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TO TRUST IS GOOD, BUT TO CONTROL IS BETTER: HOW INVESTORS DISCIPLINE FINANCIAL ADVISORS' ACTIVITY

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To trust is good, but to control is better: How investors discipline financial advisors' activity*

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Abstract

Using a survey of clients from one of the largest Italian banks, we find that investors with low level of trust in professional advisors seek financial counselling, but make their decisions autonomously. We investigate whether these investors exert some form of control over the recommendations they receive, and, if so, which one. Investors can push advisors to provide better recommendations either by asking for a second expert's opinion, such as in the case of credence services, or by monitoring closely the advisor's activity themselves. We find that three quarters of investors do not exert any control on advisors. Different types of financial competence – *self-assessed* or *test-based* – serve different purposes. The investors featuring higher *self-assessed* financial competence are more likely to control the advisor's activity. The mechanism through which investors exert control over the advisors' activity depends instead on the investors' degree of *test-based* financial literacy. Investors with high financial literacy directly monitor the advisors' activity. Investors with low financial literacy are more likely to seek a second professional opinion in support of the recommendations previously received. Our findings suggest that improving investor financial knowledge may foster direct control of the advisor's activity. Moreover, facilitating the comparison between financial products by standardized and centralized information may be very effective to protect poorly literate investors.

Keywords: Financial advice, Financial literacy, Credence services

JEL Classifications: G11, G24, D80

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1 Introduction

Investors are being confronted with increasingly complex financial decisions, partly because shifting economic policies have forced them to take on more responsibilities and partly because the menu of retail financial products has been growing steadily. This poses a serious challenge to investors who want to buy the best possible financial product, given their lifetime needs. Several authors (Georgarakos and Inderst, 2011; Inderst and Ottaviani, 2012a,c) argue that the optimal financial choice depends on investor-specific need and personal characteristics. For example, the best real estate mortgage, the optimal pension scheme or long-term saving plan depend, respectively, on the client's expected income stream, desired level of well-being at retirement, risk attitude or tax bracket. To identify the optimal financial product, investors can rely on the advice of experts. Gennaioli et al. (2015) consider professional financial advice as a *credence service* similar to medicine, where "money doctors help investors to get the most appropriate treatment".¹ Like for medical treatments, the accuracy of the expert in solving the client problem is not observable, the final success of the service is not contractible, and the expert's effort is costly, so that the investor–advisor relation is affected by moral hazard (Pesendorfer and Wolinsky, 2003; Fong, 2005; Dulleck and Kerchmbamer, 2006). Investors who rely on professional financial advice either do so because they trust their advisors (Gennaioli et al., 2015), or because they are not aware of advisors' moral hazard (as the *naive* investors in Inderst and Ottaviani 2009, 2012c), or because, despite anticipating a conflict of interest with the advisor, they think they are able to control effectively the quality of the recommendations they receive.

This paper studies whether investors exert some form of control over the recommendations they receive from professional advisors. More precisely, we check whether investors push advisors to give them better advice either by searching for a second professional opinion (as postulated by Pesendorfer and Wolinsky, 2003) or by monitoring the advisor's activity themselves. When the advisor expects the investors-advisees to seek a second opinion, he has stronger incentives to provide sounder recommendations. Alternatively, as in any principal-agent relation with a conflict of interests, advisors are pushed to exert more effort if the advisees closely monitor their activity. We also investigate how the investors' degree of financial knowledge, measured both in subjective and in objective terms, affects the control mechanism they enact. Our main hypothesis is that while highly financially knowledgeable investors can control the advisor's activity by themselves, through direct monitoring, the least financially literate ones may search for a second opinion.

¹Gennaioli et al. (2015), p. 92.

Identifying the mechanism of control used by investors to incentivize advisors to provide better recommendations, if any, is important in order to design an effective consumer financial protection regulation (Campbell et al., 2011). For example, if more knowledgeable investors verify professional advice on their own, then clear and transparent disclosure of fees, returns and other characteristics of the recommended financial product simplify their tasks. Disclosure and transparency are sufficient for highly literate investors, but not for low literate ones: they need standardization of products to be able to compare different recommendations.

We test our predictions using the 2007 Unicredit Investors Survey (UCS) conducted on a sample of 1,676 individuals with a current account in one of the banks of the largest Italian banking group.

The survey contains information on the way individuals manage their financial investments, that is, whether they invest autonomously ("Self"), ask for advisor counselling but decide independently ("Advice"), or fully delegate their choice to a professional advisor ("Delegation"). According to Gennaioli et al. (2015), professionals guide investors with little knowledge in the acquisition of risky assets and investors delegate their risky investments to the advisor they trust the most. When considering the subsample of investors holding risky assets, we show that only 20% of investors delegate their investments, while 69% of investors consult advisors but then make their decisions autonomously. If we consider the subsample of investors holding risky assets and relying on some form of professional counselling, we find that 74% of them do not exert any form of control on advisor's activity, which suggests either a widespread investors inertia (Bhattacharya et al., 2012) or a large presence of naive investors (Inderst and Ottaviani, 2012c).

When it comes to explain which investor's characteristics affect the control behavior, we find that *self-assessed* financial literacy and *test-based* financial literacy play two important distinct roles.

The degree of *self-assessed* financial literacy is strongly related to the probability of exerting some control activity: Investors who are more confident in their own financial knowledge are more likely to check the advisors' activity. As suggested by Allgood and Walstad (2016), the self-assessed degree of knowledge reflects a person's self-image and is then natural to observe that self-confident investors rely on their own judgement to control the advisor's behavior.

The degree of *test-based* financial literacy, instead, impacts the disciplining mechanism put in place. Investors with the highest level of test-based financial literacy exert a direct form of control on advisors' activity. Instead, investors with the lowest level of financial literacy are more likely to compare the recommendations they receive with second opinions, as postulated by Pesendorfer and Wolinsky (2003) for

standard credence services. These results are robust if we take into account the potential endogeneity of both the level of trust in advisors and the degree of financial literacy.

Our findings are consistent with some related results in the literature. For example, Bhattacharya et al. (2012) report that investors with low trust in the advisors and a low level of financial sophistication are less likely to demand professional advice, even when this is certified as unbiased. According to the credence service view adopted in our paper, investors with low trust in advisors probably do not believe they are being offered unbiased recommendations. Investors with low trust and low financial literacy may want to verify the recommendations by asking to a second expert, which may not have been possible in the setting described by Bhattacharya et al. (2012). That could be a reason why they did not demand advice in the first place.

Stolper and Walter (2015) consider the case of neutral financial advice generated by a computer algorithm, which has been certified to be free from conflicts of interest and efficient.² They report that more financially knowledgeable households follow advice to a lesser extent than the less knowledgeable ones. This behavior could be due to the fact that more literate investors are more likely to check the recommendations they receive, as in our study. If these investors consider that the recommendations are not sufficiently accurate, they may decide not to follow them.

The remainder of this paper is structured as follows. Section 2 describes the related literature. Section 3 reports the empirical analysis and Section 4 concludes the paper. In the Appendix A we describe thoroughly all the main variables used in our analysis, while Appendix B collects additional tables with further robustness checks.

2 Related literature

Inderst and Ottaviani (2012b) argue that, in many important financial decisions, the value realized by an investor operating a financial transaction depends on the match between the investor's needs and the characteristics of the selected product, and only a professional advisor is able to identify the correct match. These characteristics are specific to *credence goods*, which are 'goods and services where an expert knows more about the quality a consumer needs than the consumer himself' (Dulleck and Kerchbamer, 2006,

²The financial advice studied in Stolper and Walter (2015) consists of a unique "set of product-level recommendations covering retirement provision as well as the insurance of risks relating to income, property, and health of all household members" (Stolper and Walter, 2015, p. 5).

p.5).

The credence goods approach is not new in the industrial organization literature (Wolinski, 1993, 1997; Fong, 2005).³ In finance, Gennaioli et al. (2015) explicitly refer to financial advice as a credence service through which professionals guide investors with little knowledge in the acquisition of risky assets. The authors argue that investors delegate their risky investments to the advisor they trust the most because it makes them feel less anxious than if they acted on their own, just as patients follow the treatment prescribed by a doctor they trust.⁴ Other works also highlight the positive effect of trust on stock market participation, as, for example, Guiso et al. (2008) and Georgarakos and Inderst (2011), especially for households with low financial capability. A peculiar characteristic of the model of Gennaioli et al. (2015) is that an investor with high trust in an advisor dismisses the latter's agency bias (Inderst and Ottaviani, 2012a,b), incentives to sell products with higher fees (von Gaudecker, 2015), and incentives to mis-sell products (Inderst and Ottaviani, 2009).⁵

We conjecture that some investors with low confidence in their advisor could instead rationally anticipate the potential conflict of interest in the client–expert relation and exert some form of control to overcome it. Considering the case of clients aware of the moral hazard inherent in credence services, Pesendorfer and Wolinsky (2003) study the effects of a mechanism that allows them to discipline the expert, that is, the search for a second opinion. Alternatively, we conjecture that in financial markets an investor could verify the advisor's recommendation on his own, by paying monitoring costs.

Our work contributes to the vast literature studying the relationship between financial knowledge and the demand for professional advice.

Evidence from the economic literature suggests that financial literacy and financial advice may be either complements or substitutes. Some papers argue that the objective level of financial literacy of investors explains their demand for advice.⁶ Using the 2009 Financial Industry Regulatory Authority (FINRA) Financial Capability Survey, Collins (2012) finds that more knowledgeable investors are more likely to seek financial advice than those with lower financial literacy. This same result is confirmed by van Rooij et al.

³For an exceptionally comprehensive review, see Dulleck and Kerchbamer (2006).

⁴Recently, Pauls et al. (2015) find that the level of trust in professional advisors is not homogenous across financial intermediaries in Germany. They find that the level of trustworthiness of financial advisors acting in community banks is larger than that of advisors of large banks.

⁵With reference to the mortgage market, Woodward and Hall (2000) emphasize that mortgage loans are leading examples of transactions where experts on one side of the market take advantage of consumers' lack of knowledge and experience. The authors find that confused borrowers overpay for brokers' services and that borrowers sacrifice at least \$1,000 due to shopping from too few brokers.

⁶See Kim et al. (2016) for a study on the optimal delegation of investment management in a life cycle setting.

(2011), Bucher-Koenen and Koenen (2011), and Calcagno and Monticone (2015) using different datasets. Similarly, Hacketal et al. (2012) suggest that financial advisors are matched with wealthier and higher income households.

Instead, Georgarakos and Inderst (2011) find that investors who choose to participate in the stock market rely on advice only if their own level of financial education is sufficiently low. Also Hung and Yoong (2013) support the idea that the demand for professional advice could substitute for the level of financial knowledge.

Other papers emphasize the relation between the subjective, i.e. the self-assessed level of financial literacy, and the demand of advice. Kramer (2016) reports that households with higher confidence in their own financial literacy are generally less likely to seek professional advice, while we find, more specifically, that they are less likely to fully delegate their investment decisions.

We add to this literature by showing the different impact of test-based and self-assessed degrees of financial literacy on the control activity that investors exert on advisors. More self-confident investors are more likely to control their advisors' activity. Instead, the test-based level of financial literacy influences the mechanism of control that investors put in place. Those with the highest degree of test-based financial literacy directly monitor their advisors, while the least financially literate ones are more likely to seek a second expert's opinion.

Another strand of literature investigates the choice by the investors to follow or not professional advice.

Some authors study whether the degree of financial education affects the likelihood to seek advice. Bhattacharya et al. (2012) highlight that the mere availability of unbiased financial advice is a necessary but not sufficient condition for benefiting retail investors. They find that investors who lack financial sophistication and trust are less likely to seek advice, even when this is unbiased and offered for free. Calcagno and Monticone (2015) find that investors with higher financial literacy are more likely to consult financial advisors than investors with a low degree of financial literacy because the former anticipate that they will receive valuable information from advisors.

There is some evidence that investors do not follow advice even when it has been certified as unbiased. Hacketal et al. (2010) analyze investor decisions to follow a recommendation that is truthfully certified as unbiased. Studying the trading behavior of the retail clients of a German brokerage firm, the authors show that the greater the investor's financial knowledge and perception of conflicts of interest, the less likely the investor is to follow the expert's advice. This result is also confirmed by Stolper and Walter (2015), regarding basic retirement choices and the insurance of major life risks.

Our paper suggests that both the choices to seek and to follow professional advice can be driven by the availability of affordable control mechanisms. Investors who do not delegate their portfolio management because of a lack of trust (Gennaioli et al., 2015) may not follow or even not ask for advice in the first place, if they anticipate the advisor’s bias cannot be reduced either by asking for a second expert’s opinion or by directly monitoring the advisors’ recommendation.

3 Data and preliminary results

The empirical analysis relies on the 2007 Unicredit Survey (UCS), which draws from the population of clients of one of the three largest European banking groups.⁷ The 2007 wave interviewed 1,676 individuals with a current account in one of the banks of the Unicredit Group based in Italy. The sample consists of clients in the age group 21–75 years, holding a current account and at least 10,000 euros. Due to these two last restrictions, the UCS over-samples rich and old investors with respect to the Italian population.⁸ The UCS goal is to study retail customers’ financial behavior and their expectations towards the bank. It provides detailed information on households demographic structure, labour market position, individual financial assets holding (both within and outside the bank), and income. Furthermore, the survey contains data on the attitudes towards saving, financial investment, risk propensity and, more importantly for our purposes, on the degree of financial literacy of households and their relation with banks and financial advisors. In particular, the survey explicitly measures the degree of trust of the respondents in their financial advisor, and the nature and frequency of their interaction. Table 1 reports the descriptive statistics of the variables considered in our analysis.⁹

The sample selected for our study includes only account holders who report that Unicredit is their main or only bank, leaving us with 1,581 observations. After accounting for sample selection, we focus on 1,116 investors holding risky assets,¹⁰ representing about 70% of the entire sample. Overall, the UCS sample covers

⁷The UCS survey was repeated for the last time in 2009, but this last wave contained only a very limited number of questions, mostly concerning the respondents’ degree of risk aversion. Therefore, we could not exploit this last wave for our purposes. By comparing the 2007 and 2009 waves, Guiso et al. (2013) find that risk aversion increased substantially after the financial crisis of 2008.

⁸Guiso and Jappelli (2009) report that the individuals in the UCS sample are older than in the SHIW (Bank of Italy’s Survey on Household Income and Wealth). Throughout the paper, we compare some of our basic findings with the ones contained in SHIW, in CONSOB (2016) and in Gentile et al. (2016), which are all based on representative samples of the Italian population.

⁹Further information concerning the UCS can be found in Guiso and Jappelli (2009), and Calcagno and Monticone (2015).

¹⁰The survey considers as risky assets: bonds, stocks, mutual funds, insurance-based investment products, index funds, personalised portfolio management and derivatives.

individuals who participate more in financial markets than the general Italian population.¹¹ Although these data are not representative of the Italian population, we believe that they are well suited to answer our key research question, i.e., whether investors seeking professional advice exert some form of control over it, and if so, which one. Indeed, even though the UCS does not cover households without a current account and those belonging to the lowest wealth percentiles, these are unlikely to hold risky assets (van Rooij et al., 2011) and to demand professional advice (Hacketal et al., 2012).

The main variables of interest for our analysis are related to characteristics of the investor, such as trust in advisors and financial knowledge, as well as to characteristics of the investor-advisor relation. Please refer to Appendix A, for a precise definition of all the variables presented in Table 1 and for the precise wording of the survey questions.

3.1 Summary statistics

The degree of trust in advisors is obtained from the answer (on a scale of one to five) to a specific question on the investor’s level of trust in bank or financial advisors. The median level of trust is quite high (4 over 5), as well as its standard deviation (0.905). We use two measures of financial literacy: a *test-based* (or objective) measure, and a *self-assessed* (or subjective) measure. The objective measure of financial literacy is constructed as in Guiso and Jappelli (2009) and Calcagno and Monticone (2015): it is related to the correct answer to eight questions regarding inflation, interest rate compounding, risk diversification, and products’ riskiness, similarly to the questions in van Rooij et al. (2011) and Kramer (2016). The overall distribution of the correct answers is shown in Fig. 1. The average respondent answers correctly to 4.6 questions and the median number of correct answers is five. Our test-based degree of financial literacy is higher than the one obtained by Gentile et al. (2016) on a sample representative of the whole Italian population: this was largely expected, since the literature widely reports a positive relation between financial literacy and wealth (van Rooij et al., 2011, among others).

The degree of self-assessed financial knowledge is equal to the self-reported ability to manage financial investment (on a scale of one to five) relative to the average. Lusardi and Mitchell (2014) and Kramer (2016) show a frequent substantial mismatch between individuals’ self-assessed knowledge and their actual knowledge. Specifically for the UCS sample, Guiso and Jappelli (2009) find that these two measures are only weakly correlated and can therefore have independent predictive power. From Table 2, which reports the

¹¹When considering the entire Italian population, the level of financial markets participation is 55% (CONSOB, 2016).

correlation matrix of the relevant regressors (and instruments) considered in our analysis, we can observe that the correlation coefficient between self-assessed and test-based financial literacy is statistically significant and equal to 0.330. The pattern of correlations of other variables matches what previously found in the literature: financial competence is positively associated with income, education, financial sector employment, experience in financial markets, and negatively associated with risk aversion and the female dummy (Lusardi and Mitchell, 2007; Hacketal et al., 2012).

The survey provides information on other characteristics of the investor–advisor relationship that are crucial for our analysis. Specifically, it contains information on the way individuals manage their financial investments, that is, whether they decide autonomously ("Self"), ask for advisor counselling but decide independently ("Advice"), or fully delegate their choice to a professional advisor ("Delegation"). In Table 3, we report the percentages of investors falling in these three categories, for the full sample of investors having Unicredit as main bank, as well as for the subsample of those holding risky assets. Overall, 63% of the investors for which Unicredit is the main bank rely on professional counselling, either by "Advice" or by "Delegation". The fraction of investors choosing "Advice" is the largest, representing the 48% of the full sample and the 69% of investors holding risky assets. Those choosing "Delegation" represent 14% of the full sample and the 20% of the investors holding risky assets.

Moreover, the UCS reports whether the respondents have ever asked the bank about products managed by other banks or financial institutions (variable "Second Opinion") and how often they meet the financial advisor at the bank (variable "Monitoring"). Concerning the "Second Opinion", only 6% of the whole sample has ever asked their main bank, i.e. Unicredit, for products proposed by other banks, while the median respondent never did so (see Table 1).

To measure the frequency of meetings between investors and their advisors, we adopt a three-category ordered variable equal to 0 ("Rarely") if the frequency of meetings is lower than once a year, 1 ("Sometimes") if the investors meets the advisor from once a year to once every three months, and 2 ("Frequently") if the meetings are more at least one per month. In Table 1, we observe that the median frequency is 1, that is, that the median respondent meets the advisor less frequently than once every quarter but more than once per year. In our empirical analysis, we use "Second Opinion" and "Monitoring" to seize the control mechanisms which are the key focus of our paper.

3.2 Preliminary results

From Table 3 we observe that the higher the level of trust in the advisor, the more likely the investor fully delegates his choice to the latter. This preliminary evidence supports the model developed by Gennaioli et al. (2015): Investors who trust their advisors more are also more likely to invest in risky assets.

The level of trust is likely to be correlated with other variables influencing the way investors make their decisions, notably their financial competence. Table 3 also reports the level of test-based and self-assessed financial knowledge for the three groups of investors choosing the different management styles, i.e. "Self", "Advice" and "Delegation", respectively. Low levels of financial literacy, either test-based or self-assessed, predict a higher probability to fully delegate investment decisions to professional advisors.¹²

To assess more precisely the effect of trust and financial competence on the investors' demand for advice, we consider a multivariate regression setting that includes the standard control variables used in the literature: demographics, income, wealth, the experience with the financial sector, and the area of residence. Given that the UCS asks only respondents who hold risky assets how they manage their investment, we estimate an ordered probit model with sample selection. Table 4 presents the results of this regression model.

In column (1) of Table 4, we report the estimates of a probit model in which investors either hold risky assets or not. We use the level of risk aversion as exclusion restriction here. More risk-averse investors are less likely to hold risky assets, as expected. In addition, the test-based level of financial literacy has a strong positive impact on holding risky assets, as in (Guiso and Jappelli, 2009; van Rooij et al., 2011; Clark et al., 2016), as does the measure of self-assessed financial capability.

In columns (2a) to (2c) of Table 4, we present the effects of trust, test-based financial literacy, and self-assessed financial competence on the way investors use professional counselling. We run a Heckman ordered probit model in which the dependent variable is, respectively, "Self" (column (2a)), "Advice" (column (2b)), or "Delegation" (column (2c)). The level of trust increases the probability of full delegation, as predicted by Gennaioli et al. (2015), while it decreases the probabilities of both asking for advice and investing autonomously. While both financial literacy and self-assessed financial knowledge drive the choice to hold risky assets, only the latter appears to have a significant impact on the choice to rely on professional advice, consistent with Kramer (2016).

¹²The relation between financial competence and the choice to self-direct portfolio investment is less clear-cut. While higher self-confidence seems to predict a higher probability to decide autonomously rather than seeking advice, test-based financial literacy points to the opposite direction: a higher financial literacy is associated with investors seeking advice but deciding autonomously.

Investors who received professional advice and spent time with their advisors are more likely to develop a higher level of financial sophistication and a different degree of trust in the advisor. This consideration suggests that trust and financial competence may be endogenous with respect to the investor choice. To address this potential endogeneity of trust and financial literacy, we report, in columns (3) and (4a) to (4c) of Table 4, the instrumented version of the previous model.¹³ We instrument the level of trust in advisors with two variables capturing the general level of trust.¹⁴ To instrument financial literacy, we adopt the regional level of financial literacy derived from the Bank of Italy’s SHIW and a dummy variable indicating whether the head of household was in the group of best students when attending school at ages 11–14.¹⁵ The regressors’ correlation matrix of Table 2 also confirms that the instruments are significantly positively correlated with the endogenous variables. Dealing with ordered probit models, we adopt the control function approach, that is, a two-stage residual inclusion (2SRI) estimation, as described by Wooldridge (2010).¹⁶ Also this instrumented version of the ordered probit model confirms the positive role of trust in the choice to fully delegate.¹⁷

4 The control mechanisms: direct investor monitoring and search for a second opinion

The key contribution of our paper is identifying the disciplining mechanisms, if any, that investors put in place in order to control the advisor’s activity.

Given the similarities between financial advice and credence services suggested by Gennaioli et al. (2015), we refer to Pesendorfer and Wolinsky (2003) to predict the behavior of wary investors asking for advice. Pesendorfer and Wolinsky (2003) present a model of standard credence goods where clients can discipline an expert’s activity only by seeking a second professional opinion that confirms the recommendation previously

¹³The instrumental variable approach is implemented in the selection equation, since the Wu–Hausman test of endogeneity rejects the hypothesis of exogeneity of the two (potentially endogenous) regressors in the selection equation (p -value=0.00), but not in the outcome equation (p -value=0.12).

¹⁴See Appendix A for further details on the instruments.

¹⁵Note that the number of observations for the instrumented version of the selection and outcome equations drops from 1,581 and 1,116, to 1,550 and 1,098, respectively. This is due to missing observations (31 in the full sample, 18 in the selected sample) after instrumenting individuals’ financial literacy with the average regional financial level in the SHIW dataset (it being impossible to associate any Italian birth region for clients born abroad).

¹⁶Since the fitted residuals from the first-stage are included in the second stage-regression as a additional regressors, the standard errors need to be corrected (Wooldridge, 2010, pp.126–129). Standard error correction is achieved by bootstrapping the relevant equation estimation.

¹⁷Since the system of equations is over-identified, we report, at the bottom of Table 3, standard test statistics that confirm the validity of the adopted instruments.

received. For standard credence services such as medical advice, the cost of checking whether the doctor's recommendation is accurate is too high for most patients. This cost is likely to be similar across patients endowed with different levels of education, except for those who studied medicine. Instead, for a service such as financial advice, the degree of investor competence could play a role in the strategic interaction between advisor and client (Collins, 2012; van Rooij et al., 2011; Hung and Yoong, 2013). More financially educated investors are better able to find good advisors (Hacketal et al., 2012; Lusardi and Mitchell, 2014), to understand better the characteristics of the advised portfolios (Bucher-Koenen and Koenen, 2011), and generally pay lower costs in evaluating a recommendation. Instead of relying on second opinions, these investors can verify the accuracy of the advisor's choice by directly monitoring the expert's activity at a cost that decreases with their degree of financial literacy.

We report in Table 5 the percentages of investors who enact any form of control on the advisor's activity relative to the sample of investors holding risky assets and relying on some form of professional counselling, either "Advice" or "Delegation" (i.e., we exclude those who invest autonomously, "Self").¹⁸ We observe that about 74% of these investors do not exert any form of control on the advisor's activity. This evidence suggests that about three quarters of investors consulting an advisor display some form of inertia (Bhattacharya et al., 2012; Stolper and Walter, 2015), or they are unaware of the agency bias of professional advisors (as naive investors in Woodward and Hall, 2012; Inderst and Ottaviani, 2009, 2012c). About 23% of investors monitor the advisor directly, while 7% choose the second opinion as a disciplining device. Interestingly, only a small subsample (3.7%) exerts both types of controls, i.e., direct monitoring and search for a second opinion, which in general are selected alternatively (19.2% and 3.2%, respectively).

On the basis of these observations, we formulate our first main empirical prediction.

Hypothesis 1: *among investors who hold risky assets and rely on some form of professional counselling, those who are more aware of the advisor's bias are more prone to control the advisor's behavior.*

We conjecture that awareness of the advisor's bias is correlated with the investors' degree of financial knowledge. Inderst and Ottaviani (2009) argue that less literate households may be less aware of the agency bias of professional financial advisors, and therefore they may not discipline them. Several other papers find that also the self-assessed degree of financial knowledge affects households financial behavior. Kramer (2016) shows that investors with a higher confidence in their own financial literacy are less likely to seek professional

¹⁸Note that the number of individuals in this sub-sample (992) is equal to the number of investors holding risky assets (1116) minus the number of investors choosing "Self" (124), that is 11.11% of 1116, as from Table 3.

advice. Allgood and Walstad (2016) report evidence that the subjective degree of financial knowledge has predictive power over the test-based measure of financial knowledge to explain financial behavior. Therefore, to test this first hypothesis against the data, we check how the subjective and objective measures of financial literacy affect the likelihood that investors exert some form of control over advisors' recommendation.

Hypothesis 2: *among investors who hold risky assets and rely on some form of professional counselling, those with low-cost information production are more likely to directly monitor the advisor, while investors with high-cost information production are more likely to search for a second opinion.*

We test this second hypothesis against the data: we expect more literate investors to directly monitor the advisor's activity and less literate ones to use a second opinion device to discipline the advisor's behavior.

To test these two predictions, we need to perform a further selection step among investors holding risky assets in order to exclude those who invest without any professional counselling. Building on the model of Pesendorfer and Wolinsky (2003), we construct a measure proxying for the expected payoff the investor earns by referring to a professional advisor. While the expected benefit of seeking advice is proportional to the quality of the advice, the disciplining cost depends on the investor's ability to control the advisor's activity. A rational investor asks for advice only if the expected benefit of doing so exceeds the expected cost. Hence, we should observe that investors obtaining lower benefits from advice or paying higher control costs are less likely to ask for advice. We measure the net benefit of asking for advice with the variable *Expected payoff of advice/delegate*.¹⁹ A client is predicted to have high expected payoff of advice/delegation if, in choosing a bank, he highly values a large variety of products, competitiveness of prices and product performance as well as consultants' competence, and, at the same time, he considers the proximity to home and the availability of telephone/internet services as means to reduce costs.

In Table 6 and 6a, we run a Heckman probit regression with double sample selection. In the first column, we report the result of the first sample selection, which restricts to investors holding risky assets. Column (2) shows the results of the second selection equation, which identifies investors who ask for financial counselling. In particular, in Table 6, we investigate the behavior of investors choosing "Advice", while in Table 6a we investigate the behavior of investors choosing "Advice/Delegation". The exclusion restriction adopted in the second selection level is precisely the *Expected payoff of advice/delegate*: the larger this payoff, the more likely the investor asks for financial advice. Indeed, we find that this measure significantly explains (coeff. = 0.070) the choice of relying on professional counselling. The level of trust also has a very strong, positive

¹⁹See Appendix A, for details on the construction of this variable.

effect on this decision.

As a proxy measure of direct monitoring, we use the frequency of meetings between investors and their advisors, i.e. the variable "Monitoring". We interpret frequent meetings as a signal of investors following closely the work of their advisor, repeatedly asking him for information and clarifications, therefore pushing the latter to spend time on his case.²⁰

To capture the fact that an investor seeks for a second opinion, we use the variable "Second Opinion", a binary question asking whether the respondent ever asked their bank about products provided by other banks or financial institutions. We interpret a positive answer to this question as a signal that the investor controls advisors' recommendations through a comparison mechanism, i.e., asking to a second expert: Investors who ask their advisor at Unicredit products sold by other banks reveal to be aware of the existence of these products and, possibly, their intention to compare different products before purchasing one of them. These investors are likely to use the same attitude with respect to the products offered by Unicredit.²¹

In columns (3a) to (3c) of Table 6, we observe that a higher test-based measure of financial literacy increases the probability that investors frequently meet the advisor (coeff.= 0.182). The objective measure of financial literacy is instead negatively correlated with the probability of rarely (coeff.= -0.108) or sometimes (coeff.= -0.074) meeting the advisor. These results bring evidence in favour of our second hypothesis : investors with high financial literacy are more likely to monitor the activity of advisors by themselves. The self-assessed measure of financial literacy instead does not affect significantly the monitoring activity directly performed by the investor.

According to our second prediction, less literate investors are expected to discipline the advisor activity by seeking a second opinion (Pesendorfer and Wolinsky, 2003). In column (4) of Table 6, we see that the sign of the coefficient for the objective measure of financial literacy is negative as expected, but not statistically different from zero. Instead, the degree of self-assessed financial knowledge is positively and significantly related to the search of a second opinion.

In Table 6a, we run the same analysis on all investors relying on professional advice, i.e. on those investors choosing either "Advice" or "Delegation". The results (see columns (3a)-(3c)) confirm the positive effect of the test-based degree of financial literacy on the intensity of the monitoring activity, as in Table 6.

²⁰We acknowledge that this variable may also reflect the frequency of trading. In Table 10, we specifically deal with this issue. Please, refer to Section 4.1.1 for a thorough discussion.

²¹In Section 4.1.2, we extensively discuss the interpretation of this variable and its pertinence as a proxy measure of the search for a second opinion.

From Table 5, we learn that only very few investors adopt a second opinion mechanism. We conjecture that the limited number of observations whose value is equal to one for the binary variable "Second opinion" may be responsible for the lack of statistical significance of the financial literacy coefficient. In particular, these very few observations are dispersed across the eight possible values taken by the financial literacy variable. A re-coding of the financial literacy variable in three main segments (i.e., low, medium and high) may help to improve its predicting power, if any, on the second opinion variable.²² We collect the results under this alternative specification in Tables 7 and 7a, where the subsamples of investors choosing, respectively, "Advice".or "Advice/Delegation" are considered.²³

In columns (1a) to (2c) of Table 7, we observe that investors in the lowest percentiles of the distribution are less likely to monitor directly (i.e., to meet frequently) their advisors (coeff. = -0.130), while those in the medium and high percentiles of the distribution are more likely to do so (coeff. = 0.181 and 0.261, respectively). The models in columns (3) and (4) of Table 7 also show that the coefficients of the re-coded financial literacy variable are statistically significant and then predict the search for second opinion. In column (3), we observe that the investors at the bottom of the distribution of financial literacy are more likely to control their advisor by seeking a second opinion (coeff.: = 0.085), while medium and highly literate investors are both less likely to search for a second opinion (coeff.= -0.091 and -0.072 in column (4), respectively). The self-assessed degree of financial knowledge positively affects both the likelihood of direct monitoring (columns (1c) and (2c)) and the likelihood to search for a second opinion in a highly significant way (columns (3) and (4)).

In Table 7a, we perform the same analysis as in Table 7, but relative to investor choosing "Advice/Delegation". While the findings relative to direct monitoring are qualitatively confirmed, the coefficients of financial literacy (low, medium or high) relative to the search for second opinion are no longer significant. These findings again corroborate the credence service view taken in the paper: only investors who ask for advice but manage their portfolio autonomously seek a second opinion to discipline the first advisor.

²²In Figures 1 and 2, we plot the frequency and cumulative distribution functions, respectively, of the variable *Financial Literacy*. Since the variable is discrete, we are not allowed to choose any desired percentile level. The *Financial Literacy_low* bracket includes investors scoring at most three out of eight correct answers, representing approximately the lowest 20% of the selected subsample. The *Financial Literacy_medium* bracket includes investors scoring four (median) or five out of eight correct answers. The *Financial Literacy_high* bracket includes those investors scoring at least six out of eight correct answers, representing approximately the highest 10% of the distribution. In Section 4.2, we also discuss findings relying on alternative measures of financial literacy.

²³We report, in Table 7 and 7a, only the results relative to the outcome equations - "Monitoring" and "Second opinion" - that are estimated, as in Table 6 and 6a, following the Heckman ordered probit models with double sample selection and 2SRI estimation model to treat endogeneity.

Altogether, Tables 7 and 7a show a positive and significant correlation between the self-assessed degree of financial literacy and the probability of exerting some form of control over advisors, either by asking a second opinion or through direct monitoring. This result uncovers two distinct and independent roles for the self-assessed financial competence and the test-based financial literacy in the strategic interaction between investor and advisor. The degree of self-confidence in financial topics seems to be able to capture the investor's awareness of the advisor's bias. Among investors who ask for advice but decide autonomously, those who are more confident in their own financial knowledge indeed exert some form of control over the advisor activity. (Hypothesis 1). The test-based financial knowledge drives instead the choice of the control mechanism put in place by the investor. The ones at the top of the distribution of the test-based financial literacy distribution discipline their advisors through direct monitoring, while those at the bottom control their advisors' behavior by comparing different recommendations (Hypothesis 2).

Up to this point, we have implicitly assumed that a client alternatively chooses one of the two disciplining devices, i.e., direct control or the search for a second opinion, in order to obtain an accurate recommendation from the advisor. Table 5 highlights that most investors holding risky assets do not put in place any form of control, and that a very small fraction of investors adopt both disciplining channels. In Table 8, we investigate the investors' characteristics predicting these two behaviors, i.e. absence of control and reliance on both forms of control; in Table 9, we exclude from the sample those investors choosing both control channels.

In column (1) and (2) of Table 8, we study the characteristics of investors who do not exert any control, i.e., those who do not meet frequently the advisor ("Monitoring" \neq 2) and do not search for a second opinion ("Second opinion" = 0). The degree of test-based financial literacy does not predict significantly this behavior. However, the non-controlling investors have a significantly lower self-confidence in their own financial knowledge. This finding is again consistent with Hypothesis 1: a high self-assessed financial competence, being likely associated with a stronger awareness of the advisor's bias, predicts a higher propensity to control the advisor's activity. Columns (3) and (4) of Table 8 report the effect of trust and financial competence on the probability that investors implement both control mechanisms: interestingly, neither the test-based nor the self-assessed financial competence significantly predict this behavior. Finally, Table 9 presents the same regression analysis as in Table 7, but excluding from the sample those (29) investors choosing both disciplining channels. Our findings are confirmed: investors belonging to the lower percentiles of financial literacy are still significantly associated with a more intense search for a second opinion (coeff.=0.063) while

more literate investors are more likely associated with direct monitoring (coeff.=0.170).

4.1 Additional tests on the measures of monitoring and second opinion

The variables that we have adopted in order to measure the intensity of the investors' monitoring activity and their search for a second opinion may raise some questions in terms of interpretation. In this section we discuss the pertinence of these measures more in depth.

4.1.1 Direct monitoring activity

We proxy the intensity of the direct monitoring activity using the frequency of meetings between investor and advisor. We interpret frequent meetings as a signal of investors following closely the work of their advisor, thus pushing the latter to accurately study their needs. Alternatively, one can argue that investors meet their advisors more frequently if they want to revise their portfolio more often. In columns (1a) to (1c) of Table 10, we control for the frequency of trading in the regression specification of Table 6.²⁴ The variable "Frequency of trading" is re-coded in a three-category ordered variable ("Rarely", "Sometimes", "Frequently") that closely matches the monitoring measure. As expected, frequency of trading affects the monitoring intensity (i.e., the frequency of meetings) in a positive and significant way. However, the degree of financial literacy is still positively and significantly related to monitoring. The economic size of the coefficient linking these two variables is only marginally reduced if compared to Table 6 (from 0.182 to 0.166), and this confirms the effect of test-based financial literacy on the investor's monitoring activity.²⁵ In order to rule out a possible spurious correlation between financial literacy and the frequency of trading, in columns (2a) to (2c) of Table 11, we consider the latter as a dependent variable. The results show that financial literacy does not affect trading frequency in a significant way. Consistently with the literature (Grinblatt and Keloharju, 2009), the frequency of trading is instead significantly related with the self-assessed level of financial knowledge.

If, as we claim, the relation between financial literacy and frequency of meeting is due to the need to monitor the advisor's activity, its strength should be weaker the higher the trust in the advisor and/or the satisfaction with his activity. In Table 11, we study these testable implications. In columns (1a) to (1c) of

²⁴Table 10, 11 and 12 follow a regression specification close to Table 6.

²⁵Note that we did not include the "frequency of trading" as a regressor in the main specification to avoid a further source of endogeneity due to reverse causality: the advisor might increase the (need of) frequency of meeting with the investor in order to increase the frequency of trading and thus earn more from transactions.

Table 11, we include the interaction between financial literacy and trust in the advisor. If our conjecture is correct, we expect a negative sign of the interaction variable's coefficient: this is indeed the case, although the coefficient is (marginally) non significant (p-value=0.11).

In columns (2a) to (2c), we consider instead the interaction between financial literacy and the level of satisfaction in the advisor's activity, measured on a scale 1 to 5.²⁶ One can argue that the intensity of the monitoring activity also depends on the level of satisfaction of the investors when dealing with his advisor. A higher satisfaction is likely to increase the frequency of meeting, due to a component of pleasure of the investor to chat with his advisor. This is confirmed by our data: a higher degree of satisfaction significantly increases the frequency of the meetings between the investor and the advisor. However, the coefficient of the interaction term between financial literacy and satisfaction of advice is negative and statistically different from zero: the higher is the satisfaction with the service provided, the less compelling is the role of financial literacy in monitoring the advisor.

The relationship between financial literacy and satisfaction of advice is a priori far from obvious. A higher financial literacy might induce the advisor to provide better recommendations, as emphasized by the literature stressing the complementary relationship between advisor and investor (Calcagno and Monticone, 2015). Investors with higher financial literacy might therefore end up being relatively more satisfied in the advisor's activity. Conversely, if the client's higher financial literacy is associated with a closer monitoring behavior, then the probability to detect opportunistic deviations of the advisors might be higher and the satisfaction for the financial services might be lower. A negative relation between the test-based measure of financial literacy and the level of satisfaction therefore is consistent with our conjecture that highly literate investors monitor advisors directly. In column (3) of Table 11, we test this conjecture. The variable "Low satisfaction advice" is equal to one if the respondent's satisfaction is low (1 to 3, out of 5), and 0, otherwise. This variable is associated as expected with a low level of trust in the advisor and, more importantly for our purposes, with a high level of financial literacy.

As a further robustness check, we consider an alternative proxy measure for the intensity of the monitoring activity, that is, the dichotomous variable "Monitoring_1". This variable is equal to one if the investor meets frequently with the advisor (variable "Monitoring" = 2) and is not satisfied with the services provided (variable "Low satisfaction advice" = 1), while it equals zero otherwise. We present the results in column (4) of Table 11. The impact of the test-based degree of financial literacy on this alternative measure of mon-

²⁶See Appendix A, for a precise definition of this variable.

itoring is positive, thus providing further support to our prediction that high objective financial knowledge increases the direct monitoring activity.

4.1.2 Search for a second opinion

The variable "Second opinion" is constructed using the answer to a binary question asking whether the respondent ever asked their bank about products provided by other banks or financial institutions. We interpret a positive answer to this question as a signal that the investor compares different products and different recommendations, as by seeking a second opinion. However, this survey question does not directly reveal whether the investor actually consults with different intermediaries. Luckily, in the questionnaire the respondents are also explicitly asked whether they or their relatives make transactions with other banks/financial intermediaries beyond Unicredit Bank. Therefore, we restrict our sample to respondents who affirmatively answer this question and test whether the less literate investors in this sub-group search for a second opinion. We report the results in Table 12.

Columns #a refer to the subgroup of respondents who assess to directly deal with other intermediaries, while #b refer to respondents stating that their relatives are involved with other banks. In columns (1a) and (1b), we show that the objective degree of financial literacy has a negative and significant effect on the likelihood to search for a second opinion. The self-assessed measure of financial knowledge is instead positively and significantly related to this control mechanisms. These findings confirm the predictions formulated in Hypotheses 1 and 2.

Those clients who report to have contact with multiple banks or financial intermediaries are further asked the reason for this choice. The respondent is told a list of possible answers among which one states: "to make banks compete and therefore to get better conditions". We consider a positive answer to this question as a signal of the respondent's intention to compare various offers made by different financial intermediaries. We use this variable as an alternative proxy of the search of a second opinion ("Second opinion_1")²⁷ and we report the results in columns (2a) and (2b) of Table 12. We find that the coefficient of the test-based financial literacy measure is negative and statistically significant, thus confirming that a lower level of financial literacy is associated with a more intense search for a second opinion.

²⁷See Appendix A, for a precise definition of this variable.

4.2 Robustness

This section presents a series of additional analyses that verify the robustness of our findings to different specifications of the main variables. We check the robustness of the results illustrated in the previous section to the definition of our two main regressors, namely, *Trust in advisor* and *Financial Literacy*.²⁸

Table 4a reports the robustness results of Table 4. Here we replace the variable *Trust in advisor* taking the values one to five with the binary variable *Trust in advisor_1*. The effect of trust is further reinforced, pointing to a robust correlation between trust and delegation.

Tables 6b-6c and 7b-7c report the robustness results of Table 6 and 7 when the variable *Financial Literacy* is replaced by two alternative specifications of the same variable – *Financial Literacy_1* and *Financial Literacy_2* – obtained after excluding the question that recorded, respectively, the highest and lowest scores for the corrected answers’ results, as detailed in Appendix A.²⁹ The main findings of Table 6 and 7 are confirmed: Investors more confident in their financial competence are more prone to control the advisor’s behavior (Hypothesis 1). Investors featuring a high level of test-based financial literacy are more likely to directly monitor the advisor’s activity, while investors at the bottom of the financial literacy distribution are more likely to ask for a second opinion to verify the recommendations received previously (Hypothesis 2).

5 Conclusions

This paper empirically investigates whether investors control the recommendations they receive from their financial advisors and, if so, which control mechanism they choose.

We find that, irrespective of their level of financial education, investors with high trust in their advisors are more likely to fully delegate their financial decisions, as predicted by Gennaioli et al. (2015). A large fraction of investors however seeks financial counselling but makes decisions autonomously. If we restrict our analysis to these latter investors, we observe that those with a higher self-assessed financial competence are more prone to exert some form of control over their advisors. The degree of test-based financial literacy

²⁸Tables 13a, 13b, and 13c report additional robustness results for the second selection equation of Tables 6. Tables 13a and 13b report findings under two alternative specifications of the exclusion restriction, that is, the measure *Expected payoff of advice/delegate* (see Appendix A for details), while Table 13c shows the results under the alternative specification of trust. All three tables deliver results qualitatively similar to those in columns (1) and (2) of Table 6.

²⁹Figures 1a, 1b, 2a, and 2b plot the frequency distribution and the cumulative distribution functions of the two alternative measures of *Financial Literacy*.

influences instead the control mechanism the investor enacts. Investors with the highest level of test-based financial literacy verify the accuracy of expert recommendations directly, by frequently meeting with him. Investors with the lowest level of test-based financial literacy instead seek a second expert opinion that confirms the recommendation previously received, hence putting pressure on the first advisor to provide good advice. This latter disciplining mechanism confirms that financial advice can be considered as a credence service (Pesendorfer and Wolinsky (2003)). Our results suggest that policy interventions that improve disclosure of product characteristics can be beneficial for highly knowledgeable investors, but not for the less literate ones. To help unsophisticated investors exert some form of control over the activity of professional advisors, it may be more effective to facilitate access to experts other than the investor's own bank ones, and to provide them with standardized and centralized information over financial products.

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Tables

Table 1. Descriptive statistics

This table reports standard descriptive statistics of the variables considered throughout the analysis. Note that the estimation sample may vary across variables, as the tree-structure of the questionnaire implies that some questions are asked only to sub-samples of clients.

Variable	Mean	Median	Std. dev	Min	Max
<i>Variables in main specification</i>					
Trust in advisor	3.798	4	0.905	1	5
Financial Literacy	4.658	5	1.476	0	8
Self-assessed financial knowledge	2.877	2.9	0.846	1	5
Second Opinion	0.062	0	0.241	0	1
Second Opinion_1	0.135	0	0.342	0	1
Monitoring	1.187	1	0.645	0	2
Monitoring_1	0.018	0	0.134	0	1
Frequency of trading	0.759	1	0.728	0	2
Satisfaction advice	2.832	3	0.870	0	4
Risk aversion	2.886	3	0.719	1	4
Expected payoff of advice/delegate	0.674	1	0.469	0	1
Experience (years)	13.038	11	12.753	0	53
Finance sector	0.034	0	0.180	0	1
Financial wealth: 10-50 k	0.183	0	0.387	0	1
Financial wealth: 50-100 k	0.232	0	0.422	0	1
Financial wealth: 100-150 k	0.201	0	0.401	0	1
Financial wealth: 150-250 k	0.175	0	0.380	0	1
Financial wealth: 250-500 k	0.157	0	0.364	0	1
Financial wealth: >500 k	0.052	0	0.222	0	1
Individual income (thousands euro)	49.947	31	67.933	0.2	822
Female	0.306	0	0.461	0	1
Age	54.827	57	12.313	25	89
Years at school	12.381	13	3.905	0	20
Retired	0.336	0	0.473	0	1
Self-employed	0.267	0	0.442	0	1
Years at Unicredit: <1	0.011	0	0.103	0	1
Years at Unicredit: 1-5	0.100	0	0.300	0	1
Years at Unicredit: 6-10	0.187	0	0.390	0	1
Years at Unicredit: 11-20	0.236	0	0.425	0	1
Years at Unicredit: >20	0.466	0	0.499	0	1
North west	0.221	0	0.415	0	1
North east	0.288	0	0.453	0	1
Center	0.243	0	0.429	0	1
South-Islands	0.248	0	0.432	0	1
<i>Variables in alternative specifications</i>					
Financial Literacy_1	4.143	4	1.353	0	7
Financial Literacy_2	4.530	5	1.417	0	7
Trust in advisor_1	0.729	1	0.444	0	1
Expected payoff of advice/delegate_1	0.194	0	0.395	0	1
Expected payoff of advice/delegate_2	0.690	1	0.463	0	1
<i>Instruments</i>					
Regional Financial literacy (average)	1.577	1.498	0.335	0.781	1.961
School performance	0.166	0	0.373	0	1
Generalized trust_1	0.260	0	0.439	0	1
Generalized trust_2	4.187	4	0.853	1	5

Source: UCS (2007)

Table 2. Correlation matrix of main regressors

This table reports the correlation matrix of main regressors and instruments. Statistically significant correlation coefficients (at 10% confidence interval) are reported in bold.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
Self-assessed financial knowledge	(1)	1														
Financial Literacy	(2)	0.330	1													
School performance	(3)	0.149	0.134	1												
Regional Financial literacy (average)	(4)	0.102	0.100	-0.018	1											
Trust in advisor	(5)	0.057	0.000	0.014	0.028	1										
Generalized trust_1	(6)	0.028	-0.012	0.033	-0.001	0.080	1									
Generalized trust_2	(7)	0.088	0.146	0.127	-0.006	0.169	0.149	1								
Risk aversion	(8)	-0.296	-0.105	-0.073	-0.013	-0.104	-0.019	-0.054	1							
Expected payoff of advice/delegate	(9)	0.143	0.118	-0.030	-0.020	0.090	-0.030	0.094	-0.082	1						
Experience (years)	(10)	0.296	0.252	0.113	0.203	0.093	-0.006	0.152	-0.109	0.067	1					
Finance sector	(11)	0.111	0.062	0.049	0.007	-0.052	0.042	0.021	-0.029	0.017	0.080	1				
Years at school	(12)	0.288	0.188	0.264	-0.118	0.013	0.086	0.162	-0.176	0.053	0.072	0.079	1			
Individual income (log)	(13)	0.245	0.124	0.092	0.016	-0.032	0.066	0.034	-0.142	-0.033	0.166	0.054	0.250	1		
Age	(14)	-0.030	-0.031	0.015	0.083	0.088	-0.027	-0.034	0.081	-0.087	0.362	0.010	-0.242	0.027	1	
Female	(15)	-0.212	-0.119	0.002	-0.011	0.094	-0.005	-0.004	0.143	-0.007	-0.139	-0.063	-0.029	-0.222	0.010	1

Source: UCS (2007)

Table 3. Descriptive statistics on trust, financial literacy, self-assessed financial knowledge, and the demand for advice

	Full sample		Sample holding risky assets					
	Percent	Percent	Trust in advisor		Financial literacy (test-based)		Self-assessed financial knowledge	
			Mean	Std.dev	Mean	Std.dev	Mean	Std.dev
Demand for advice								
Self	7.84	11.11	3.53	0.87	4.88	0.92	3.38	0.79
Advice	48.39	68.55	4.02	0.72	4.95	1.24	3.10	0.75
Delegation	14.36	20.34	4.39	0.67	4.56	1.34	2.68	0.82
Does not hold risky assets	29.41							
Total	100	100						
# observations	1581				1116			

Source: UCS (2007)

Table 4. Demand for advice and trust

This table reports the marginal effects on conditional probability of an ordered probit model with sample selection. Column (1) reports results of the selection equation "Hold risky assets" while columns (2a)-(2c) report results of the outcome equation "Self-Advice-Delegation" estimated as an Heckman ordered probit model with sample selection. The endogenous regressors *Financial Literacy* and *Trust in advisor* are instrumented by *Regional Financial literacy*, *School performance*, *Generalized Trust (1)* and *Generalized Trust (2)* (see Appendix A for details on the variables). Consistently with the results of the Wu-Hausman test, the Instrumental Variable regression is implemented in the selection equation. Tests of instruments' validity are reported at the bottom of the table. Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Heckman ordered probit with selection				Heckman ordered probit with selection (IV)			
	Selection				Selection			
	Hold risky assets	Self	Advice	Delegation	Hold risky assets	Self	Advice	Delegation
	(1)	(2a)	(2b)	(2c)	(3)	(4a)	(4b)	(4c)
Trust in advisor	0.041 *** (0.011)	-0.089 *** (0.009)	-0.053 *** (0.009)	0.142 *** (0.013)	0.316 *** (0.063)	-0.085 *** (0.009)	-0.054 *** (0.009)	0.139 *** (0.013)
Financial Literacy	0.042 *** (0.007)	-0.001 (0.006)	-0.001 (0.004)	0.002 (0.010)	0.224 *** (0.057)	0.000 (0.005)	0.000 (0.003)	0.000 (0.009)
Self-assessed financial knowledge	0.030 ** (0.014)	0.019 ** (0.009)	0.011 * (0.006)	-0.030 ** (0.015)	-0.051 ** (0.026)	0.021 ** (0.009)	0.014 ** (0.006)	-0.035 ** (0.015)
Risk aversion	-0.064 *** (0.015)				-0.061 *** (0.015)			
<i>Demographics</i>	yes		yes		yes		yes	
<i>Income and wealth</i>	yes		yes		yes		yes	
<i>Macroarea</i>	yes		yes		yes		yes	
#obs	1581		1116		1550		1098	
Pseudo R ²	0.22		0.13		0.24		0.14	
<i>Instrumented endogenous regressors:</i>					Financial literacy			
					Trust in advisor			
Wu-Hausman test (χ ² (2) p-value)					0.00		0.12	
<u>Test of instruments' validity:</u>								
- F-test :								
Financial literacy					7.84			
p-value					0.00			
Trust in advisor					12.10			
p-value					0.00			
- Hansen-J statistic :					0.58			
χ ² (2) p-value					0.75			

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007)..

Table 5. Control mechanisms: an overview

This table reports the percentages of clients exerting different types of control on the advisor's activity, within the sample of investors holding risky assets but not investing completely autonomously (column (7)). The first two columns refer to investors exerting second opinion or direct monitoring. The third and fourth column refer, respectively, to investors not exerting any control or exerting both forms of control. Column (5) and (6) refer to investors choosing alternatively one control mechanism only (second opinion or direct monitoring, respectively).

control mechanism						
(sub-sample holding risky assets, except "Self")						
second opinion	monitoring	no control	both controls	second opinion only	monitoring only	total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
69	227	733	37	32	190	992
7.0%	22.9%	73.9%	3.7%	3.2%	19.2%	100.0%

Source: UCS (2007).

Table 6. Control mechanism: Monitoring and Second opinion (Advice only)

This table reports the marginal effects on conditional probability of an ordered probit model with double sample selection. Column (1) reports results of the 1st level selection equation "Hold risky assets" while columns (2) reports results of the 2nd level selection equation of seeking for financial counseling (either "Advice" or "Delegation"). "Risk aversion" is the exclusion restriction of the 1st level selection equation while "Expected payoff of advice/delegate" is the exclusion restriction of the 2nd level selection equation. The columns (3a)-(3c) report results of the outcome equation "Monitoring", estimated as an Heckman ordered probit model with double sample selection. The column (4) reports results of the outcome equation "Second opinion", estimated as an Heckman probit model with double sample selection. The reported results are relative to the sub-sample of investors asking advice and deciding autonomously (advice only). The endogenous regressors *Financial Literacy* and *Trust in advisor* are instrumented by *Regional Financial literacy*, *School performance*, *Generalized Trust (1)* and *Generalized Trust (2)* (see Appendix A for details on the variables). Consistently with the results of the Wu-Hausman test reported, the Instrumental Variable regression is implemented in the 1st level selection equation and for the "Monitoring" outcome equation. Tests of instruments' validity are reported at the bottom of the table. Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	1st level selection		2nd level selection		outcome equation (Advice only)		
	Hold risky assets		Advice/Delegate		Control mechanism		
					Monitoring		Second opinion
					Rarely	Sometimes	Frequently
	(1)	(2)	(3a)	(3b)	(3c)	(4)	
Trust in advisor	0.323 *** (0.064)	0.148 *** (0.015)	0.006 (0.105)	0.004 (0.072)	-0.011 (0.178)	0.046 (0.330)	
Financial Literacy	0.223 *** (0.057)	-0.019 (0.012)	-0.108 * (0.061)	-0.074 * (0.041)	0.182 * (0.101)	-0.100 (0.074)	
Self-assessed financial knowledge	-0.049 * (0.026)	0.040 * (0.021)	-0.034 (0.028)	-0.023 (0.020)	0.058 (0.048)	0.539 *** (0.156)	
Expected payoff of advice/delegate	-0.036 (0.024)	0.070 ** (0.031)					
Risk aversion	-0.060 *** (0.015)						
<i>Demographics</i>	yes	yes		yes		yes	
<i>Income and wealth</i>	yes	yes		yes		yes	
<i>Macroarea</i>	yes	yes		yes		yes	
#obs	1550	1098		510		510	
Pseudo R ²	0.24	0.12		0.10		0.18	
<u>Instrumented endogenous regressors:</u>	Financial literacy	-		Financial literacy		-	
	Trust in advisor			Trust in advisor			
Wu-Hausman test (χ ² (2) p-value)	0.00	0.39		0.08		0.12	
<u>Test of instruments' validity:</u>							
- F-test :							
Financial literacy	7.75			2.57			
p-value	0.00			0.04			
Trust in advisor	11.33			3.10			
p-value	0.00			0.02			
- Hansen-J statistic :	0.71			2.06			
χ ² (2) p-value	0.70			0.36			

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 6a. Control mechanism: Monitoring and Second opinion (Advice/Delegation)

This table reports findings of the same analysis of Table 6, but relative to the overall sample (advice/delegation) rather than to the subsample of those asking advice and deciding autonomously (advice only). Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	1st level selection		2nd level selection		outcome equation (Advice/Delegate)			
	Hold risky assets		Advice/Delegate		Control mechanism			
					Monitoring		Second opinion	
					Rarely	Sometimes	Frequently	
	(1)		(2)		(3a)	(3b)	(3c)	(4)
Trust in advisor	0.323 ***		0.148 ***		0.012	0.007	-0.019	-0.214
	(0.064)		(0.015)		(0.088)	(0.055)	(0.142)	(0.276)
Financial Literacy	0.223 ***		-0.019		-0.117 **	-0.073 **	0.191 **	0.000
	(0.057)		(0.012)		(0.049)	(0.032)	(0.079)	(0.066)
Self-assessed financial knowledge	-0.049 *		0.040 *		-0.019	-0.012	0.031	0.460 ***
	(0.026)		(0.021)		(0.023)	(0.014)	(0.037)	(0.133)
Expected payoff of advice/delegate	-0.036		0.070 **					
	(0.024)		(0.031)					
Risk aversion	-0.060 ***							
	(0.015)							
<i>Demographics</i>	yes		yes			yes		yes
<i>Income and wealth</i>	yes		yes			yes		yes
<i>Macroarea</i>	yes		yes			yes		yes
#obs	1550		1098			704		704
Pseudo R ²	0.24		0.12			0.09		0.17
<u>Instrumented endogenous regressors:</u>	Financial literacy		-		Financial literacy		-	
	Trust in advisor				Trust in advisor			
Wu-Hausman test ($\chi^2(2)$ p-value)	0.00		0.39		0.08			0.12
<u>Test of instruments' validity:</u>								
- F-test :								
Financial literacy	7.75				2.57			
p-value	0.00				0.04			
Trust in advisor	11.33				3.10			
p-value	0.00				0.02			
- Hansen-J statistic :	0.71				2.06			
$\chi^2(2)$ p-value	0.70				0.36			

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 7: Control mechanism: Monitoring and Second opinion, by low, medium and high financial literacy (Advice only)

This table reports the marginal effects on conditional probability of an ordered probit model with double sample selection, as from columns (1) and (2) of Table 6. The reported results are relative to the sub-sample of investors asking advice and deciding autonomously (advice only). The variable Financial Literacy is considered split in the lowest, medium and high percentiles (Financial Literacy_low, Financial Literacy_medium and Financial Literacy_high, respectively). Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Control mechanism (Advice only)							
	Monitoring						Second opinion	
	Rarely	Sometimes	Frequently	Rarely	Sometimes	Frequently	(3)	(4)
	(1a)	(1b)	(1c)	(2a)	(2b)	(2c)		
Trust in advisor	-0.024 (0.041)	-0.010 (0.072)	0.025 (0.177)	-0.004 (0.106)	-0.003 (0.074)	0.007 (0.180)	0.005 (0.047)	-0.001 (0.048)
Financial literacy_low	-0.065 *** (0.021)	0.053 (0.033)	-0.130 * (0.077)				0.085 ** (0.039)	
Financial literacy_medium				-0.107 ** (0.051)	-0.074 ** (0.036)	0.181 ** (0.085)		-0.091 ** (0.040)
Financial literacy_high				-0.154 * (0.079)	-0.107 * (0.055)	0.261 ** (0.131)		-0.072 * (0.043)
Self-assessed financial knowledge	-0.010 (0.109)	-0.047 *** (0.014)	0.116 *** (0.031)	-0.061 *** (0.020)	-0.042 *** (0.014)	0.103 *** (0.032)	0.083 *** (0.023)	0.080 *** (0.023)
<i>Demographics</i>		yes			yes		yes	yes
<i>Income and wealth</i>		yes			yes		yes	yes
<i>Macroarea</i>		yes			yes		yes	yes
#obs		510			510		510	510
Pseudo R ²		0.09			0.09		0.19	0.19

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 7a. Control mechanism: Monitoring and Second opinion, by low, medium and high financial literacy (Advice/Delegation)

This table reports findings of the same analysis of Table 7, but relative to the overall sample (advice/delegation) rather than to the subsample of those asking advice and deciding autonomously (advice only). Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Control mechanism (Advice/Delegate)							
	Monitoring			Second opinion				
	Rarely	Sometimes	Frequently	Rarely	Sometimes	Frequently		
(1a)	(1b)	(1c)	(2a)	(2b)	(2c)	(3)	(4)	
Trust in advisor	-0.017 (0.087)	-0.011 (0.055)	0.028 (0.142)	-0.008 (0.087)	-0.005 (0.055)	0.013 (0.143)	-0.024 (0.037)	-0.036 (0.038)
Financial literacy_low	0.091 ** (0.037)	0.058 ** (0.025)	-0.149 ** (0.061)				0.028 (0.032)	
Financial literacy_medium				-0.122 *** (0.042)	-0.077 *** (0.028)	0.200 *** (0.068)		-0.037 (0.033)
Financial literacy_high				-0.173 *** (0.064)	-0.109 *** (0.041)	0.282 *** (0.102)		-0.008 (0.036)
Self-assessed financial knowledge	-0.056 *** (0.016)	-0.035 *** (0.010)	0.091 *** (0.025)	-0.048 *** (0.016)	-0.031 *** (0.010)	0.079 *** (0.025)	0.069 *** (0.019)	0.065 *** (0.019)
<i>Demographics</i>		yes			yes		yes	yes
<i>Income and wealth</i>		yes			yes		yes	yes
<i>Macroarea</i>		yes			yes		yes	yes
#obs		704			704		704	704
Pseudo R ²		0.09			0.09		0.17	0.18

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 8: No control mechanism or both (Advice only)

This table reports the marginal effects on conditional probability of a probit model with double sample selection, as from columns (1) and (2) of Table 6. The variable Financial Literacy is considered split in the lowest, medium and high percentiles (Financial Literacy_low, Financial Literacy_medium and Financial Literacy_high, respectively). The reported results are relative to the sub-sample of investors asking advice and deciding autonomously (advice only), and investigates the characteristics predicting the probability of not exerting any control (columns (1) and (2)) and of adopting both mechanisms of control (columns (3) and (4)). Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Control mechanism			
	none		both	
	(1)	(2)	(3)	(4)
Trust in advisor	0.170 (0.215)	0.175 (0.216)	0.008 (0.121)	-0.024 (0.158)
Financial Literacy_low	0.117 (0.090)		0.023 (0.058)	
Financial literacy_medium		-0.133 (0.107)		0.051 (0.105)
Financial literacy_high		-0.157 (0.168)		0.154 (0.133)
Self-assessed financial knowledge	-0.134 *** (0.037)	-0.130 *** (0.039)	0.038 (0.025)	0.014 (0.029)
<i>Demographics</i>	yes	yes	yes	yes
<i>Income and wealth</i>	yes	yes	yes	yes
<i>Macroarea</i>	yes	yes	yes	yes
#obs	510	510	510	510
Pseudo R ²	0.14	0.14	0.28	0.32

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 9: Alternative control mechanisms: Monitoring and Second opinion, by low, medium and high financial literacy (Advice only)

This table reports the marginal effects on conditional probability of an ordered probit model with double sample selection, as from columns (1) and (2) of Table 6. The variable Financial Literacy is considered split in the lowest, medium and high percentiles (Financial Literacy_low, Financial Literacy_medium and Financial Literacy_high, respectively). The reported results are relative to the sub-sample of investors asking advice and deciding autonomously (advice only) and excludes investors who choose both mechanisms of control. Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Alternative control mechanism							
	Monitoring only						Second opinion only	
	Rarely	Sometimes	Frequently	Rarely	Sometimes	Frequently		
(1a)	(1b)	(1c)	(2a)	(2b)	(2c)	(3)	(4)	
Trust in advisor	-0.015 (0.104)	-0.006 (0.062)	0.016 (0.170)	-0.003 (0.111)	-0.002 (0.063)	0.005 (0.173)	0.001 (0.038)	0.028 (0.473)
Financial Literacy_low	0.077 * (0.046)	0.051 * (0.030)	-0.141 * (0.076)				0.063 ** (0.030)	
Financial literacy_medium				-0.109 ** (0.055)	-0.061 * (0.034)	0.170 ** (0.086)		-0.761 ** (0.365)
Financial literacy_high				-0.138 (0.087)	-0.078 (0.051)	0.216 (0.135)		-0.790 * (0.412)
Self-assessed financial knowledge	-0.068 *** (0.020)	-0.037 *** (0.013)	0.101 *** (0.031)	-0.061 *** (0.022)	-0.034 *** (0.013)	0.095 *** (0.032)	0.059 *** (0.019)	0.714 *** (0.218)
<i>Demographics</i>		yes			yes		yes	yes
<i>Income and wealth</i>		yes			yes		yes	yes
<i>Macroarea</i>		yes			yes		yes	yes
#obs		481			481		481	481
Pseudo R ²		0.07			0.07		0.25	0.25

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 10. Further tests on the measures of control: Monitoring/1 (Advice only)

This table reports the marginal effects on conditional probability of an ordered probit model with double sample selection, as from columns (1) and (2) of Table 6. The reported results are relative to the sub-sample of investors asking advice and deciding autonomously (advice only). In columns (1a) to (1c), we add the frequency of trading variable to the regressors predicting the probability of "Monitoring". In columns (2a) to (2c) we check how our regressors predict the frequency of trading. Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Monitoring			Frequency of trading		
	Rarely	Sometimes	Frequently	Rarely	Sometimes	Frequently
	(1a)	(1b)	(1c)	(2a)	(2b)	(2c)
Trust in advisor	0.010 (0.101)	0.006 (0.064)	-0.016 (0.166)	-0.045 (0.191)	0.016 (0.066)	0.030 (0.125)
Financial Literacy (FL)	-0.102 * (0.056)	-0.064 * (0.036)	0.166 * (0.090)	-0.025 (0.100)	0.009 (0.035)	0.016 (0.066)
Frequency trading	-0.134 *** (0.021)	-0.085 *** (0.012)	0.218 *** (0.023)			
Self-assessed financial knowledge	-0.007 (0.026)	-0.005 (0.017)	0.012 (0.043)	-0.136 *** (0.047)	0.047 *** (0.018)	0.088 *** (0.032)
<i>Demographics</i>		yes			yes	
<i>Income and wealth</i>		yes			yes	
<i>Macroarea</i>		yes			yes	
#obs		510			510	
Pseudo R ²		0.17			0.07	

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 11. Further tests on the measures of control: Monitoring/2 (Advice only)

This table reports the marginal effects on conditional probability of an ordered probit model with double sample selection, as from columns (1) and (2) of Table 6. The reported results are relative to the sub-sample of investors asking advice and deciding autonomously (advice only). In columns (1a) to (2c), the dependent variable is "Monitoring". In columns (1a) to (1c) we consider the interaction between Financial Literacy and Trust in advisor. In columns (2a) to (2c) we consider the interaction between Financial Literacy and the level of satisfaction with the financial advisor. In column 3, the dependent variable is a binary variable equal to 1 if the satisfaction with the advisor is low (1-3), and 0 otherwise. In column 4, the dependent variable is "Monitoring_1", that is a binary variable equal to 1 if both the investor monitors frequently (i.e., "Monitor" equal to 2), and the level of satisfaction with the advisor is low (1-3), 0 otherwise. Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Monitoring							
	Interaction FL-Trust			Interaction FL-Satisfaction advice			Low satisfaction advice	Monitoring_1
	Rarely	Sometimes	Frequently	Rarely	Sometimes	Frequently		
(1a)	(1b)	(1c)	(2a)	(2b)	(2c)	(3)	(4)	
Trust in advisor	-0.068 (0.117)	-0.048 (0.081)	0.116 (0.198)	0.029 (0.105)	0.020 (0.073)	-0.050 (0.178)	-0.264 *** (0.069)	-0.076 ** (0.038)
Financial Literacy (FL)	-0.187 ** (0.082)	-0.130 ** (0.057)	0.317 ** (0.134)	-0.176 ** (0.069)	-0.122 ** (0.048)	0.298 *** (0.113)	0.025 ** (0.012)	0.030 *** (0.008)
FL*Trust in advisor	0.020 (0.013)	0.014 (0.009)	-0.034 (0.021)					
Satisfaction advice				-0.127 ** (0.059)	-0.088 ** (0.044)	0.215 ** (0.100)		
FL*Satisfaction advice				0.022 ** (0.011)	0.015 ** (0.008)	-0.038 ** (0.018)		
Self-assessed financial knowledge	-0.033 (0.028)	-0.023 (0.020)	0.055 (0.048)	-0.032 (0.028)	-0.022 (0.020)	0.054 (0.048)	-0.014 (0.027)	-0.003 (0.014)
<i>Demographics</i>		yes			yes		yes	yes
<i>Income and wealth</i>		yes			yes		yes	yes
<i>Macroarea</i>		yes			yes		yes	yes
#obs		510			510		510	510
Pseudo R ²		0.09			0.10		0.35	0.42

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 12. Further tests on the measures of control: Second opinion (Advice only)

This table reports the marginal effects on conditional probability of a probit model with double sample selection, as from columns (1) and (2) of Table 6. The reported results are relative to the sub-sample of investors asking advice and deciding autonomously (advice only) and who have relationships with more than one bank/intermediary. In columns (1a) and (1b), the dependent variable is "Second opinion" analyzed in this restricted sample. In columns (2a) and (2b), the dependent variable is "Second opinion_1", that is a binary variable equal to 1 if the respondent chooses multiple banks/intermediaries to enforce competition. Columns (#a) refer to clients directly having relationships with other banks/intermediaries (beyond Unicredit Bank). Columns (#b) refer to clients whose relatives have relationships with other banks/intermediaries (beyond Unicredit Bank). Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Second opinion			
	Second opinion		Second opinion_1	
	sample of clients with multiple banks/intermediaries			
	Respondent	Relatives	Respondent	Relatives
	(1a)	(1b)	(2a)	(2b)
Trust in advisor	0.123 (0.096)	0.054 (0.077)	0.047 (0.118)	0.047 (0.118)
Financial Literacy	-0.040 * (0.023)	-0.031 * (0.019)	-0.065 *** (0.025)	-0.065 *** (0.025)
Self-assessed financial knowledge	0.119 ** (0.048)	0.119 *** (0.038)	0.005 (0.053)	0.005 (0.053)
Experience	0.003 (0.003)	0.001 (0.002)	0.003 (0.003)	0.003 (0.003)
Finance sector	0.016 (0.172)	-0.178 (0.147)	0.131 (0.144)	0.131 (0.144)
<i>Demographics</i>	yes	yes	yes	yes
<i>Income and wealth</i>	yes	yes	yes	yes
<i>Macroarea</i>	yes	yes	yes	yes
#obs	158	248	158	158
Pseudo R ²	0.24	0.23	0.14	0.14

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Robustness section

Table 4a. Demand for advice and trust (robustness: "Trust in advisor_1")

This table reports robustness checks of the main findings reported in Table 4. The variable *Trust in advisor* is replaced here by its binary version, *Trust in advisor_1*. The results of the Wu-Hausman tests suggests to instrument endogenous regressors in both selection and outcome equations. Dependent variable and regression techniques are the same as Table 3. Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Selection			
	Hold risky assets	Self	Advice	Delegation
	(1)	(2a)	(2b)	(2c)
Trust in advisor_1	0.800 *** (0.160)	-0.438 *** (0.138)	-0.257 *** (0.087)	0.695 *** (0.216)
Financial Literacy	0.215 *** (0.057)	0.023 (0.036)	0.014 (0.022)	-0.037 (0.058)
Self-assessed financial knowledge	-0.048 * (0.026)	0.016 (0.016)	0.009 (0.010)	-0.025 (0.026)
Risk aversion	-0.060 *** (0.014)			
<i>Demographics</i>	yes		yes	
<i>Income and wealth</i>	yes		yes	
<i>Macroarea</i>	yes		yes	
#obs	1550		1098	
Pseudo R ²	0.25		0.10	
Instrumented endogenous regressors:	Financial literacy		Financial literacy	
	Trust in advisor		Trust in advisor	
Wu-Hausman test ($\chi^2(2)$ p-value)	0.00		0.06	
Test of instruments' validity:				
- F-test :				
Financial literacy	7.84		20.18	
p-value	0.00		0.00	
Trust in advisor	8.56		16.27	
p-value	0.00		0.00	
- Hansen-J statistic :				
$\chi^2(2)$ p-value	0.23		1.27	
	0.89		0.53	

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 6b. Control mechanism: Monitoring and Second opinion (Advice only). Robustness: *Financial Literacy_1*

This table reports robustness checks of the main findings reported in Table 6. The variable *Financial Literacy* is replaced by *Financial Literacy_1* (see Appendix A for details on the construction of the variable). Dependent variable and regression techniques are the same as Table 5. Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	1st level selection	2nd level selection	outcome equation (Advice only)			Second opinion
	Hold risky assets	Advice/Delegate	Monitoring			
			Rarely	Sometimes	Frequently	
	(1)	(2)	(3a)	(3b)	(3c)	(4)
Trust in advisor	0.290 *** (0.068)	0.149 *** (0.015)	0.026 (0.107)	0.018 (0.074)	-0.044 (0.181)	-0.002 (0.049)
Financial Literacy_1	0.248 *** (0.062)	-0.013 (0.013)	-0.113 * (0.068)	-0.077 * (0.046)	0.190 * (0.112)	-0.020 * (0.011)
Self-assessed financial knowledge	-0.046 * (0.025)	0.036 * (0.021)	-0.037 (0.027)	-0.026 (0.019)	0.063 (0.046)	0.077 *** (0.022)
Expected payoff of advice/delegate	-0.037 (0.024)	0.069 ** (0.031)				
Risk aversion	-0.060 *** (0.015)					
<i>Demographics</i>	yes	yes		yes		yes
<i>Income and wealth</i>	yes	yes		yes		yes
<i>Macroarea</i>	yes	yes		yes		yes
#obs	1550	1098		510		510
Pseudo R ²	0.24	0.12		0.09		0.19
Instrumented endogenous regressors:	Financial literacy	-		Financial literacy		-
	Trust in advisor			Trust in advisor		
Wu-Hausman test (χ ² (2) p-value)	0.00	0.41		0.09		0.14
Test of instruments' validity:						
- F-test :						
Financial literacy	8.15			2.49		
p-value	0.00			0.04		
Trust in advisor	11.33			3.57		
p-value	0.00			0.01		
- Hansen-J statistic :	0.28			1.89		
χ ² (2) p-value	0.87			0.39		

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 6c. Control mechanism: Monitoring and Second opinion (Advice only). Robustness: *Financial Literacy_2*

This table reports robustness checks of the main findings reported in Table 6. The variable *Financial Literacy* is replaced by *Financial Literacy_2* (see Appendix A for details on the construction of the variable). Dependent variable and regression techniques are the same as Table 5. Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	1st level selection		2nd level selection		outcome equation (Advice only)		
	Hold risky assets		Advice/Delegate		Monitoring		
					Rarely	Sometimes	Frequently
	(1)	(2)	(3a)	(3b)	(3c)	(4)	
Trust in advisor	0.268 *** (0.074)	0.451 *** (0.052)	0.063 (0.111)	0.043 (0.076)	-0.106 (0.187)	0.009 (0.048)	
Financial Literacy_2	0.292 *** (0.082)	-0.075 * (0.039)	-0.187 ** (0.086)	-0.128 ** (0.058)	0.316 ** (0.140)	-0.013 (0.012)	
Self-assessed financial knowledge	-0.078 ** (0.036)	0.119 * (0.064)	0.000 (0.036)	0.000 (0.024)	0.001 (0.060)	0.079 *** (0.023)	
Expected payoff of advice/delegate	-0.046 * (0.024)	0.212 ** (0.096)					
Risk aversion	-0.060 *** (0.015)						
<i>Demographics</i>	yes	yes		yes		yes	
<i>Income and wealth</i>	yes	yes		yes		yes	
<i>Macroarea</i>	yes	yes		yes		yes	
#obs	1550	1098		510		510	
Pseudo R ²	0.24	0.12		0.09		0.18	
Instrumented endogenous regressors:	Financial literacy	-		Financial literacy		-	
	Trust in advisor			Trust in advisor			
Wu-Hausman test ($\chi^2(2)$ p-value)	0.00	0.41		0.05		0.13	
Test of instruments' validity:							
- F-test :							
	Financial literacy	6.76		2.49			
	p-value	0.00		0.04			
	Trust in advisor	11.33		3.46			
	p-value	0.00		0.01			
- Hansen-J statistic :							
		0.50		3.28			
	$\chi^2(2)$ p-value	0.78		0.19			

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 7b. Control mechanism: Monitoring and Second opinion, by low, medium and high financial literacy (Advice only). Robustness: *Financial Literacy_1*

This table reports robustness checks of the main findings reported in Table 7. The variable *Financial Literacy* is replaced by *Financial Literacy_1* (see Appendix A for details on the construction of the variable). Dependent variable and regression techniques are the same as Table 7. Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Control mechanism (Advice only)							
	Monitoring						Second opinion	
	Rarely	Sometimes	Frequently	Rarely	Sometimes	Frequently		
(1a)	(1b)	(1c)	(2a)	(2b)	(2c)	(3)	(4)	
Trust in advisor	0.000 (0.105)	0.000 (0.073)	0.000 (0.178)	0.008 (0.104)	0.005 (0.073)	-0.013 (0.177)	0.005 (0.047)	-0.001 (0.048)
Financial Literacy_1_low	0.053 (0.062)	0.037 (0.044)	-0.090 (0.106)				0.085 ** (0.039)	
Financial literacy_1_medium				-0.078 (0.068)	-0.054 (0.048)	0.132 (0.115)		-0.091 ** (0.040)
Financial literacy_1_high				-0.120 (0.090)	-0.084 (0.063)	0.204 (0.152)		-0.072 * (0.043)
Self-assessed financial knowledge	-0.070 *** (0.020)	-0.049 *** (0.013)	0.119 *** (0.031)	-0.065 *** (0.020)	-0.046 *** (0.014)	0.111 *** (0.031)	0.083 *** (0.023)	0.080 *** (0.023)
<i>Demographics</i>		yes			yes		yes	yes
<i>Income and wealth</i>		yes			yes		yes	yes
<i>Macroarea</i>		yes			yes		yes	yes
#obs		510			510		510	510
Pseudo R ²		0.09			0.09		0.18	0.19

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 7c. Control mechanism: Monitoring and Second opinion, by low, medium and high financial literacy (Advice only). Robustness: *Financial Literacy_2*

This table reports robustness checks of the main findings reported in Table 7. The variable *Financial Literacy* is replaced by *Financial Literacy_2* (see Appendix A for details on the construction of the variable). Dependent variable and regression techniques are the same as Table 7. Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Control mechanism (Advice only)							
	Monitoring						Second opinion	
	Rarely	Sometimes	Frequently	Rarely	Sometimes	Frequently	(3)	(4)
	(1a)	(1b)	(1c)	(2a)	(2b)	(2c)		
Trust in advisor	-0.003 (0.106)	-0.002 (0.074)	0.004 (0.180)	0.028 (0.106)	0.020 (0.073)	-0.048 (0.179)	0.005 (0.047)	-0.001 (0.048)
Financial literacy_2_low	0.056 (0.044)	0.039 (0.031)	-0.096 (0.075)				0.085 ** (0.039)	
Financial literacy_2_medium				-0.122 ** (0.052)	-0.084 ** (0.036)	0.206 ** (0.086)		-0.091 ** (0.040)
Financial literacy_2_high				-0.219 *** (0.082)	-0.152 *** (0.055)	0.371 *** (0.132)		-0.072 * (0.043)
Self-assessed financial knowledge	-0.068 *** (0.020)	-0.047 *** (0.013)	0.115 *** (0.031)	-0.051 *** (0.019)	-0.035 *** (0.013)	0.086 *** (0.032)	0.083 *** (0.023)	0.080 *** (0.023)
<i>Demographics</i>		yes			yes		yes	yes
<i>Income and wealth</i>		yes			yes		yes	yes
<i>Macroarea</i>		yes			yes		yes	yes
#obs		510			510		510	510
Pseudo R ²		0.09			0.09		0.18	0.18

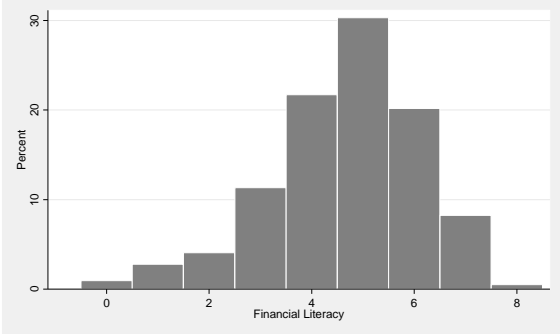
Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Figures

Figure 1. Financial literacy distribution

This figure represents the distribution of the variable *Financial Literacy* which captures the number of correct answers to eight questions (see Appendix A for details on the construction of the variable).



Source: UCS (2007)

Figure 1a. Financial literacy distribution (robustness: "Financial Literacy_1")

This figure represents the distribution of the variable *Financial Literacy_1* which captures the number of correct answers to seven questions (see Appendix A for details on the construction of the variable).

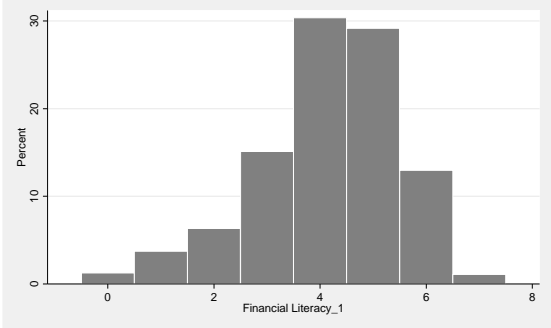
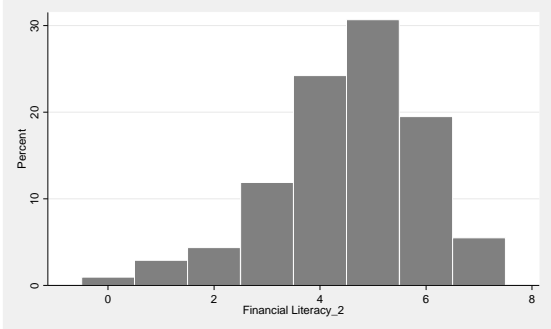


Figure 1b. Financial literacy distribution (robustness: "Financial Literacy_2")

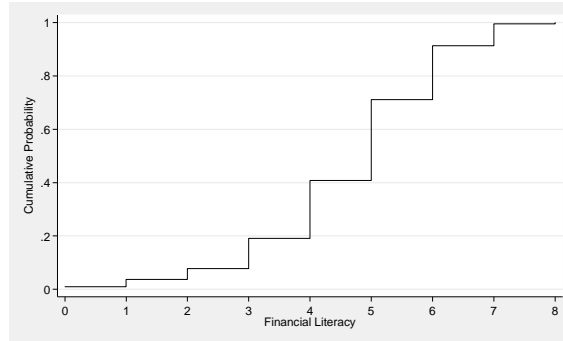
This figure represents the distribution of the variable *Financial Literacy_2* which captures the number of correct answers to seven questions (see Appendix A for details on the construction of the variable).



Source: UCS (2007)

Figure 2. Financial literacy cumulative distribution

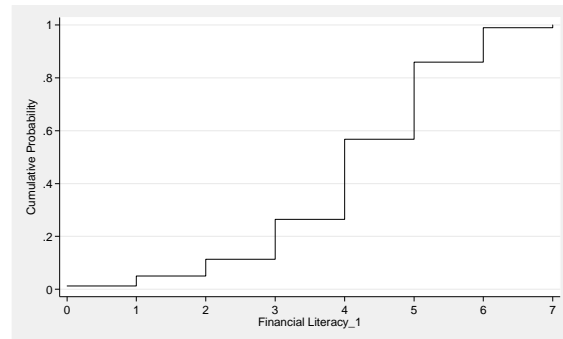
This figure represents the cumulative distribution function of the variable *Financial Literacy* which captures the number of correct answers to eight questions (see Appendix A for details on the construction of the variable).



Source: UCS (2007)

Figure 2a. Financial literacy cumulative distribution (robustness: "Financial Literacy_1")

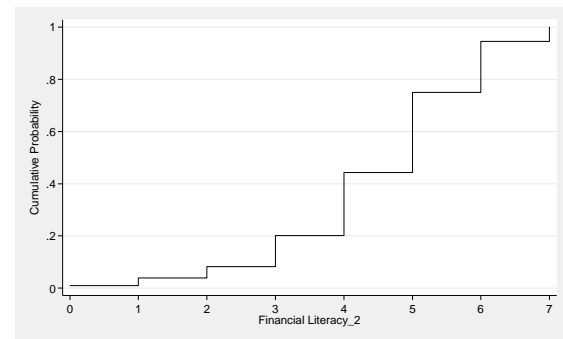
This figure represents the cumulative distribution function of the variable *Financial Literacy_1* which captures the number of correct answers to seven questions (see Appendix A for details on the construction of the variable).



Source: UCS (2007)

Figure 2b. Financial literacy cumulative distribution (robustness: "Financial Literacy_2")

This figure represents the cumulative distribution function of the variable *Financial Literacy_2* which captures the number of correct answers to seven questions (see Appendix A for details on the construction of the variable).



Source: UCS (2007)

Appendix A

Unicredit Investors Survey: description of the main variables

The 2007 Unicredit Investors Survey (UCS), which draws from the population of clients of one of the three largest European banking groups, with over 4 million accounts in Italy. The 2007 wave interviewed 1,676 individuals with a current account in one of the banks that are part of the Unicredit Group based in Italy. The sample is representative of the eligible population of customers, excluding younger than 20 or older than 75, and those who hold accounts of less than 10,000 euro or more than 2.5 million euro.

The sample selection is based on individual clients of Unicredit, however the survey contains detailed information also on the head of household – defined as the person responsible for the financial matters of the family – and spouse, if present. As for the financial variables, they are elicited both at the respondent and household level.³⁰

We restrict the sample to those investors for whom Unicredit is the main or only bank (1581 out of 1686)

Below we provide details for all relevant variables in the empirical analysis and report the survey variable label in brackets.

Dependent variables

Holding risky assets (label: INVEST)

This binary variable is based on the answer to the following question:

"Do you currently own, or have owned in the past, financial products other than current account (e.g., stocks, government bonds, mutual funds, etc.)?" The possible answers are YES/ YES, in the past/NO.

This variable takes value 1 if the answer is YES, 0 otherwise.

Self-Advice-Delegation (label: MODINV)

This variable separates, within the consulting activity, the role of advice and that of delegation. The measure adopted is based on the question "In managing your financial investment, which of these statements better describes your attitude? A: I prefer to decide autonomously: the bank just executes my dispositions; B: I discuss with my bank/advisor my intentions and ask an advice before taking a decision; C: I evaluate my bank's/advisor's proposals before taking a decision; D: I mainly rely on my bank/advisor for my investment decisions; E: I allow my bank (advisor) decide everything".

We construct a variable: "Self" if the answer is A, "Advice" if the answers are B-C and "Delegation" if the answers are D-E.

Advice/Delegation (label: ADVICE)

This binary variable is based on the answer (YES/NO) to following question: "Considering all banks/financial institutions you and your family have relationship with, do you rely on the advice of a financial consultant to make your investment choices?"

³⁰Notice that the Unicredit sample is older, more educated, more likely to live in the North and with higher family income than the SHIW sample.

Monitoring (label: ADVFREQ)

This measure is based on the following question: "How often do you meet your financial advisor?"

The ten possible answers range from "never" (=10) to "every day" (=1). More precisely, the full scale is the following: "every day" (=1); "at least once a week" (=2); "approximately every two weeks" (=3); "approximately every month" (=4); "approximately once every 3 months" (=5); "approximately once every 6 months" (=6); "approximately once per year" (=7); "less frequently than once per year" (=8); "whenever I feel like" (=9); "never" (=10).

We re-coded this variable in a three-category ordered variable equal to 0 ("Rarely") if the answers range from 8 to 10, 1 ("Sometimes") if answers range from 5 to 7, and 2 ("Frequently") if the answers range from 1 to 4.

Monitoring_1

It is a binary variable based on the variable monitoring defined above and the variable capturing "Low Satisfaction of advice" (see below). This variable is equal to 1 if the investor meets frequently her/his advisor (i.e., if the variable "Monitoring" defined above is equal to 2) and if the level of satisfaction of the advice is low (i.e., if the variable "Low Satisfaction of advice" is equal to 1), and 0 otherwise.

Second opinion (label: MARCHE)

It is a binary variable based on the answer (YES/NO) to following question:

"Have you ever asked your advisor products sold by other banks or financial intermediaries"

Second opinion_1: Seeking bank competition (label: MULTIBA_6)

It is a variable based on the question "You told me that you make use of multiple banks. On this card you can read some of the reasons why one can make use of multiple banks. Can you indicate the reasons why you rely on more than one bank? Multiple answers are allowed". The possible reasons listed are: 1. "To separate my entrepreneurial activity from personal accounts"; 2. "For privacy reasons"; 3. "To avoid my wealth is wholly managed by a unique bank/financial intermediary"; 4. "It is comfortable to have one bank branch close to home, one close to office"; 5. "Each bank has a specific competence on the service required"; 6. "To make banks compete and then get better conditions"; 7. "Other". The variable is built on the binary (YES/NO) answer to option 6, as it reveals the respondent's intention to compare different financial intermediaries.

Main regressors

Trust in advisor (label: ADVTRUST)

The respondent is asked to answer the following question: "Overall, how much do you trust your bank or financial advisor concerning your investments?". The possible answers are: 1 (= a lot), 2 (= quite), 3 (= not so much), 4 (= little), 5 (= not at all).

Trust in advisor_1

It is the binary version of the variable *Trust in advisor*. It is equal to 1 if *Trust in advisor* is larger than (or equal to) the median (3) and 0 otherwise

Financial Literacy

The respondent is awarded one point for answering correctly questions 1 to 8. The variable therefore ranges from 0 to 8.

1. Inflation (label: INFLATION)

Suppose a bank account yields a 2% interest per annum (after expenses and taxes). If actual inflation is 2% per year (assuming you did not access your account) after two years, the amount deposited can buy you (select one answer):

a) More than it can buy today; b) less than it can buy today; c) the same as it can buy today (correct); and d) cannot answer/cannot understand.

2. Interest rates (label: INTEREST)

Imagine having a ‘tip’ and knowing for certain that in six months interest rates will rise. Do you think it is appropriate to purchase fixed rate bonds today?

a) Yes; b) no (correct); c) I do not know.

3. Diversification 1 (label: DIVERSIF1)

In relation to investments, people often talk about diversification. In your opinion, to have proper diversification of one’s investments means (select one response):

a) To have in one’s investment portfolio bonds and shares; b) not to invest for too long in the same financial product; c) to invest in the greatest possible number of financial products; d) to invest simultaneously in multiple financial products to limit exposure to the risks associated with individual products (correct); e) to not invest in high-risk instruments; f) I do not know/cannot understand.

4. Diversification 2 (label: DIVERSIF2)

Which of these portfolios is better diversified?

a) 70% T-bills, 15% European equity fund, 15% in 2-3 Italian stocks ; b) 70% T-bills, 30% European equity fund; c) 70% T-bills, 30% in 2-3 Italian stocks; d) 70% T-bills, 30% in stocks of companies I know well; e) Do not know

Four other financial literacy indicators are based on the question: How risky do you think these products are?

The answers range from 1=Not risky at all, to 5=Very risky, and ‘Do not know’ is always an option. One point is given if the respondent can correctly state that:

5. Private bonds are at least as risky as deposits (label: RISK1)

6. Stocks are at least as risky as government bonds (label: RISK2)

7. Stocks mutual funds are at least as risky as mutual funds (label: RISK3)

8. Housing is at least as risky as deposits (label: RISK4)

"Financial Literacy_low" is a binary version of the variable capturing a low level of financial knowledge. It is equal to 1 if the *Financial Literacy variable* is smaller than (or equal to) 3, and 0 otherwise.

"Financial Literacy_medium" is a binary version of the variable capturing a medium level of financial knowledge. It is equal to 1 if the *Financial Literacy variable* is equal to 4 or 5, and 0 otherwise.

"Financial Literacy_high" is a binary version of the variable capturing a high level of financial knowledge. It is equal to 1 if the *Financial Literacy variable* is larger than (or equal to) 6, and 0 otherwise.

Financial Literacy_1

The variable *Financial Literacy_1* is similar to *Financial Literacy* with the exception of the exclusion of question 2, being the one with the highest score of correct answers in the block of the first four questions.³¹

³¹In the second block, which is a composite test on the knowledge of risk, all four financial literacy indicators display a larger response rate than question 2 but we chose not to modify the second block. Indeed, by eliminating one of them the overall test on the knowledge of riskiness would be undermined while by eliminating all of them the variability of the variable would have shrunk from 0-8 to 0-4, thus making meaningless the split of the population in percentiles.

The variable therefore ranges from 0 to 7.

"Financial Literacy_1_low" is a binary version of the variable capturing a low level of financial knowledge. It is equal to 1 if the *Financial Literacy_1 variable* is smaller than (or equal to) 2, and 0 otherwise.

"Financial Literacy_1_medium" is a binary version of the variable capturing a medium level of financial knowledge. It is equal to 1 if the *Financial_1 Literacy variable* is equal to 3, 4 or 5, and 0 otherwise.

"Financial Literacy_1_high" is a binary version of the variable capturing a high level of financial knowledge. It is equal to 1 if the *Financial Literacy_1 variable* is larger than (or equal to) 6, and 0 otherwise.

Financial Literacy_2

The variable *Financial Literacy_2* is similar to *Financial Literacy* with the exception of the exclusion of question 4, being the one with the lowest score of correct answers. The variable therefore ranges from 0 to 7.

"Financial Literacy_2_low" is a binary version of the variable capturing a low level of financial knowledge. It is equal to 1 if the *Financial Literacy_2 variable* is smaller than (or equal to) 3, and 0 otherwise.

"Financial Literacy_2_medium" is a binary version of the variable capturing a medium level of financial knowledge. It is equal to 1 if the *Financial_2 Literacy variable* is equal to 4, and 0 otherwise.

"Financial Literacy_2_high" is a binary version of the variable capturing a high level of financial knowledge. It is equal to 1 if the *Financial Literacy_2 variable* is larger than (or equal to) 5, and 0 otherwise.

Self-assessed financial knowledge (label: ABILITY)

The respondent is asked: "Which is the degree of knowledge relative to ten assets (government bonds, repurchase agreements, private bonds, mutual funds, derivatives, unit-linked or index-linked life insurance, ETFs, managed portfolios, and structured products)?" The answers range from 1 (=not at all) to 5 (=very well). The index used in the analysis (1-5) is the average of these ten measures.

Risk aversion (label: PROPRISK)

The variable is based on the question "In managing your financial investment which of these attitudes do you usually have? When I invest I usually look for Very high returns, even with a high risk of losing part of my principal (LOW); High returns with a fair degree of principal safety and Fair returns with high safety for my principal (MEDIUM); Low returns without risk of losing my principal (HIGH)". We re-code this variable in three levels of risk aversion (HIGH, MEDIUM, LOW).

Expected payoff of advice/delegate (label: MOTVBA)

This binary variable captures the expected payoff of seeking advice and should determine the choice of asking advice/delegation versus self-directing own investment.

To build our measure of expected payoff of advice/delegate we refer to Pesendorfer and Wolinsky (2003). The expected payoff of advice or delegate in equilibrium is³²: $xV - p - s = V - p - 2s/x$. V represents the value of the optimal recommended product, p is the price, s is the direct cost of control and x is the level

³²Pesendorfer and Wolinsky (2003), equation (6), page 424. Note that the full search cost would be $(d + s)$, where d is the direct cost of advice, but it can be discarded because Pesendorfer and Wolinsky (2003) show that it equals 0 in equilibrium (see *Proposition 1* on pag. 426)

of effort of the advisor. $2s/x$ represents the expected cost of control: the higher are the direct control costs (i.e., the search costs or opportunity costs of time) and/or the lower is the effort of the advisor, the higher are the expected control costs. The expression on the left-hand side is the value for investors who stop and buy the recommended product, while the expression on the right-hand side is the value for investors who search for a second opinion: the two values equate in equilibrium.

To construct a proxy of this measure of "expected payoff of advice/delegate" we rely on the following composite question:

"If you had to choose a bank for your investments, how important would be the following factors in your final choice?" A. proximity to home/office; B. ample choice of products and services; C. good performance of products; D. good relationship with bank employees; E. consultants' competence; F. prices' competitiveness; G. innovative products and services; H. quality and completeness of communications and information (current account reporting, etc.); I. telephone and internet services.

The five possible answers range from "Not at all" (1) to "Very important" (5).

We proxy V with the factor B (the utility attached to the optimal investor-specific product is larger if the choice of products is wider), p with factor F and the expected control costs with a combination of factors A and I (proxying the opportunity cost of time), and of factors C and E (proxying the effort of the advisor).

The measure adopted in the main specification is a binary variable identifying a high expected payoff of advice/delegate.

$$\text{It is equal to 1 if } \left\{ \underbrace{B \geq 4}_{V \text{ high}}, \underbrace{F \geq 4}_{p \text{ low}}, \underbrace{A \leq 3 \ \& \ I \leq 3}_{\text{low search cost}} \text{ or } \underbrace{C \geq 4 \ \& \ E \geq 4}_{\text{high effort}} \right\}, 0 \text{ otherwise.}$$

low expected control cost

Expected payoff of seeking advice_1

This measure is a variant of the measure *Expected payoff of advice/delegate* computed above, to test the sensitivity of the findings to a variation in the choice of cut-off answers.

$$\text{It is equal to 1 if } \left\{ \underbrace{B > 4}_{V \text{ high}}, \underbrace{F > 4}_{p \text{ low}}, \underbrace{A < 3 \ \& \ I < 3}_{\text{low search cost}} \text{ or } \underbrace{C > 4 \ \& \ E > 4}_{\text{high effort}} \right\}, 0 \text{ otherwise.}$$

low expected control cost

Expected payoff of seeking advice_2

This measure is a variant of the measure *Expected payoff of advice/delegate* computed above, to test the sensitivity of the findings to a variation in the definition of search costs. In particular, we consider only the factor I (telephone and internet services) as proxying the opportunity cost of time of the investor.

$$\text{It is equal to } \left\{ \underbrace{B \geq 4}_{V \text{ high}}, \underbrace{F \geq 4}_{p \text{ low}}, \underbrace{I \leq 3}_{\text{low search cost}} \text{ or } \underbrace{C \geq 4 \ \& \ E \geq 4}_{\text{high effort}} \right\}, 0 \text{ otherwise.}$$

low expected control cost

Instruments

Average regional financial literacy (from SHIW)

This variable is average financial literacy at the regional level taken from the Bank of Italy's Survey on Household Income and Wealth (SHIW)

School performance (label: SCHOOL)

The variable is based on the question "Where were you placed as a pupil when you attended junior high school?

1: in the group of best students; 2: above the median; 3: about at median; 4: below the median".

Our variable is constructed as a binary variable taking value 1 if the client belongs to the group 1 and 0 otherwise.

General trust _ 1 (label: TRUST)

TRUST: binary variable based on the answer to the following question: "Generally speaking, do you think that most people can be trusted or that you have to be very careful in dealing with people?". A value 1 is associated to the answer "I think that most people can be trusted" and a value 0 to the answer "You cannot be too careful in dealing with people".

General trust _ 2 (label: TRUST2)

TRUST2: variable based on the answer to the following question: "How important is for you to build trust relationships with people in everyday life?" and the answer can range from 1 (=not at all important) to 5 (=very important)

Other relevant variables

Satisfaction of Unicredit bank's financial advice (label: UCISODD)

This variable relies on the answer to the question: "Overall, which is your level of satisfaction for the way Unicredit manages your financial investments?" and the answer ranges from 5 (=not satisfied at all) to 1 (=very satisfied). We re-code the variable to attach a higher score (5) to the higher level of satisfaction.

Low Satisfaction of advice

This is a binary version of the above-defined variable, equal to 1 for low level of satisfaction (1 to 3), and 0 otherwise.

Frequency of trading (label: FREQMOV)

This variable relies on the question "How often do you revise your investment position, buying or selling assets?" and the answer ranges from 1 (=every day) to 11 (=never). We re-coded this variable in a three-category ordered variable -to match the recoding of the monitoring variable ADVFREQ- equal to 0 ("Rarely") if the answers range from 8 to 11, 1 ("Sometimes") if answers range from 5 to 7, and 2 ("Frequently") if the answers range from 1 to 4.

Wealth (label: FPATRIM)

The wealth refers to the respondent's holdings at Unicredit (2006, 30th June) and is defined in brackets (1: 10k-50k; 2: 50k-100k; 3: 100k-150k; 4: 150k-250k; 5: 250k-500k; 6: 500k-5000k). Note that the sample includes clients with a financial wealth in Unicredit at least equal to 10 thousands euros.

Income (label: YLIND)

This variable comprises labour income perceived by the respondent at the end of year 2006.

Experience (label: ETA)

This variables captures the experience of investors in dealing with financial instruments. It is equal to the maximum experience (measured in years) attached to the three types of instruments considered, i.e., government bonds, mutual funds and stocks.

Finance Sector (label: APSETT_IN)

This is a binary variable equal to 1 if the respondent works in the financial sector and 0 otherwise.

Appendix B

Additional tables

Table 13a: Demand of advice, trust and *Expected payoff of advice/delegate_1*

This table reports robustness checks of the main findings reported in columns (1)-(2) of Table 6. The exclusion restriction *Expected payoff of advice/delegate* adopted in columns (1)-(2) of Table 6, is replaced here by *Expected payoff of advice/delegate_1* (see Appendix A for details on the construction of the variable). Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Selection	
	Hold risky assets	Advice/Delegation
	(1)	(2)
Trust in advisor	0.315 *** (0.065)	0.144 *** (0.019)
Financial Literacy	0.222 *** (0.056)	-0.017 (0.015)
Self-assessed financial knowledge	-0.051 * (0.026)	0.039 (0.032)
Expected payoff of advice/delegate_1	0.020 (0.031)	0.062 * (0.032)
Risk aversion	-0.062 *** (0.015)	
<i>Demographics</i>	yes	yes
<i>Income and wealth</i>	yes	yes
<i>Macroarea</i>	yes	yes
#obs	1550	1098
Pseudo R ²	0.25	0.12
<u>Instrumented endogenous regressors:</u>	Financial literacy	-
	Trust in advisor	-
Wu-Hausman test ($\chi^2(2)$ p-value)	0.00	0.32
<u>Test of instruments' validity:</u>		
- F-test :		
Financial literacy	7.86	
p-value	0.00	
Trust in advisor	11.06	
p-value	0.00	
- Hansen-J statistic :	0.58	
$\chi^2(2)$ p-value	0.75	

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 13b. Demand of advice, trust and *Expected payoff of advice/delegate_2*

This table reports robustness checks of the main findings reported in columns (1)-(2) of Table 6. The exclusion restriction *Expected payoff of advice/delegate* adopted in columns (1)-(2) of Table 6, is replaced here by *Expected payoff of advice/delegate_2* (see Appendix A for details on the construction of the variable). Dependent variable and regression techniques are the same as columns (1)-(2) of Table 5. Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Selection	
	Hold risky assets	Advice/Delegation
	(1)	(2)
Trust in advisor	0.323 *** (0.064)	0.149 *** (0.016)
Financial Literacy	0.223 *** (0.057)	-0.019 (0.013)
Self-assessed financial knowledge	-0.049 * (0.026)	0.040 * (0.021)
Expected payoff of advice/delegate_2	-0.032 (0.025)	0.063 * (0.034)
Risk aversion	-0.060 *** (0.015)	
<i>Demographics</i>	yes	yes
<i>Income and wealth</i>	yes	yes
<i>Macroarea</i>	yes	yes
#obs	1550	1098
Pseudo R ²	0.25	0.12
<u>Instrumented endogenous regressors:</u>	Financial literacy	-
	Trust in advisor	
Wu-Hausman test ($\chi^2(2)$ p-value)	0.00	0.38
<u>Test of instruments' validity:</u>		
- F-test :		
Financial literacy	7.74	
p-value	0.00	
Trust in advisor	11.26	
p-value	0.00	
- Hansen-J statistic :	0.68	
$\chi^2(2)$ p-value	0.71	

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).

Table 13c. Demand of advice, *Trust in advisor_1* and Expected payoff of advice/delegate

This table reports robustness checks of the main findings reported in columns (1)-(2) of Table 6. The variable *Trust in advisor* is replaced here by its binary version, *Trust in advisor_1*. Dependent variable and regression techniques are the same as Table 5. Heteroskedasticity robust standard errors are reported in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Selection	
	Hold risky assets	Advice/Delegation
	(1)	(2)
Trust in advisor_1	0.833 *** (0.166)	0.283 *** (0.034)
Financial Literacy	0.213 *** (0.057)	-0.021 * (0.013)
Self-assessed financial knowledge	-0.045 * (0.026)	0.037 * (0.021)
Expected payoff of advice/delegate	-0.056 ** (0.026)	0.068 ** (0.033)
Risk aversion	-0.059 *** (0.015)	
<hr/>		
<i>Demographics</i>	yes	yes
<i>Income and wealth</i>	yes	yes
<i>Macroarea</i>	yes	yes
#obs	1550	1098
Pseudo R ²	0.24	0.12
<hr/>		
<u>Instrumented endogenous regressors:</u>	Financial literacy	None
	Trust in advisor	
Wu-Hausman test ($\chi^2(2)$ p-value)	0.00	0.65
<hr/>		
<u>Test of instruments' validity:</u>		
- F-test :		
Financial literacy	7.75	
p-value	0.00	
Trust in advisor	7.70	
p-value	0.00	
- Hansen-J statistic :	0.33	
$\chi^2(2)$ p-value	0.85	

Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income and the financial wealth brackets. *Macroarea* considers the North-West, the North-East, the Center and the South-Islands geographical areas.

Source: UCS (2007).