

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 quality of the recommendations they receive, and, if so, which one. Half of these investors do not exert any form of control over the advisor's activity. The investors who are more likely to control the quality of the advice received are those with high self-assessed financial competence. The mechanism through which investors discipline advisors depends instead on the investors' degree of test-based financial literacy. Investors with high financial literacy directly monitor the advisors' activity themselves. Instead, investors with low financial literacy are more likely to seek a second expert's opinion that supports the recommendations previously received, such as in the case of *credence services*. Our findings suggest that improving investors financial knowledge may foster direct control of the advisor's activity. Moreover, facilitating the comparability of financial products and the access to different financial institutions may fulfill the same disciplining objective for 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. In accordance to this view, financial advice can be considered as a *credence service* similar to medicine, where "money doctors help investors to get the most appropriate treatment" (Gennaioli et al., 2015, p.92). As 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). Hence, investors who rely on professional financial advice either do so because they trust their advisors (Gennaioli et al., 2015), or because they are *naive* investors and not aware of advisors' moral hazard (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 quality of the recommendations made by professional advisors. When this is the case, we investigate how investors' degree of financial knowledge, measured both in subjective terms, i.e. self-assessed, and objectively, i.e. test-based, affects the control mechanism they enact.

For this purpose, we use 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. We find that, irrespective of their level of financial education, investors with high trust in their advisors fully delegate them their financial decisions, as predicted by Gennaioli et al. (2015). However, we observe that in our dataset more than two thirds of investors who demand professional advice make decisions autonomously, after having received professional recommendations. These investors trust their advisors less than those who fully delegate their investment decisions. Overall less than forty percent of investors seeking advice exert

some form of control on the activity of their advisors, which suggests either a widespread investors' inertia (Bhattacharya et al., 2012) or a large presence of *naive* investors (Inderst and Ottaviani, 2012c).

We then investigate which investors' characteristics explain whether they discipline the advisor's activity and the type of control mechanism enacted. Pesendorfer and Wolinsky (2003) consider the search for second professional opinions as the most appropriate disciplining mechanism for standard credence goods, such as medical advice. Unlike in medical counselling, financially educated investors when confronted with financial advice could try to verify the accuracy of the expert's recommendation by themselves, since monitoring costs are probably lower for investors with higher financial competence.

We find that the self-assessed level of financial competence is strongly related to some form of control activity: Investors who are more confident in their own financial knowledge are more likely to check the quality of advisors' recommendations. As suggested by Allgood and Walstad (2016), self-assessed literacy reflects a person's self-image and is then natural to observe that self-confident investors rely on their own judgement to exert control over the quality of the recommendation received.

The test-based degree of financial literacy impacts the disciplining mechanism used by investors. We find that those with the highest level of test-based financial literacy exert a direct form of control on advisor 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.

We believe that identifying the mechanism of control put in place by investors who seek advice and are aware of the agency bias of experts is important in order to design effective investors protection rules. Given that investors with a low degree of financial literacy are more likely to search for second opinions, we can deduce that they rationally do not demand professional advice in the first place if the search cost is too high. Policy interventions should be designed to increase the fraction of investors aware of the potential conflict of interests with advisors, and to reduce the costs for investors to discipline advisors' activity. On the one hand, policies aimed to improve financial knowledge can spread awareness of the advisors' bias and reduce the monitoring costs for investors. On the other hand, facilitating access to experts other than an investor's own bank advisor could benefit unsophisticated investors, enabling them to identify economically sound advice more easily.

Our findings are consistent with some 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 financial institutions probably do not believe they are being offered unbiased recommendations. Therefore, they decide to seek advice only if they believe they can afford the cost to verify its quality, either by themselves if they have enough financial knowledge, or by asking to a second expert. In our paper, we observe that investors who think to know more about financial matters are more likely to control the quality of the advice they receive. This could explain why more financially knowledgeable households follow the advice they receive in a lesser extent than the less knowledgeable ones, as reported by Stolper and Walter (2015). The more knowledgeable investors may carefully check the recommendations and consider that they are not accurate enough, deciding then 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 robustness checks' tables.

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 Kerchmbamer, 2006, p.5).

The credence goods approach is not new in the industrial organization literature (Wolinski, 1993, 1997; Fong, 2005).¹ 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 they are less anxious to take risks if they are counselled to do so than on their own, just as patients follow the treatment prescribed by a doctor they trust.² Other works also highlight the positive effect of trust

¹For an exceptionally comprehensive review, see Dulleck and Kerchmbamer (2006).

²Recently, Pauls et al. (2015) argue that the level of trust in professional advisors is not homogenous across financial

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), his incentive to sell products with higher fees (von Gaudecker, 2015), and his incentive to mis-sell products (Inderst and Ottaviani, 2009).³

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 it, that is, the search for a second opinion. Alternatively, an investor could verify the quality of the advisor’s recommendation by paying monitoring costs.

Our work aims to contribute to the vast literature studying the relationship between financial knowledge and the demand for professional advice.⁴ Some papers argue that the objective level of financial literacy of investors explains their demand for advice. 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. (2011), Bucher-Koenen and Koenen (2011), and Calcagno and Monticone (2015) using different datasets. 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. In addition, Hung and Yoong (2013) support the idea that demand for professional advice could substitute for the level of financial knowledge, while Hacketal et al. (2012) suggest that financial advisors are matched with wealthier and higher income households. 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 less likely to seek professional advice.

We add to this literature by showing that both objective and subjective measures of financial literacy impact the control activity that investors exert on advisors. More self-confident investors are more likely to intermediaries. They find that the level of trustworthiness of financial advisors acting in community banks is larger than that of advisors of large banks.

³With 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.

⁴See Kim et al. (2016) for a study on the optimal delegation of investment management in a life cycle setting.

put in place some form of control on their advisors. Investors with the highest degree of financial literacy check the quality of the recommendations they receive by themselves while the least financially literate ones are more likely to seek a second expert’s opinion.

Several papers have documented 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 behaviour 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.

Some papers 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.

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 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 disciplined 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.⁵ 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

⁵The 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.

two last restrictions, the UCS over-samples rich investors with respect to the Italian population. For this reason, whenever it is possible, we compare our results with the ones contained in SHIW, the Bank of Italy's Survey on Household Income and Wealth, in CONSOB (2016) and in Gentile et al. (2016) which are all based on representative samples of the Italian population. The UCS goal is to study retail customers' financial behaviour 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.⁶ Furthermore, the survey contains data on the attitudes towards saving, financial investment, risk propensity and, more importantly for our purposes, it collects information 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 this relationship. In terms of information collected, our data set is comparable to the one recently analyzed in Kramer (2016), obtained from one of the largest retail banks in the Netherlands. Table 1 reports the main descriptive statistics of the variables considered in our analysis.⁷

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,⁸ representing about 70% of the entire sample.⁹ In our sample, 713 investors, representing 45% of the entire sample, seek some form of professional advice (either "Advice" or "Delegate"), while 518 investors (33% of the sample) seek advice but decide their investment autonomously ("Advice").¹⁰ Overall, the UCS sample covers individuals who participate more to financial markets than the general Italian population and who are more likely to seek professional advice (CONSOB, 2016). 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. The UCS does not cover households without a current account, and those belonging to the lowest fraction of the population in terms of wealth. But these are unlikely to hold risky assets (van Rooij et al., 2011) and to demand professional advice (Hacketal et al., 2012).

⁶As illustrated by Guiso and Jappelli (2009), the individuals in the UCS sample are older than in the SHIW study which is representative of the whole Italian population.

⁷For further information on the UCS, see Guiso and Jappelli (2009) and Calcagno and Monticone (2015).

⁸The survey considers as risky assets: bonds, stocks, mutual funds, insurance-based investment products, index funds, personalised portfolio management and derivatives.

⁹Note that this is higher than the level of financial markets participation across the whole population (CONSOB, 2016), i.e. 55%.

¹⁰On the whole population, CONSOB (2016) finds that 38% of households seek professional advice when confronted to an investment decision.

The main variables of interest for our analysis are related to characteristics of the investors, 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 we use in this paper and for the precise wording of the survey questions.

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 (almost 20%). The objective measure (or test-based) 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 (57.5% of the total), and the median number of correct answers is five (62.5%). Our test-based degree of financial literacy is higher than the one obtained by Gentile et al. (2016) using similar questions on a sample representative of the whole Italian population: this is to be 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) report a frequent substantial mismatch between individuals' self-assessed knowledge and their actual knowledge. More 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 correlation matrix of the relevant regressors (and instruments) considered in the analysis, we can observe that the correlation coefficient between self-assessed and test-based financial literacy is statistically significant and equal to 0.33. 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 also provides information about other characteristics of the investor-advisor relationship crucial for our analysis. Specifically, it asks the respondent whether he/she ever asked the bank about products managed by other banks or financial institutions ("Second Opinion") and how often he/she meets the financial advisor at the bank (variable "Monitoring"). Concerning the "Second Opinion", only 6% of

the sample has ever asked to the main bank, i.e. Unicredit, for products proposed by other banks, while the median respondent never did so.

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 frequent than once per month. We observe that the median respondent meets the advisor once (over a scale from zero to two), i.e. less frequently than once every quarter but more than once per year. In Section 3 we use these two variables to quantify the control mechanisms which are the key focus of the present paper and discuss our methodology thoroughly.

The variable "Frequency of trading" captures the duration at which the respondent revises its investment position: the average respondent executes an order less than once per year. The measure "Satisfaction advice" is obtained from a question asking the investor its level of satisfaction for the way the bank manages its financial investment, and it varies on a scale from zero to five. The average level of satisfaction is approximately 2.8 (56%), but also this variable shows an important standard deviation (approx. 18%). The other variables described in Table 1 are standard.

The UCS contains information about the way individuals manage their financial investment, 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, as well as for the subsample of those holding risky assets. The fraction of investors asking for advice but deciding independently is the largest, representing the 48% of the full sample and the 69% of investors holding risky assets.

From Table 3 one can see 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 Gennaioli et al. (2015), who argue that investors who unconditionally trust their advisor fully delegate their financial decisions. The level of trust could 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 "Self", "Advice", "Delegation". Low levels of financial literacy, either test-based or self-assessed, predict a higher probability to fully delegate investment decisions to professional advisors. The 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.

To assess more precisely the effect of trust and financial competence on the investors' demand of 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. The results again confirm the predictions of Gennaioli et al. (2015): Investors who trust their advisors more are more likely to invest in risky assets. 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).

Investors who received professional advice and spent time with their advisors are more likely to develop a higher level of financial sophistication and they may trust advisors more. 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.¹¹ We instrument the level of trust in advisors with two

¹¹The 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).

variables capturing the general level of trust.¹² 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 11–14.¹³ 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).¹⁴ Also this instrumented version of the ordered probit model confirms the positive role of trust in the choice to fully delegate.¹⁵

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

The key contribution of our paper is to identify the disciplining mechanisms that investors put in place in order to control the quality of the recommendations they receive, if any.

Table 3 shows that about 69% of the investors who hold risky assets regularly consult their advisor but decide autonomously how to invest (*Advice*). They trust professional counselling significantly less than investors who fully delegate their decisions. We expect then that investors choosing "Advice" are relatively more aware that the recommendations they receive can be biased, as the *wary* investors described in the literature (Woodward and Hall, 2012; Inderst and Ottaviani, 2009, 2012c), and are therefore more likely to discipline their advisors’ activity (Inderst and Ottaviani, 2012c) than the ones who decide to fully delegate their portfolio decisions (*Delegate*).

To verify this conjecture, we report in Table 5¹⁶ the percentages of investors who enact any form of control on the advisor’s activity. The first row refers to the sample of individuals who rely on some form of

¹²See Appendix A for further details on the instruments.

¹³Note 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).

¹⁴Since 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.

¹⁵Since 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.

¹⁶From here on I have inverted the sequence of two following tables...old Table 6 becomes Table 5, and viceversa old Table 5 becomes Table 6.

professional advice (advice/delegate), while the second row refers to the subsample of those asking advice and deciding autonomously (advice only): as expected, the latter display a higher - even if only marginally - probability to put in place any form of control. Also, we find that more than 60% of investors do not exert any form of control on the advisor's activity, confirming some form of inertia (Stolper and Walter, 2015). Interestingly, only a small subsample (about 5%) exert both types of controls, i.e. direct monitoring and asking for a second opinion, which in general are selected alternatively. About one third of investors controls the advisor through direct monitoring, while only one tenth chooses the second opinion as a disciplining device.¹⁷

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 exert less control on their recommendations. Several other papers have argued that also the self-assessed degree of financial knowledge affect households financial behavior: Kramer (2016) finds that investors with a higher confidence in their own financial literacy are less likely to seek professional 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. These studies suggest that not only the objective measure of financial literacy, but also its subjective perception affects the likelihood that investors exert some form of control over advisors' recommendation.

Hypothesis 1: *among investors choosing to rely on professional counselling, both the degree of financial literacy objectively measured with a test and the one subjectively assessed by the investor affect the likelihood to put in place some form of control over 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 behaviour 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 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

¹⁷If we consider only investors choosing at most one mechanism of control (i.e., we exclude those who use both channels), the percentage of investors who directly monitor the advisor or rely on second opinion shrinks to about 28 percent and 5 percent, respectively.

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.

Hypothesis 2: *among investors relying on professional counselling, those with a high degree of test-based financial literacy control the advisors by directly monitoring their activity, while less literate investors are more likely to seek a second opinion.*

To test the two above 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. We build on the model of Pesendorfer and Wolinsky (2003) and 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*. 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.¹⁸

In Table 6, 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. The exclusion restriction adopted in the second selection 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 between asking for advice or to fully delegate. The level of trust also has a very strong, positive effect on this decision.

As a proxy measure of direct monitoring, we use the frequency of meetings between investors and their

¹⁸See Appendix A for details on the construction of this variable.

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.¹⁹ 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 advisor's recommendations through a comparison mechanism, similar to seeking a second opinion: 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.²⁰

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 confirm our hypothesis that investors with high financial literacy are more likely to monitor the activity of advisors by themselves. The self-assessed measure of financial literacy 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. both the investors choosing "Advice" and "Delegation". Interestingly, the results relative to direct monitoring in columns (3a) to (3c) are confirmed, while the coefficient of financial literacy for second opinion is now positive, though close to zero: the negative coefficient, though not statistically significant, emerges only in the subsample of investors asking advice only.

To check the robustness of these results, we recode the test-based financial literacy variable on a scale of

¹⁹We acknowledge that this variable may also reflect the frequency of trading. In Table 10, we specifically deal with this issue. Please refer to Section 3.1 for a thorough discussion.

²⁰See Section 3.2 for a critical discussion about the interpretation of this variable, and its pertinence as a proxy measure of the search for a second opinion.

three values, low, medium and high.²¹ Then we run again the Heckman ordered probit model with double sample selection presented in Table 6. We collect the results in Table 7.²²

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 recoded financial literacy variable are statistically significant and are helpful in predicting 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). This further confirms our third hypothesis. The self-assessed degree of financial knowledge positively affects 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 extended to the overall selected sample (Advice/Delegate). 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 finding corroborates 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 advisor's activity. Moreover, a lower level of financial literacy is associated with a more intense search for a second opinion while highly literate investors are more likely to directly monitor the advisors' activity.

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 finding uncovers two distinct and independent roles for the self-assessed financial competence and the test-based financial literacy in the strategic interaction between

²¹We introduce: A dummy variable *Financial Literacy_low*, which equals one for investors scoring at most three out of eight correct answers, representing approximately the lowest 20% of the selected subsample, and zero otherwise; a dummy variable *Financial Literacy_medium*, equal to one if the investors score four (median) or five out of eight correct answers, and zero otherwise; and a dummy variable *Financial Literacy_high* equal to one for those investors scoring at least six out of eight correct answers, representing approximately the highest 10% of the distribution, and zero otherwise. In 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. In Section 3.4, we also discuss findings relying on alternative measures of financial literacy, also to dispel doubt about the financial literacy percentiles used in the main specification.

²²We report in Table 7 only the results relative to the outcome equations - Monitoring and Second opinion - that are estimated, as in Table 6, following the Heckman ordered probit models with double sample selection and 2SRI estimation model to treat endogeneity.

investor and advisor. The degree of self-confidence in financial topics affects the probability of control of the advisor's activity, while the test-based financial knowledge drives the choice of the control mechanism put in place by the investor. Among investors who ask for advice but decide autonomously, those who are more confident in their own financial knowledge exert some form of control over the advisor activity. Those 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' behaviour by comparing different recommendations.

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, however, highlights that 60 percent of investors asking advice does not put in place any form of control, and that only a very small fraction of investors adopt both disciplining channels (about 5%). In Tables 8 and 9 we check whether our previous results are confirmed when we include these two groups of investors in the analysis.

In column (1) and (2) of Table 8 we study the characteristics of investors who do not exert any control, i.e., who do not meet frequently the advisor ("Monitoring" \neq 2) and who 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 low self-confidence in their own financial knowledge. This finding is consistent with the results reported in Table 7: a high self-assessed financial competence is associated with a stronger 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 behaviour. Finally, Table 9 presents the same regression analysis as in Table 7, but excluding from the sample those (29) investors choosing both disciplining channels. 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).

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 direct 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 study accurately his case. Alternatively, one can argue that investors meet their advisors more frequently if they want to change 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 6.²³ The variable "Frequency of trading" is recoded in a three-category ordered variable ("Rarely", "Sometimes", "Frequently") in order to closely match 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),²⁴ which confirms the effect of test-based financial literacy on the investor's monitoring activity. 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 linkage 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 is the trust in the advisor and/or the satisfaction for his activity. In Table 11, we study these testable implications. In columns (1a) to (1c) of 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 5.²⁵ One can argue that the intensity of the

²³Table 10, 11 and 12 follow a specification close to Table 6, considering "Financial literacy" (0 to 8) as regressor, rather than the three-segment version (low, medium, high) adopted in Table 7. Results under this alternative definition of Financial literacy are consistent with the ones reported here.

²⁴Note that we did not include "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 then earn more from transactions.

²⁵See Appendix A, for a precise definition of this variable.

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 could therefore be considered as supporting our conjecture about the direct monitoring behavior of highly literate investors. 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, thus confirming hypothesis 3.

As a further robustness check, we consider an alternative proxy measure for the intensity of the monitoring activity, the dichotomous variable "Monitoring_1". This variable is equal to one if the investor meets frequently with the advisor (variable "Monitor" = 2) and if he 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 monitoring 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 consult with different intermediaries. Luckily, in the questionnaire the respondent is also explicitly asked whether he/she or his/her relatives make transactions with other banks/financial intermediaries beyond Unicredit Bank. Therefore, we restrict our sample to respondents who affirmatively answer this question and we test whether the less literate investors among this group search for a second opinion. We report the results in Table 12.

Columns #a refer to the subgroup of respondents who affirm 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, confirming our prediction that financial advice is similar to a credence service.

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 the offers made by different financial intermediaries. We use this variable to proxy the search of a second opinion ("Second opinion_1")²⁶ and we report the results of the same regression model as above 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. However, the subjective degree of financial literacy does not have a significant impact on this alternative measure of search.

²⁶See 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 (test-based) *Financial Literacy*.²⁷

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.²⁸ The main findings of Table 6 and 7 are confirmed: Investors with a high level of 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.

5 Conclusions

This paper empirically investigates whether investors exert some form of control over the quality of the recommendations they receive and, if so, which mechanism they choose.

As predicted by Gennaioli et al. (2015), 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. A large fraction of investors seeks financial counselling but makes decisions autonomously. If we restrict our analysis to these latter investors, we observe that those with greater self-confidence in their ability to understand finance problems are more likely to exert some form of control over their advisors. The degree of test-based financial literacy influences the control mechanism the investor enacts. Investors with the highest level of financial literacy verify the accuracy of expert recommendations directly. Investors with the lowest

²⁷Tables 13a, 13b, and 13c report additional robustness results for the second selection equation of Tables 5. 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 5.

²⁸Figures 1a, 1b, 2a, and 2b plot the frequency distribution and the cumulative distribution functions of the two alternative measures of *Financial Literacy*.

level of financial literacy instead seek a second expert opinion that confirms the recommendation previously received. This latter control mechanism implies that, for financially illiterate investors, financial advice can be considered as a credence service, as for Pesendorfer and Wolinsky (2003). Our results suggest that easy access to several different experts' opinions can be particularly beneficial for the least financially educated investors.

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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	Trust in advisor		Financial literacy (test-based)		Self-assessed financial knowledge	
			Percent	Mean	Std.dev	Mean	Std.dev	Mean
<i>Demand for advice</i>								
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
Delegate	14.36	20.34	4.39	0.67	4.56	1.34	2.68	0.82
<i>Does not hold risky assets</i>	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	
<i>Test of instruments' validity:</i>								
- 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. Sub-samples by control mechanism

sub-sample	control mechanism						total
	second opinion	monitoring	none	second opinion only	monitoring only	both	
advice/delegate	69 9.7%	227 31.8%	454 63.7%	32 4.5%	190 26.6%	37 5.2%	713 100%
advice only	53 10.2%	173 33.4%	321 62.0%	24 4.6%	144 27.8%	29 5.6%	518 100%

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 "Delegate"). "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/Delegate)

This table reports findings of the same analysis of Table 6, but relative to the overall sample (advice/delegate) 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			Second opinion
			Monitoring			
			Rarely	Sometimes	Frequently	
	(1)	(2)	(3a)	(3b)	(3c)	(4)
Trust in advisor	0.323 *** (0.064)	0.148 *** (0.015)	0.012 (0.088)	0.007 (0.055)	-0.019 (0.142)	-0.214 (0.276)
Financial Literacy	0.223 *** (0.057)	-0.019 (0.012)	-0.117 ** (0.049)	-0.073 ** (0.032)	0.191 ** (0.079)	0.000 (0.066)
Self-assessed financial knowledge	-0.049 * (0.026)	0.040 * (0.021)	-0.019 (0.023)	-0.012 (0.014)	0.031 (0.037)	0.460 *** (0.133)
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		704		704
Pseudo R ²	0.24	0.12		0.09		0.17
Instrumented endogenous regressors:	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
Test of instruments' validity:						
- 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			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/Delegate)

This table reports findings of the same analysis of Table 7, but relative to the overall sample (advice/delegate) 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
	<i>Rarely</i>	<i>Sometimes</i>	<i>Frequently</i>	<i>Rarely</i>	<i>Sometimes</i>	<i>Frequently</i>		
	(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	0.89		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 5b. 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 5c. 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 (<i>Advice only</i>)		
	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	
<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	0.41		0.05		0.13	
<u>Test of instruments' validity:</u>							
- 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

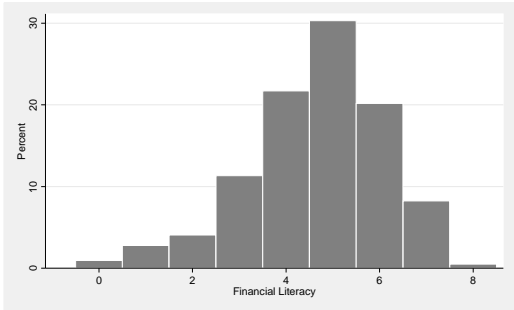
Notes: *Demographics* includes age, age squared, dummy for finance sector, dummy for gender, dummy for self-employment, dummy for retirement status, number of years of experience with financial instruments, number of years at Unicredit Bank. *Income and wealth* includes the (log of) individual income 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).

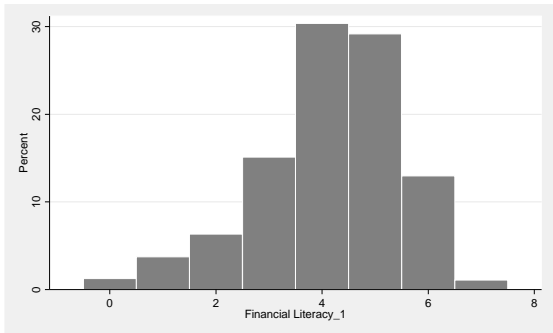
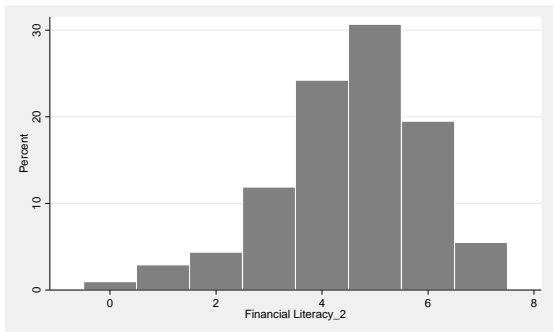


Figure 1b. Financial literacy distribution (robustness: "Financial Literacy_2")

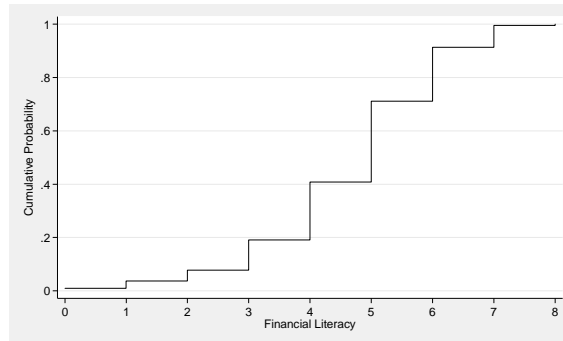
This figure represents the distribution of the variable *Financial Literacy_2* which captures the number of correct answers to seven questions (see Appendix A for details on the construction of the variable).



Source: UCS (2007)

Figure 2. Financial literacy cumulative distribution

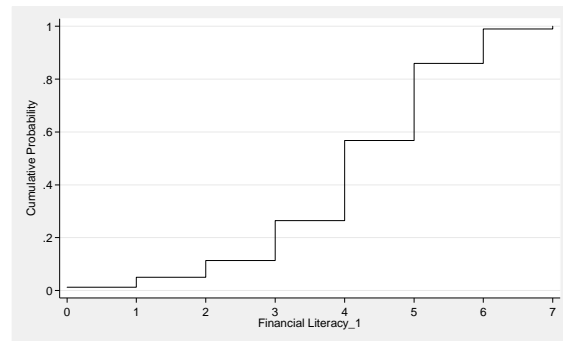
This figure represents the cumulative distribution function of the variable *Financial Literacy* which captures the number of correct answers to eight questions (see Appendix A for details on the construction of the variable).



Source: UCS (2007)

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

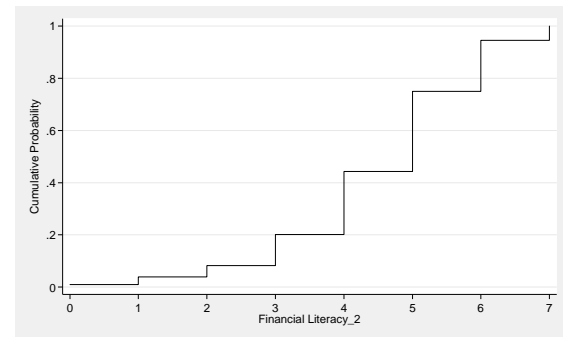
This figure represents the cumulative distribution function of the variable *Financial Literacy_1* which captures the number of correct answers to seven questions (see Appendix A for details on the construction of the variable).



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.²⁹

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/Delegate (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?"

²⁹Notice 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.³⁰

³⁰In 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 is³¹: $xV - p - s = V - p - 2s/x$. 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

³¹Pesendorfer 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
Instrumented endogenous regressors:	Financial literacy	-
	Trust in advisor	
Wu-Hausman test ($\chi^2(2)$ p-value)	0.00	0.32
Test of instruments' validity:		
- 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
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<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).