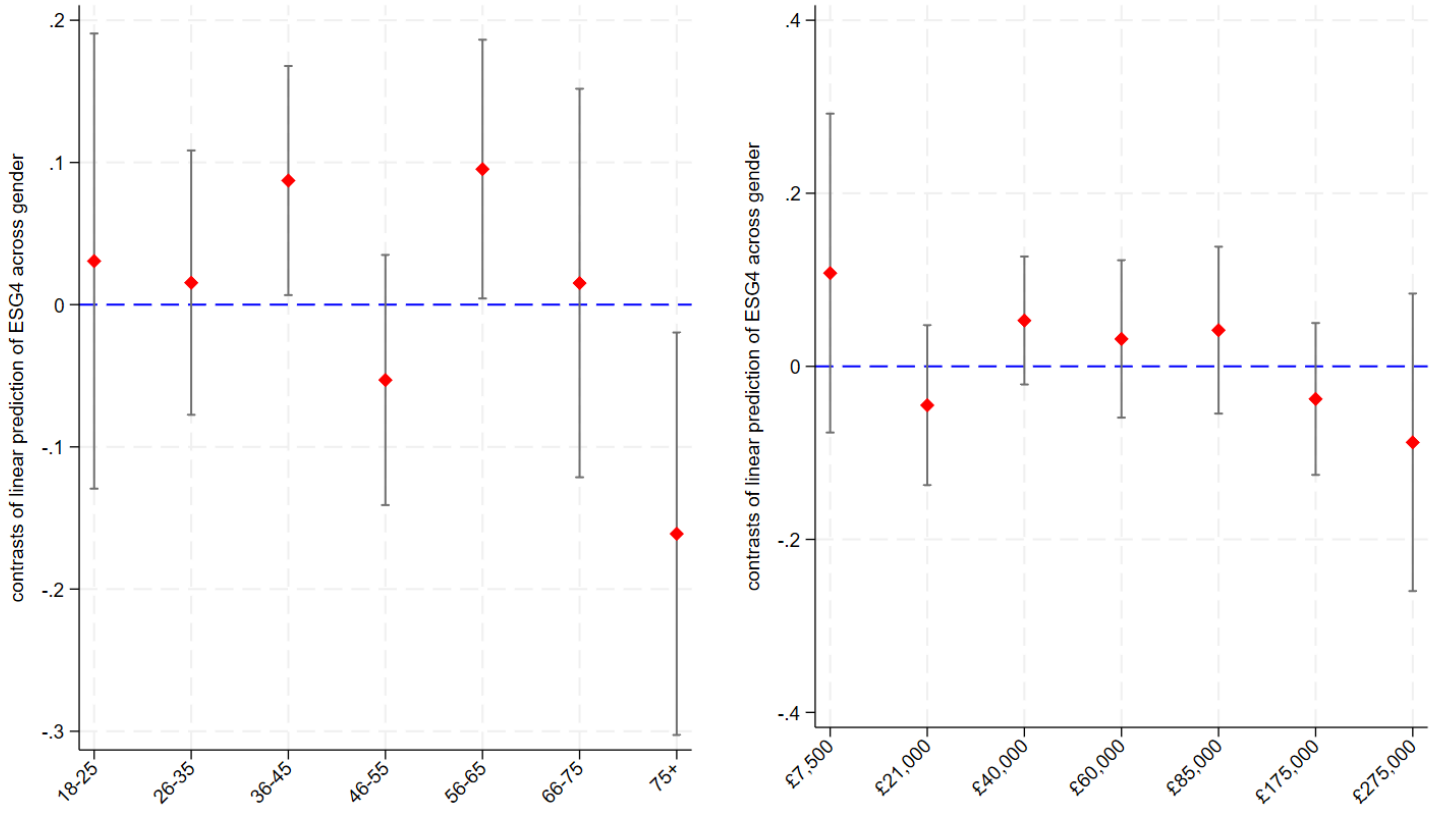

Figure 2: Regression sensitivity analysis DMP bounds:
probability of shares/equity

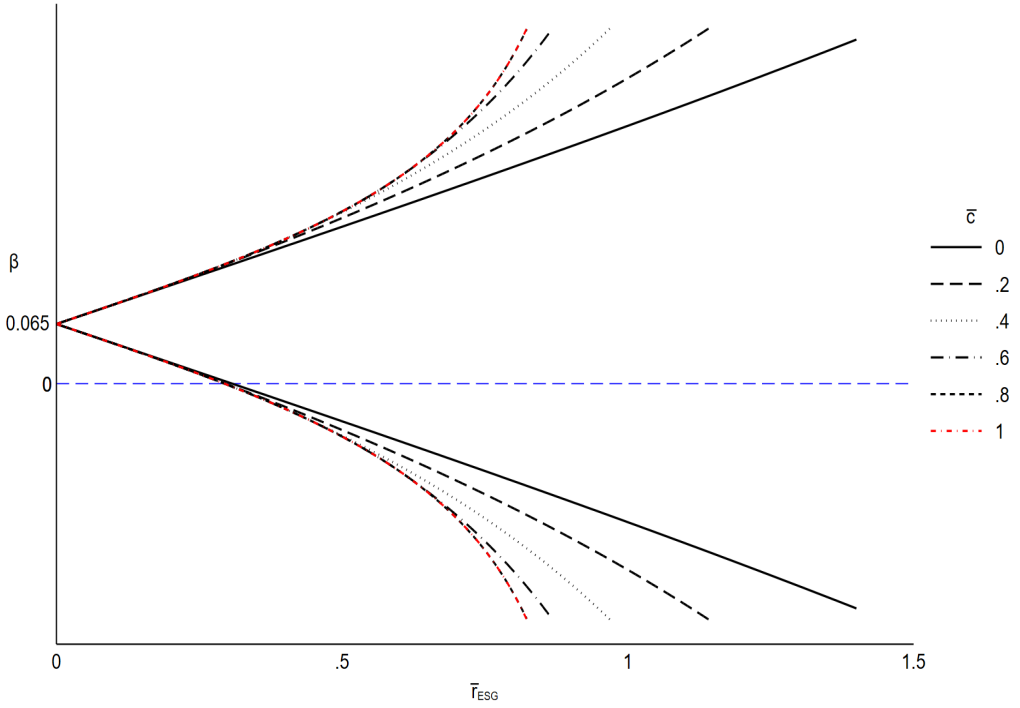

Figure 3: Regression sensitivity analysis DMP bounds:
amount invested

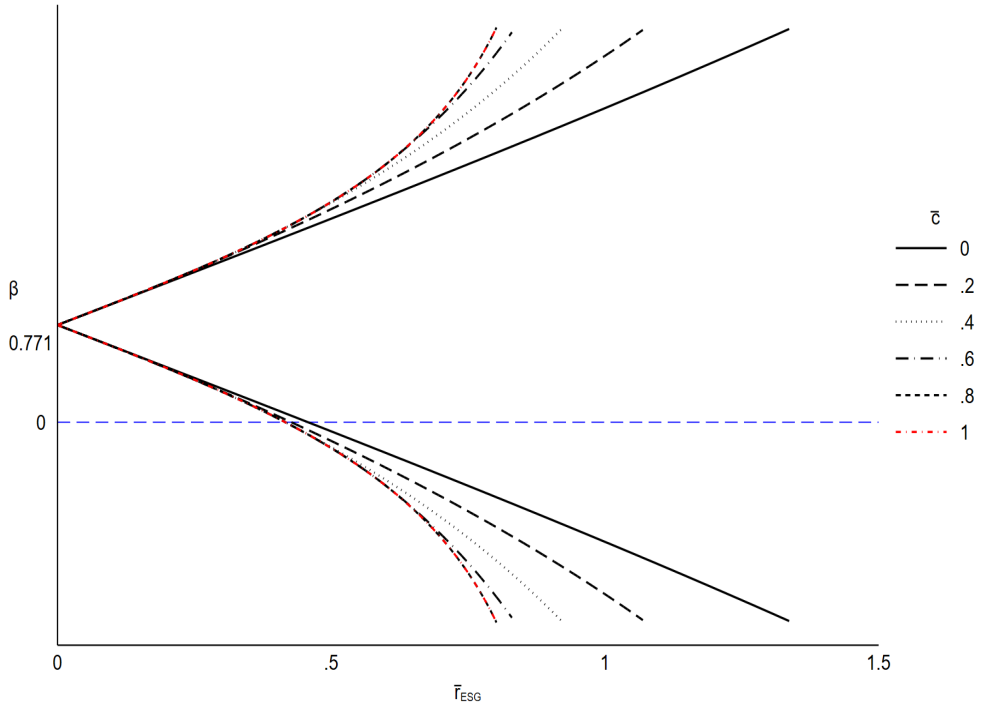

Figure 4: Balance plot of covariates

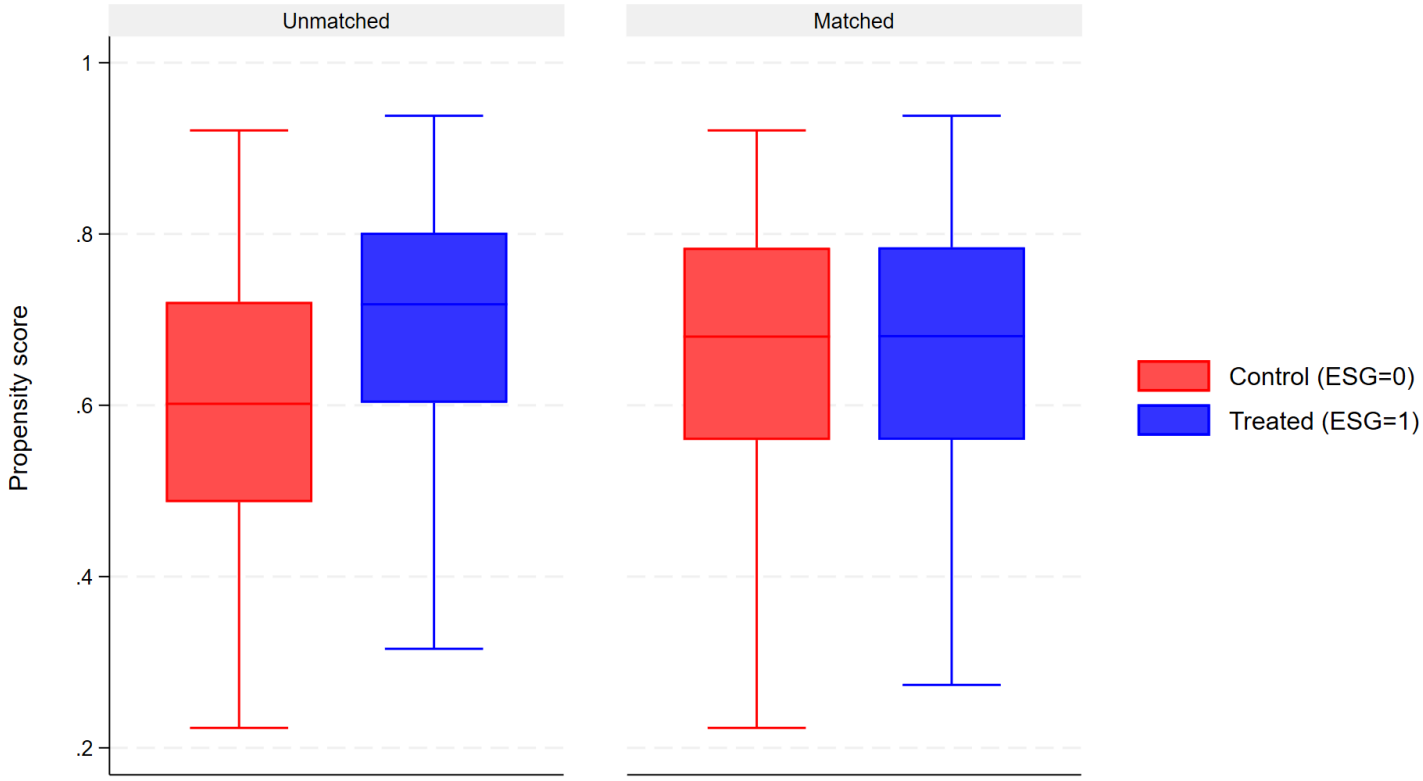

Figure 5: Heterogeneity by gender: age and education - contrasts by ESG

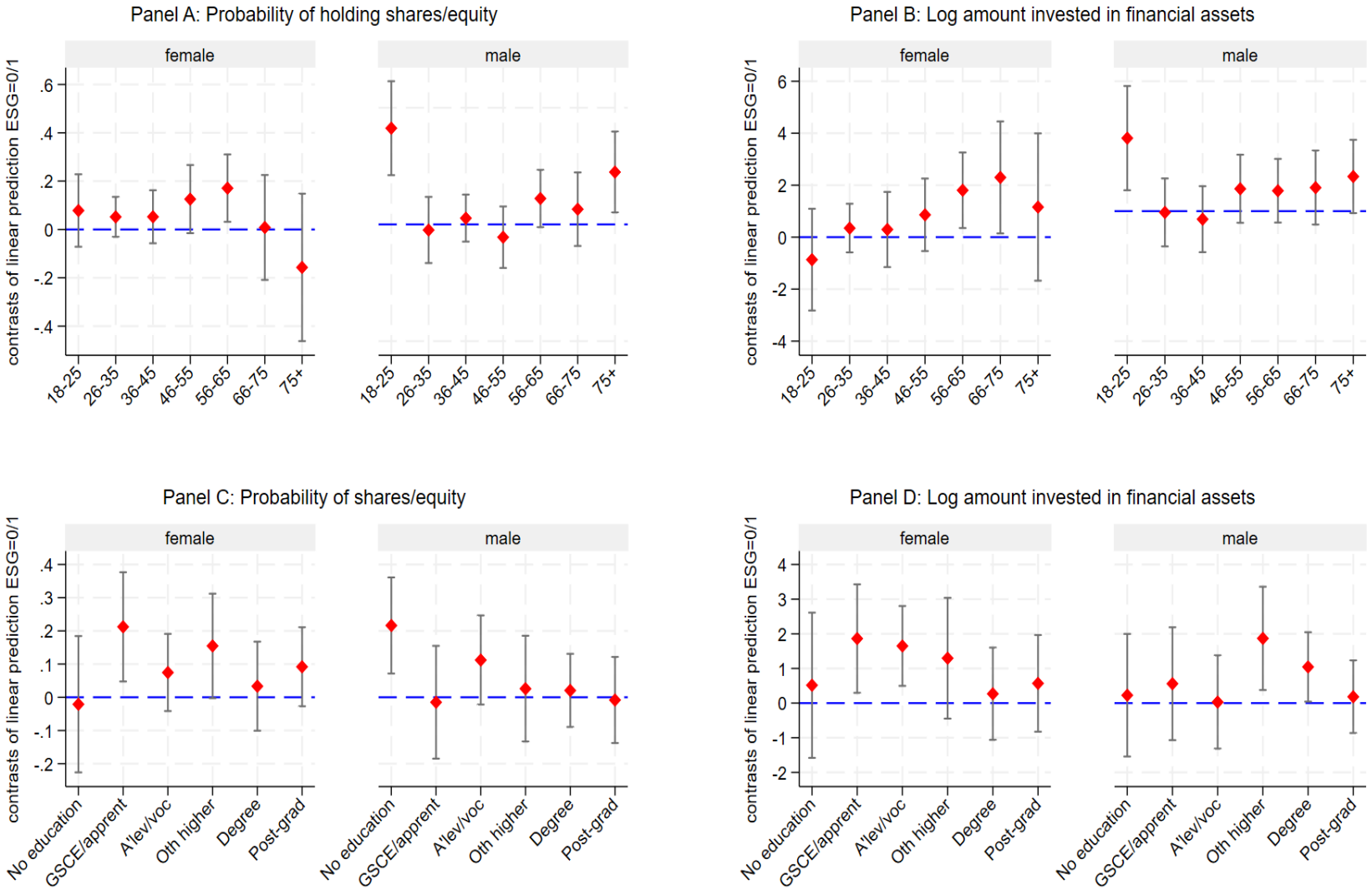

Figure 6: Heterogeneity by gender: financial literacy and risk tolerance - contrasts by ESG