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**Beyond the MiFID: Envisioning  
cognitively suitable and  
representationally supportive  
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financial decisions**



**Beyond the MiFID:  
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*by Anna Balatel  
Riccardo Boero  
Inga Jonaityte  
Marco Monti  
Marco Novarese  
Vincenzo Pacelli*

*Milan, July 2013*

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## Abstract \*

*The recent introduction of the European Commission's Markets in Financial Instruments Directive (MiFID) was intended to enhance assessment of consumers' investment preferences, but it raises new challenges. The effectiveness of the MiFID as a tool to improve the relationships of investment service providers and their customers is questionable due to evident variability in implementation not only across most European countries but also across national financial institutions, as well. An inadequate questionnaire design induces mis-profiling of existing and potential clients, thus endangering the long-term relationships of financial institutions and their clients and affecting the future economic outcomes of the clientele, as well as the reputation of the company itself.*

*To enhance our understanding of how best to assess investment preferences, with the goal of providing feasible solutions for improving MiFID questionnaires, we explored the relevant research on some important determinants, such as the financial agent–client relationship, risk assessment, validity and reliability of questionnaires, and information communication, including language fluency, visual framing, and financial literacy. Additionally, to assess common problems that have been noted with MiFID questionnaires, we conducted an experimental study in which we administered a questionnaire to 73 clients of two retail banks, inquiring mainly into their financial expertise, investment product knowledge, obstacles to and opportunities for better understanding an investment, risk perception, and relationship with a financial adviser.*

*Fifty-eight percent of questionnaire respondents assessed their financial knowledge as poor, a result that could explain the clients' reliance on financial advisers for investment decisions. The customers resorted to professionals mainly because they deemed professionals to be knowledgeable of financial markets and because of their own limited experience. Our results will be useful to policy makers, questionnaire designers, financial advisers, and the customers themselves.*

*Aimed at protecting individual investors, the MiFID may achieve its objectives only for those consumers who have been properly profiled. As mis-profiling is quite common, it is imperative before launching a questionnaire to test the effects of the proposed questions across a range of consumer groups and to assess the risk of unintended consequences for particular customer populations. Financial institutions must then use the data they obtain to fulfill the one of the main goal of the Directive—protecting investors—by offering appropriate products to each client. We provide guidelines to help policy makers develop questionnaires that are comprehensible and valid and take into account consumers' real investment preferences and their decision-making processes.*

*Keywords: MiFID, Behavioral finance, Investment decision making, Assessment of investment preferences*

\* Marco Monti: IBM Italy, Milan; Vita-Salute San Raffaele University, Milan; Max Planck for Human Development, Center of Adaptive Behavior and Cognition, Berlin; Vincenzo Pacelli: University of Foggia, Department of Economics, Foggia; Riccardo Boero: Los Alamos National Laboratory, Los Alamos; Anna Balatel: University Cà Foscari of Venice, Advanced School of Economics, Venezia; Inga Jonaityte: University Cà Foscari of Venice, Advanced School of Economics, Venezia; Princeton University, Department of Psychology, Princeton; Marco Novarese: University of Eastern Piemonte, Centre for Cognitive Economics, Vercelli

## 1. INTRODUCTION

In recent years there has been an increase in the number of financial products intended not only for institutional investors but also for the individual, or retail, investor (Fischer, 2006; Laise, 2006). Yet this expansion of the so-called option set has not necessarily meant the average investor is better off (Bernartzi & Thaler, 2002). In fact, the opposite seems to be true; enormous losses have been suffered by individual investors during the recent financial downturn and they can be partially attributed to the unregulated marketing of complex, engineered products to unsophisticated retail investors (Olazabal & Marmorstein, 2010). The complexity and breadth of financial products available nowadays make an individual's judgments and investment decisions quite difficult (Clark-Murphy & Soutar, 2004), particularly affecting the evaluation of risk.

A new perspective needs to be considered to promote a more transparent financial environment and to encourage individual investors to take more responsibility for their economic future and to play a more active role in their financial decisions. Individual investors need, in fact, to be personally and interactively involved in their investment decisions (Mitchell & Utkus, 2004). To be successful they will need what we call "cognitively transparent" financial information provided by state-of-the-art investment tools. To achieve these aims, it is crucial to understand how average people make sense of financial products, understand risk, and develop the preferences and expectations on which they act.

We focused on analyzing the effects of techniques used to assess investment preferences and financial communication, such as those introduced by the European Commission's Markets in Financial Instruments Directive (MiFID)<sup>1</sup> on interactions between financial institutions and their customers (see Section 1.0). We examined the pros and cons from the cognitive and economic/decision theory perspectives; our ultimate aim was to provide a basis for future enhancements of the MiFID.

Our research extends the idea that various kinds of instruments (e.g., questionnaires, tests, narratives, etc.) can shape investment preferences while being used to assess them. Thus, they may act as persuasion tools and alter the investor's understanding of a particular investment feature (e.g., risk) or configuration of features. We argue that assessment questionnaires, such as those designed to comply with the MiFID, can be framed in such a way that they become nonneutral tools, influencing how investors portray their understanding of investments and risk. This, in turn, affects how financial institutions classify their customers' knowledge and abilities.

We also explored the relation among collected experimental data (i.e., MiFID-questionnaire-related content), Lusardi's financial literacy assessment (Van Rooij, Lusardi, & Alessie, 2007), and demographics to better understand whether the perception of investment features as well as individual responsiveness to textual primes and frames presented in a financial consultancy

<sup>1</sup> *The MiFID lays out the conditions according to which firms and advisers across the E.U. can compete in this context, covering rules on pre- and post-trade transparency, investor protection, and the assessment and control of risks by market participants.*

meeting could be influenced by any of the above-mentioned factors. We extend prior research on financial decision-making processes by drawing on the extant literature on assessment of risk and investment preferences and impression and framing management (Bettman & Weitz, 1983).

Behavioral finance and consumer research studies have only occasionally analyzed the role of preference-assessment techniques in framing and supporting the interactions of financial institutions and their customers (Diacon & Hasseldine, 2007), and rarely in negative phases of the economy, such as the situation that started in 2007 and is still affecting us today. In particular, in behavioral finance research there is still a need for analysis of the relation among the investment risk–return trade-off, perceptions and preferences, and the role of different assessment and representation techniques and their impact on shaping these preferences. Our aim was to fill this gap by focusing on the impact of assessment and representation techniques, such as those introduced by the European Commission’s MiFID, and on whether specific modalities and tools (e.g., structured and interactive financial questionnaires) can significantly alter the evaluation of preference for risky investments.

Fifty-two percent of the retail investors we interviewed claimed to have poor financial knowledge, and 72% admitted to having limited experience in the financial domain; they faced complex dilemmas when asked to make investment decisions. In particular, the lack of even basic financial knowledge rendered it very difficult to assess their investment preferences, and their frustration was at times quite evident.

In the following, we provide (1) a description of the MiFID and its guidelines and implications for shaping interactions between financial institutions and their customers; (2) a discussion of the literature on (a) tools for the assessment of risk and investment preferences and (b) questionnaire design techniques and their effects on framing and impression management, including a critical analysis of MiFID-compliant questionnaire features, with particular attention paid to the definition of concepts, presentation approaches, layout, and wording; (3) a description of the survey we ran and its experimental set-up, methodology, and results; and (4) a discussion of our main findings and conclusions coupled with a presentation of new research on perception and framing in medical and financial decision making.

## 2. **THE MiFID: THE NORMATIVE DEFINITION OF FINANCIAL ADVICE FOR INVESTORS AND ITS IMPACT ON THE ADVISER–CLIENT RELATIONSHIP**

The MiFID is the name by which is known Directive 2004/39/EC (Directive level 1), issued by the European Parliament on April 21, 2004 and was subsequently implemented at the E.U. community level through Directive 2006/73/EC (Directive level 2). We focus here on the Directive as transposed into Italian law by Legislative Decree n. 164 of 2007.

The MiFID has several objectives, including the creation of integrated and efficient markets, but the aim of this work was to investigate only the impact of the MiFID on the adviser–customer relationship through its normative definition of financial advisory services. In particular, the introduction of the MiFID has redefined the core of financial advice in international and national legislation. In Italy, the MiFID has elevated investment “advice” to the level of investment “service,” defining that service as the “provision of personal recommendations to a customer, either upon his request or at the initiative of the adviser (lender of the service), about one or more transactions relating to a particular financial instrument.”

The MiFID also states that a “recommendation is customized when it is presented as suitable to the customer or is based on the characteristics of the customer. A recommendation is not customized if it is disclosed to the public through distribution channels.” This definition of financial advice was adopted in Italian law by the post-MiFID Consolidated Law on Financial Intermediation (TUF; Art. 1, paragraph 5-f) and is significantly less restrictive than in the past, as it links the financial service in question only to the provision of personal recommendations about financial instruments, excluding de facto any type of investment advice that does not apply to financial products. From the analysis of the TUF, it is clear that the essential elements of the current Italian law are

- the customization of recommendations provided to the customer, regardless of the independence of the adviser, which presupposes a prior and thorough analysis made by the adviser on preferences, knowledge, experience, and financial needs as well as on the financial situation, objectives, and risk tolerance of the customer;
- the constraint that the recommendations should be applied to one or more transactions relating to one or more financial instruments;
- the fact that the provision of the financial advice can take place on the initiative of the adviser or the client.

Through the normative definition of financial advice services, therefore, the MiFID has significantly affected the relationship between adviser (or financial institution) and client. This is clear by looking at the process of providing financial advice services, which consists of the following main steps (not necessarily in this order):

- profiling the customer;



- signing the contract;
- producing the recommendation or investment proposal;
- monitoring the final balance of the client portfolio and producing periodic reports.

Through the transposition of the MiFID, the so-called principle of adequacy (*suitability*) was first formalized in the Italian legal system. Accordingly, persons qualified to offer advice should demonstrate knowledge of their customers (*know your customer*) in order to recommend products that satisfy the financial needs and characteristics of those customers. To satisfy this requirement, and in accordance with Art. 17 of Commissione Nazionale per le Società e la Borsa (CONSOB) regulation n. 17130 of January 12, 2010, advisers must correctly profile their customers, meaning they must collect and regularly update customer information relating to

- their knowledge and experience about the products and markets with reference to the investment proposal, namely:
  - a) type of financial services and products known or previously purchased by the customer;
  - b) frequency and number of investments made by the customer and the retention periods for certain products;
  - c) level of education and profession of the customer;
- their financial situation, namely:
  - a) sources and consistency of the customer's income and possibly of the customer's family;
  - b) total assets;
  - c) customer's (including family) financial obligations;
- investment objectives, namely:
  - a) period of time for which the customer is willing to tie up financial resources;
  - b) preferences regarding certain financial products;
  - c) risk tolerance;
  - d) the objectives of the customer and customer's family to be pursued through investment.<sup>2</sup>

According to the principle of adequacy, the financial advisers or intermediaries authorized to provide the service are asked to assess, on the basis of information collected on the customer and the characteristics of the financial products offered, if the recommendations in the investment proposal to the customer satisfy the following requirements:

- correspondence of the investment proposal to the customer's objectives;

<sup>2</sup> For more details, see Fortuzzi & Scolari (2011).

- customer has the ability to financially bear any related investment risks consistent with his or her objectives;
- customer has the ability to correctly understand, through experience and/or knowledge, the risks related to the fulfillment of investment proposals.

The legislation provides that all three requirements must be observed together for any investment proposal. Noncompliance regarding even one of these requirements prevents, *ex lege*, an authorized intermediary from proceeding with the offer of investment services and investment recommendations. Thus to assess the adequacy of a proposed investment for a particular investor, there is a need to know the customer and then periodically collect a variety of information on the same, allowing the adviser to properly define the customer's risk preferences. The MiFID therefore recognizes and protects the centrality of the adviser–customer relationship.

However, the MiFID and Italian national law do not provide standard modalities or predefined questionnaires for collecting customer information. Instead, advisers must be qualified to develop a model of analysis and evaluation that takes into account the wealth of information previously collected and that is based on their institution's own procedures and systems for recording and cataloging information collected on customers. Yet the high discretion provided by law to advisers in administering their questionnaires and assessing and weighting their customers' answers can expose customers to the risk of opportunistic behavior on the part of the advisers, who may contrive, through the mechanism of weighting, to change the scoring of their customers' responses in order to classify them into profitable segments for their business needs.

To avoid the occurrence of such behavior, the legislation provides that the adviser should act with diligence, fairness, and transparency. Specifically, in accordance with Art. 12 of CONSOB regulation n. 17130 of January 12, 2010, the adviser must

- provide to the customer or potential customer fair, clear, not misleading and sufficiently detailed information so that the customer or potential customer can reasonably understand the nature and characteristics of the advice in the field of investment and of the specific financial instrument recommended and make informed investment decisions;
- act in the interests of the customer; if organizational measures adopted for the management of conflicts of interest are not sufficient to avoid the risks of harming a customer's interests, the adviser is required to inform the customer clearly, before acting on the customer's behalf, about the nature and/or sources of conflicts so that the customer can make an informed decision on the service provided, taking into account the context in which conflicts occur;
- comply with the laws, regulations, and codes of conduct relating to professional activities;
- maintain the confidentiality of information acquired from customers or potential customers.

### 3.

## **THE PROBLEMS OF REPRESENTATION AND UNDERSTANDING OF RISK FOR INVESTORS: A LITERATURE REVIEW**

### 3.1

#### **The concept of risk**

Investors decide to deprive themselves of the immediate and short-term availability of part of their financial resources because they expect positive economic returns in the future, which depend on the length of time the resource will be unavailable and the risk of losing the investment. In finance, these two variables, time and risk, are correlated: the more protracted the maturity of an investment—*ceteris paribus*—the greater the associated risk and therefore the return expected by the investor.

Investors evaluate the variables time, expected return, and risk when deciding whether and how to make an investment. These assessments are subjective, of course, being very personal, especially the evaluation of risk. Although financial theory has tried to represent the concept of risk with mathematical and statistical “objective” models, the perception and understanding of risk remain a subjective and idiosyncratic cognitive process.

Traditional financial theory considers the risk associated with an investment as the probability of obtaining a performance different from that expected. Risk can be associated with opportunity, such as when returns are higher than expected, or with danger, such as when returns are lower than expected or all or part of the invested capital is lost. Investments can therefore lead to different possible outcomes, each associated with a probability. Traditionally, the risk associated with an investment has been estimated through the dispersion or the variability of possible outcomes around an average expected value. In other words, the higher the volatility of returns around an average value, the higher the investment risk. The problem is that volatility, dispersion, and variability are part of the vocabulary of finance professionals but are often unknown to most investors, who cannot conceive of risk through concepts they do not know. Financial advisers should therefore always ask how the individual investor perceives and understands risk without imposing their own vision expressed in technical terms.

The most recent literature on behavioral finance has shown, through a series of empirical studies, that the way in which people form their concept of risk is multidimensional, and it is processed subjectively and differently by every individual. Several studies have sought to define a set of heuristics and cognitive mechanisms that influence the dynamics of the formation of investors’ judgments.<sup>3</sup> In particular, the heuristic mechanisms that are relevant to the perception

<sup>3</sup> *On this issue, see, among others, Diacon, 2004; Linciano & Soccorso, 2012; Lucarelli, 2011; Olsen, 1997; Rigoni, 2011; Slovic, 1972; Slovic & Lofstedt, 2000.*

of risk by investors are familiarity, representativeness, availability of information, and anchoring. *Familiarity* refers to how quickly past experiences can be retrieved from memory. A more familiar (i.e., easily retrieved) investment option might be considered better than an unfamiliar one. *Representativeness* is used when a probability judgment is made on the basis of stereotypes or past experiences. An investor might choose an investment because it has performed well for him or her in the past. The *availability of information* can distort the perception of risk when investors believe irrationally that products or assets are less risky because they have received greater media coverage. And in *anchoring*, an initial hypothesis or salient information acts as reference point, against which subsequent adjustments are made.

According to behavioral finance theory, the absence of an assumption of rationality of perceptions and preferences of investors leads, among other things, to a mismatch between the objective risk and the risk perceived by the individual. This misalignment is driven by the heuristics mentioned above as well as by the so-called certainty effect—which leads investors to believe that events that are merely probable are certain and to underestimate or even ignore events that are simply not likely—and by factors such as emotions, specific context, sociocultural status, and the degree of optimism and overconfidence in their own abilities, among others (Linciano & Soccorso, 2012).

As mentioned above, the fact that risk can be perceived differently by investors and advisers is supported by empirical research. For instance, Olsen (1997) interviewed financial advisers and U.S. investors who managed their own investment accounts and asked them to list their definitions of financial risk. Half of the respondents provided more than two definitions of risk, giving it different attributes and also confusing sources and definitions of risk. The three most common definitions of financial risk provided by the respondents were

- considerable loss;
- return lower than expected;
- business risk, defined by various elements.

An even more heterogeneous framework emerged in the investigation conducted by Diacon (2004), who interviewed private investors and financial advisers in the United Kingdom. Diacon showed that advisers and investors perceived risk variously as

- lack of confidence in the product or in the intermediary provider;
- considerable loss;
- volatility of returns;
- lack of knowledge and transparency of the product;
- inadequacy of regulation.

Veld and Veld-Merkoulova (2008) came to similar conclusions. They interviewed a panel of 2,226 Dutch investors and found that most perceived risk through the use of more than one measurement criterion. These studies emphasize how varied the concept of risk is, among financial professionals as well as laypeople.

Recently, an interesting line of research has started from the assumption that both the perception of risk and its tolerance are significantly influenced by emotions, making them difficult to detect through traditional measurement systems, such as questionnaires, and resulting in a distorted measurement (*biased risk tolerance*). Researchers have instead introduced alternative detection methods borrowed from affective neuroscience, such as psychophysiological tests and biofeedback.<sup>4</sup> Some of these so-called neuroeconomic studies have looked at the neural areas that are activated during specific decisions, such as investing under conditions of uncertainty. Neuroeconomic theory is not based on the assumption of investor rationality, as proposed by neoclassical economics, but instead assumes that investment decisions are the expression of often unconscious brain processes.

## 3.2

### **Assessment techniques and their effects on framing and impression management**

Our goal in this section is to present a brief general introduction to current techniques for assessing risk tolerance and investment preferences and to investigate in particular the potential power of MiFID-compliant financial questionnaires to identify investors' authentic investment preferences. We focus on how various assessment techniques and approaches, which differ in how they convey information, can differentially influence investors' risk tolerance and behavior and, ultimately, their decisions. The idea is to identify whether financial questionnaires such as those designed to comply with the MiFID modify investors' perceptions and framing of relevant information and thus influence how advisers categorize their clients' investment attitudes and aims.

#### 3.2.1

##### Measurements of risk and investment preferences: An economic and cognitive perspective

There is extensive psychological literature, beginning with Tversky and Kahneman (1981) and continuing with several research groups across the world (ABC Group, Gigerenzer 1990, etc), reporting that individuals use a number of heuristics or decision-making shortcuts through which they “simplify” the world and make decisions. The pairing of risk and investment

<sup>4</sup> On this issue, see, among others, Chen & Corter, 2005; Faff, Mulino, & Chai, 2008; Lo & Repin, 2002; Lo, Repin, & Steenbarger, 2005; Lucarelli, 2011; Lucarelli & Brighetti, 2011.

preference assessment with financial product descriptions is a key element influencing heuristics-driven investment decision processes and, therefore, shaping the interaction between supply and demand. (Lessons on this interaction and a more general concept of financial knowledge can be found in the behavioral finance research; see, e.g., Mitchell & Utkus, 2004.) The European Commission partially recognized the implications of this pairing when it developed the MiFID. Only by accurately identifying customers' risk attitudes and investment preferences is it possible for financial institutions to offer appropriate investment advice, with positive side effects being improvement of the relationship of financial institutions and their customers and trust formation.

The most common tool used by financial advisers to measure risk attitude is the questionnaire, which can also be used to collect information about customers' sociodemographic characteristics, financial situation, objectives, and investment horizon. Yet several key aspects of the questionnaires designed to comply with the MiFID—and the evidence collected with them—have been called into question.

In the next sections we introduce some of the most famous risk tolerance measurements from the economic and psychological literature and present the critical issues that we identified in MiFID-compliant questionnaires. We discuss possible ways to enhance MiFID questionnaire results.

### 3.2.2

#### Measuring risk tolerance: A behavioral approach

The literature on risk tolerance is so large and complex that it is worth clarifying the terms risk tolerance, preferences for risk, risk attitude, risk management, and risk knowledge; these expressions are often used interchangeably in the economic literature and by financial market players. More detailed definitions will support a deeper comprehension of their role in the investment preferences assessment phase.

Risk tolerance can be defined as the level of financial risk that an individual is willing to support in respect to the risk characteristics and performance of an investment option. Risk tolerance is sometimes used synonymously with the terms risk aversion and risk appetite, common in classic economic theory; the most recent scientific contributions refer to more detailed definitions that combine the classic notion of risk aversion/risk appetite with those of risk attitude, risk knowledge, and risk management/risk capability.

Risk attitude can be defined as a set of emotional and psychological components that determine an individual's reaction in risky circumstances and, therefore, that person's emotional ability to assume risk; it is quite difficult to measure. Risk management mainly concerns the economic and financial ability of an individual investor to take financial risks (Cordell, 2001). Risk knowledge indicates an individual's ability to understand risk from a statistical and operative point of view.

The adoption of a specific notion of risk tolerance is critical to our research purposes; it is central to the definition and measurement of risk in general and, therefore, to qualifying the set of

tools for the assessment of the investment decision process. The classic finance literature refers to an objective concept of risk tolerance. Risk tolerance can be quantified by appropriate statistical methods and summarized in a single parameter (e.g., the variance, the downside risk, the beta of the CAPM<sup>5</sup>) and is applicable in respect to several profiles (e.g., credit risk, market, liquidity). In contrast, the psychologically grounded behavioral finance literature refers to a subjective notion of risk tolerance whose components have cognitive, psychological, and emotional aspects.

The tools adopted to measure risk and intertemporal preferences fall into two categories, following the two notions of risk tolerance. Objective tools belong to the economic/quantitative class and are grounded in neoclassical economic theories and/or behavioral and experimental finance; subjective tools form the second category and are much more related to cognitive science, psychology, and psychometrics (i.e., the science that studies the measurement of psychological variables, or so-called constructs). The economic and quantitative approach is based on techniques of quantitative analysis that require the specification of a utility function and the subsequent estimation of the parameters of that function, corresponding to risk aversion and the subjective intertemporal discount rate. This estimate is based on data collected in laboratory experiments or through surveys in the field (so-called field data, collected, for example, via the Web) or through the administration of a questionnaire to a sample of subjects (survey data).

Among the most frequently adopted instruments is the well-known *multiple price list* (MPL). An MPL consists of a sequence of pairs of risky lotteries or options constructed in such a way that it is possible to estimate a range of the interviewee's level of risk aversion based on the choices made. This method can also be applied to detect intertemporal preferences by offering individuals the choice between an amount of money available immediately and a larger sum available in the future; the choice is repeated a number of times by varying (depending on the design of the experiment) the current or future payoff. The estimate of the intertemporal discount rate depends on the number of times the subject chooses to receive the future sum. In the MPL format, the most common tool for risk tolerance assessment is that developed by Holt and Laury (2002).

One important aspect of the MPL format is that its detection of risk tolerance may be subject to the framing effect<sup>6</sup> (Menon & Perali, 2011), and in the absence of suitable correction, it can be distorted toward risk neutrality. As shown in some laboratory experiments, subjects taking the tests tend to frequently choose the risk neutral option when asked to choose among several pairs of lotteries; such behavior increases the less the experiment is understood and the greater the fear of making mistakes. Application of the MPL method requires, therefore, iterative controls to check the consistency of the collected answers and verification that participants understand the test.

Menon and Perali (2011) administered the Holt and Laury MPL test to a group of university and secondary school students to estimate their risk aversion and their subjective discount rate.

<sup>5</sup> *capital asset pricing model*.

<sup>6</sup> See Section 3.3.2.

They found that this methodology could be used even by financial advisers to assess investors' risk profiles as long as some fundamental aspects of the set-up were respected. In particular, the decision context in which the profile assessment is to be carried out must be kept as simple as possible, because the risk tolerance and the degree of impatience (i.e., subjective discount rate) can change significantly depending on the type and duration of the investment; also the income and individual wealth must be accurately identified because they are strongly correlated with risk preferences and the subjective discount rate. Furthermore, the authors noted that risk aversion and the discount rate should be reassessed every time there is a significant change in an individual's economic conditions or household composition, as both can have an effect.

Psychology and psychometrics have developed various tools and techniques to identify individuals' psychological traits; some are especially tailored to investigating risk attitude and the degree of impatience or impulsivity. The Sensation Seeking Scale developed by Zuckerman in the 1960s is based on a questionnaire that explores the experiences an individual has already had together with his or her intentions for future plans in order to assess the propensity to seek strong sensations and, therefore, risky situations. The questionnaire consists of two parts, each composed of 54 items that relate to "experiences already lived" and "intentions for the future," respectively. For each item the subject can choose among three possible answers (for past experiences: "I haven't ever done it," "I did it once," "I did it several times"; for future intentions: "I have never wanted to do it," "I thought I'd do it, but probably I wouldn't," "I thought I'd do it and I will do it if I get a chance"). Individuals with high scores are classified as high sensation seekers; they are likely to seek excitement through, for instance, adventure or the use of drugs or alcohol. Individuals with low scores are classified as risk avoiders because they prefer less risky activities.

Another tool, originally proposed by Bechara, Damasio, Damasio, and Anderson (1994), is the psychological test known as the Iowa Gambling Task (IGT), which is associated with the somatic marker hypothesis. The IGT was originally used to analyze the ability to choose in patients with prefrontal and orbitofrontal cortex lesions. The somatic marker hypothesis is based on the assumption that emotions are frequently associated with somatic signals such as changes in blood pressure and skin conductance, and emotion may guide choices under uncertainty. Administering the IGT (which simulates real decisions) and simultaneously detecting a somatic marker (such as changes in skin conductance) can lead to an undistorted assessment of risk aversion.



### 3.2.3

#### How to design a valid questionnaire

Psychometrics provides criteria and analytical tools for the definition of a "valid" questionnaire; a valid questionnaire is an instrument that actually measures what it is meant to measure and that allows the researcher to obtain a measure characterized by a reduced margin of error (Roszkowski, Davey, & Grable, 2005). These attributes are referred to as the validity and the reliability of the questionnaire, respectively. The criterion of validity is met if and only if the quantity to be measured is identified with precision. In the case of investment decisions, the variable of interest is the tolerance of financial risk; it has been shown that this can depend on several factors, each requiring an autonomous investigation. Cordell (2001) classified these factors into four categories: (1) risk understanding/knowledge; (2) risk appetite as it relates to the notion of objective risk, that is, the risk–return ratio the subject is willing to accept; (3) risk appetite as it relates to the notion of subjective risk, that is, the emotional capacity to deal with uncertainty; and (4) risk capacity, determined by the current economic situation and income prospects. A valid questionnaire must distinguish between risk attitude, which is just a psychological construct, and risk capacity, which is related instead to the individual's socioeconomic conditions. With this clarification, questions that simultaneously address both aspects, risk attitude and risk capacity, are not valid.

The concept of reliability is closely connected to the degree of precision and margin of error of the measurement; it depends on the response stability independent of the mode and context of the questionnaire administration (e.g., face to face, by telephone, over the Internet, etc.). Other aspects that may have direct consequences for the reliability of the questionnaire are the number and clarity of the questions; the fewer the questions, the lower the reliability of the questionnaire, because a single question can contribute too much to the explanation of the measurement under observation, making it unstable. The questions' clarity is particularly important in a complex context such as financial investment where misconceptions and misunderstandings are common. Clarity has multiple dimensions. It concerns, for example, layout, structure, type of questions, and adopted language, to name a few.

Psychometrics has also suggested tests to measure the validity and reliability of a questionnaire. The first is ascertained by calculating the correlation between the measurement obtained by the questionnaire and that obtained by other means of detection (the so-called test of concurrent validity or criterion). A policy that considers the share of financial wealth that an interviewee claims to have invested in actions might be adopted to validly assess risk tolerance; the adoption of this criterion requires, however, that the previous investment decisions have been made independently by the investor, that is, without the assistance of a financial consultant. Questionnaire reliability can be checked, in particular, for the stability of the measurement by comparing a large number of measurements or questions that deal with the same topics but are phrased and performed repeatedly in different contexts or in different ways.

Best practices in questionnaire design also indicate that it is fundamental to identify those items that present the highest explanatory power in respect to the variable under investigation; they must be identified by adopting appropriate methods of statistical analysis, such as

Cronbach's alpha or factor analysis (Holzhauer & McLeod, 2009). All the measures aimed at assessing risk present particular trade-offs that must be considered and, eventually, counterbalanced when the goal is to obtain a wide perspective on investors' preferences and understanding.

Risk tolerance also varies depending on the decision context or frame of reference; for example, an individual might appreciate risk in recreational sports but avoid it when making financial choices. It is evident, therefore, that to investigate the complex and multifaceted topic of risk tolerance it is necessary to adopt a specific but wide-ranging set of tools that takes advantage of the state-of-the-art scientific advances from behavioral finance and psychometrics.

### 3.3

#### **Essential aspects of MiFID-compliant questionnaires for financial preference assessment**

It is very important to identify the decision-making unit and understand the environment in which the investment decision-making process occurs, as several factors can have an influence on it. Investment decisions can be made at the individual or the aggregate/family level. In the classic economic models of expected utility, given the same per capita income, larger families should exhibit a greater propensity toward risk because the number of people who share the portfolio risk is greater. Behavioral models have also revealed different risk attitudes depending on age, gender, and decisional group dimension (i.e., the number of people belonging to the same group/family). The MiFID-compliant bank questionnaires we examined did not properly assess where the investing decision occurs.

Measurements of risk tolerance can be static or dynamic. Using a dynamic model—that is, one that considers the dimension of time—rather than a static model allows examination of the impact of the investment horizon, that is, the duration of the investment, on an individual's investment decisions. Depending on the investor's age, the investment horizon can be more or less influential. In a dynamic context the indicator of risk aversion may capture the tendency toward intertemporal fluctuations of wealth and consumption. In the classic economic models the relation among age, aversion to fluctuations in consumption, and investment decisions are ill-defined and ambiguous and they depend on the form of the utility function representing the investors' preferences. The MiFID questionnaires we examined did not assess risk over the life span or, unfortunately, support investors in thinking about future economic scenarios and related options.

Another important aspect of a successful questionnaire is preference coherence analysis. In the classic context, the choices of individuals are assumed to be dynamically consistent: An optimal decision made at any given time is expected to remain the same as time passes by. This assumption is the essence of the intertemporal discounted utility model, according to which the individual calculates the utility of all the alternatives available over time as the weighted discounted sum (discounted at a subjective discount rate) of the utilities for all the alternatives

available in the future. By assuming that the subjective discount rate remains fixed, if an investment is preferred over another in a certain time frame, it will be so for any future date, and if an individual is indifferent about two alternatives that are separated by a given time interval, that individual will continue to be so even if, at equal intervals, they are both postponed or anticipated. The MiFID questionnaires we analyzed did not focus on assessing how common investors think about the effects of their investments; in particular, they completely failed to support the identification and analysis of different scenarios and therefore did not even reflect the assumptions presented in the neoclassical economic models.

A number of recent studies based on the IGT have shown, in fact, a gap between "declared" attitude toward risk, detectable through traditional methods of qualitative detection, and real attitude toward risk, corresponding to the actual intention to undertake a risky activity (Lucarelli & Brighetti, 2010, 2011). This gap is associated not only with the sociodemographic characteristics of respondents, but with various other factors, such as degree of self-esteem, difficulty with self-representation, projection of self-image, and return expectations related to a certain self-representation.

In the sociopsychological literature measurement robustness refers to subjects' heterogeneous interpretations of the content of a questionnaire. A set of MIFID-compliant questionnaires that differed in format and phrasing were administered to one set of individuals; the result was that they provided quite different and conflicting measurements of risk tolerance. To manage this aspect, one of the most effective techniques in psychology is to design surveys with redundant control questions that point to identical items but are presented with different phrasing. Robustness can be measured by looking at the convergence of answers to the questions that are similar in content but differently phrased. The MiFID questionnaires we examined very rarely presented control questions through which robustness could be measured.

Individuals usually approach investment decisions, and financial planning more generally, by pairing their investments and financial needs, classifying financial products according to a small subset of "known" features that they try to pair with specific financial needs. The theory of mental accounting provides a preliminary explanation of this "pyramidal" approach. The pyramid of investments is structured in several levels, each of which corresponds to a particular need and a certain type of financial product. The bottom layer represents the need for safety and security; it is managed with low-risk investments (deposit accounts, treasury bills, and short-term funds with liquidity). Higher layers correspond to optional aspirations and are managed with products that provide higher potential returns on investment and higher risks; at the top of the pyramid are the riskiest investments. The majority of individuals seem to be driven by such a simplified approach; they divide their portfolios based on different layers/needs, preferring to concentrate first on security and then on potentially higher earnings (Shefrin, 2000). The MiFID questionnaires we examined were not very focused on assessing investors' real aims and this was reflected in vague questions dealing with components that were not clearly defined (i.e., investment style).

### 3.3.1

#### Assessed risk tolerance and experienced risk attitude: How to deal with this potential gap

An important issue that emerged in our investigation was that there may be a significant difference between the effective risk-taking attitude that emerges from investors' real portfolio management (i.e., their risk-taking behavior) and their risk tolerance as measured by an MiFID-compliant questionnaire. Although this issue can (under certain conditions described in more detail below) be compatible with the principle of adequacy, the divergence between the risk attitude that can be deduced from behavior and the risk attitude identified by an adviser suggests that there is room for future enhancements to assessment tools.

Some European regulators have already taken the initiative in this matter, in particular, the French Financial Markets Authority (AMF), the British Financial Services Authority (FSA), and the European Securities and Markets Authority (ESMA)<sup>7</sup>; acknowledging the inadequacy of the questionnaires used by the financial industry, they have suggested guidelines that refer mainly to the type of information that must be gathered and to the procedures needed for effective assessment of investment adequacy.

### 3.3.2

#### Cognitive transparency and psychological suitability: The framing effect

The MiFID initiative was designed to optimize consumers' long-term investment outcomes by simplifying the process of financial decision making for the client and the institution. Generally, the foundation of quality financial decisions lies in the ability to collect, synthesize, and use complex financial information; to establish appropriate financial objectives and plans to reach them; as well as to use of financial services effectively (Jump\$tart Coalition, 2007, p. 1). The latter directly pertains to the MiFID questionnaire, which is a rather inexpensive tool, in terms of time and effort, both for individual consumers and institutions and advisers. The cost of unintended consequences, however, is often underestimated. Various biases arise from the use of complex language and persuasive visuals (Arunachalam, Pei, & Steinbart, 2002; Bertrand, Karlan, Mullainathan, Shafir, & Zinman, 2010), further leading to inaccurate customer profiling. For instance, the questionnaire language should be carefully tailored to specific customer segments, lest it lead to misattributed risk preferences, erroneous financial objectives, and ultimately suboptimal financial choices. Clarity, fluency, and simplicity are important aspects of

<sup>7</sup> ESMA is an independent E.U. organization that contributes to safeguarding the stability of the European Union's financial system by ensuring the integrity, transparency, efficiency, and orderly functioning of securities markets, as well as enhancing investor protection.

communication. However, it is also important to assess whether the financial language and numerical examples used are appropriate to the level of the client's financial sophistication. For this reason, information on the knowledge and experience (not only financial!) of the clients has to be obtained so their financial situation and overall investment objectives, including investment horizon and risk tolerance, can be assessed. Yet such information has to be collected with exceptional care and without introducing framing-related biases.

Language framing is a well-known and often properly addressed phenomenon, but visual framing is often overlooked. A recent study on financial decision making (Olivola & Todorov, 2010) documented that visuals can be highly influential in financial decision making for both experts and nonexperts. Visual aids (Arunachalam et al., 2002) that have not been pretested are likely to induce misunderstanding, and thus the collected data would be seriously compromised (Schweitzer & Croson, 1999). For instance, Balatel and Jonaityte (2012) showed that even the inclusion of a smiling versus a neutral face in the background of a question can affect the responses to the question. Financial institutions should either refrain from using visuals or use carefully preselected graphs and images. After all, if used correctly, visuals can enhance understanding and summarize data in a meaningful way. The MiFID allows freedom on what questions to include and how to formulate them, as long as they fit into the recommended sections. But excessive freedom and little regulation open the door to inappropriate or deceptive framing and inclusion of obfuscating visual aids. The questions can be misleading and even disingenuous if framing and the appropriateness of visuals are not carefully considered. The notion of visuals in this paper refers mainly to noninformative elements present in questionnaires that might alter the perception of relevant information.

### 3.4

#### **Knowing your customer: Generic or tailored questionnaire?**

One unavoidable element of MiFID-compliant questionnaires is customer profiling: The criteria used could help financial advisers divide consumers into homogeneous groups. Well-known sociodemographic and economic drivers (income, geographic location, profession, and life-cycle stage, etc.) are not sufficient criteria for client segmentation. To bring real benefits to the table, the questionnaires have to evaluate not only the financial knowledge (Alba & Hutchinson, 1987; Brucks, 1985) but also the financial literacy and financial capability of customers, often referred to as financial sophistication. Risk tolerance, combining both risk attitude and risk capacity, is another important aspect to assess in clients (Cordell, 2002; Roszkowski et al., 2005).

The MiFID classifies customers broadly into (1) retail customers, (2) professional customers, and (3) eligible counterparties (e.g., investment firms, credit institutions), but this classification may be too narrow to be of use to most financial institutions. A better, more tailored profiling of customers within the categories provided by the MiFID and a correct expansion in the number of relevant groups the clients are classified into by each company can be achieved by prescreening customers with a standard test of financial literacy and financial capability, supplemented by

questions on education, investment expertise, and general attitude toward and understanding of financial realities.

A customer's financial literacy is another important piece of information. Remund (2010) defined financial literacy as

a measure of the degree to which one understands key financial concepts and possesses the ability and confidence to manage personal finances through appropriate short-term decision-making and sound, long-range financial planning, while mindful of life events and changing economic conditions. (p. 284)

There is a pretested, heavily researched and standardized scale to measure basic and advanced financial literacy, developed by A. Lusardi, that we believe can be integrated into MiFID-compliant questionnaires. This scale has been used to test the general population's financial literacy in several European countries (Lusardi & Mitchell, 2007, 2011). Like most existing measures of financial literacy, Lusardi's scale reflects the "objective knowledge," the amount, type, or particular order of financial information stored in a person's memory (Brucks, 1985). There is a large body of literature suggesting that many consumers of financial products lack knowledge of basic financial terms, such as annual percentage rate (e.g., Lacko & Pappalardo, 2007).

Although it is important to have information on the customer's level of education, it is not the same as assessing practical knowledge, including financial numeracy. As mental computation is perceived as a burdensome task for most clients, extra care should be taken with numerical examples, to avoid cognitive biases (Huhmann & McQuitty, 2009).

Self-report measures elicit subjective knowledge, or what consumers think they know (Brucks, 1985). Yet there is usually a discrepancy between externally observed and self-reported data (Gonyea, 2005). For consistency, along with collecting self-reported data, institutions should test their clients' financial knowledge, borrowing from scientifically validated scales, such as Lusardi's financial literacy scale. In a study by Balatel and Jonaityte (2012), financial literacy proved to be an important determinant of how people perceive the financial information in an investment product. Before offering a financial product to a specific client, any MiFid-compliant institution has to have information on that client's level of financial literacy—in order to offer suitable products as well as provide understandable explanations of the product features. A different approach is needed for a person who has limited knowledge of time–value–money in contrast to a keen investor.

In general, there is a lack of a well-defined guidelines for interaction with clients through questionnaires. Financial institutions complying with the MiFID should identify or review their goals, mission, and vision. This will inform what data should be collected from clients and how the questions should be formulated to maintain the questionnaire's integrity. The financial institutions should pretest questions before including them, to analyze their effectiveness. The questions' efficacy should be monitored. Questionnaires can be adjusted and clients reclassified when new information is received from the environment or clients or when there are changes within the company itself.

Obtaining feedback from clients can be a goldmine for companies, an easy way to enhance the design of their questionnaires with direct input from the source of data—the clients. A free-form comments section can be introduced, or clients can be asked for specific feedback on

1. what clients feel is the most important piece of information about themselves that is relevant for the financial institution or adviser to know;
2. how to improve the questionnaire, identifying parts that are unclear or redundant and suggesting new items;
3. how much time and effort it took to reply to the questionnaire; and
4. what changes should be made to make the questionnaire more accessible.

The accessibility of the questionnaires should be carefully considered. Clients might be reluctant to take the questionnaire in the bank or have no time to do so, so the questionnaires should be made accessible in other ways. An online version should be offered to clients so that they control when and where they complete the questionnaire. The financial institutions must be clear on how the data will be used and protected, to motivate clients to be truthful in their disclosures. Representatives of the institutions should be accessible and ready to answer any questions about the questionnaire and/or include a FAQ section on their website. The software used to distribute the questionnaire should be user friendly and bug free.

Similarly, the accessibility of the language is a critical issue. Questionnaire designers often use convoluted, obfuscating language or jargon in formulating questions. The language employed in questionnaires should be clear, simple, precise, and unambiguous. Unnecessary details and complex terms should be avoided. A more complex exposition of information leads to differences in the level of understanding between genders, while a simpler exposition can align the understanding of the respondents of both genders (Schubert, Brown, Gysler, & Brachinger, 1999). The goal of financial institutions should be to simplify the clients' information processing while making choices in questionnaires:

- All the ratings, ranking, scales, and measures employed should be meaningful.
- All the questions asked should be precise, unambiguous, and written in plain language (very fluent).
- All the data presented to clients in the questionnaire should be ordered logically.

Understanding the meaning of each decision option is a necessary if not sufficient condition for an informed decision. In fact, the way in which individuals make sense of alternatives and their features plays an important role in defining the perceived decision set and, consequently, the potential outcome of the overall decision process.

The financial institutions should consider carefully the equivalence of textual information for different target groups (Olazabal & Marmorstein, 2010), by adapting the complexity of language to the level of the least “literate” group, but without compromising the content of the questions themselves. The language used should be adapted to those clients with the lowest level of understanding. At the same time, financial institutions should consider alternative ways to obtain meaningful data from immigrants and foreigners—perhaps by offering clients the opportunity to choose the language of the questionnaire.

### 3.5

#### **The Strategic Reactions Elicited by MiFID-Compliant Questionnaires: A Game-Theory Perspective**

The relationship between a customer and a financial adviser is affected by several economic dilemmas, even when investment choices are not delegated. The main cause of the dilemmas is the information asymmetry between the two participants in the relationship, that is, the difference in the information they hold and the difficulty in sharing it.

This asymmetry creates space for opportunistic behavior and for mistakes in expectations that can lead to mistrust. For instance, an adviser with a personal incentive to convince clients to buy a specific financial product, such as one issued by the adviser's own financial institution, can omit details of that product and of competing products in order to drive the choice of the client. A client suspecting the possibility of this type of behavior may begin to ignore any kind of advice received. And an unsuspecting client does not receive the information needed to make the best decision.

Economists typically frame a relationship of this sort as a "principal-agent problem" (for an introduction and review with a specific focus on the organizational consequences of agency theory, see Eisenhardt, 1989). A customer, the principal, has to rely on the financial information and advice provided by the adviser, the agent. The agent has to search for and select the information to provide, and such activities are costly for two reasons: First, there could be incentives to manipulate a customer's choices toward solutions that even if do not increase the client's wealth, in the short run, they may increase the adviser's personal wealth (i.e., a possible opportunity cost), and second a significant effort in terms of time and energy must be made to understand the client's needs, to search for a wide spectrum of eligible investments, and to communicate their characteristics in an effective manner. The client does not have the means to measure the quality of the service provided, that is, the effort made by the adviser, or evaluate if the adviser is acting in the client's best interest. This is because the client is not a financial expert—otherwise, a financial adviser would not be needed. Solutions to the agency problem in the game theoretical literature rely mainly on the modification of agents' incentives with fees and risk sharing (Rees, 1985, Shavell, 1979), to reduce the distance between the two parties.

Yet information asymmetry is also the reason why the client-adviser relationship exists at all. Furthermore actual interactions between clients and their advisers teach us that even when the incentive to behave opportunistically exists, nevertheless the social relationship between the two can be fruitful. This latter consideration and several experimental investigations of the agency problem (see, for instance, Miller & Whitford, 2002) highlight the need for research that focuses more on the social dimension of the interaction and acknowledges the building of trust as an essential element of a fruitful and stable client-adviser relationship. For instance, different approaches such as trust and investment games (Berg, Dickhaut, & McCabe, 1995; for a recent review see Ostrom, 2009) enrich the game theoretical framework of the client-adviser relationship by take into account the existence of trust between the parties and the incentive for the adviser to build up a reputation.



At the core of this approach lies the idea that interactions are repeated, and that given some conditions, the adviser has a significant incentive to satisfy the client's needs, ignoring short-term opportunities for self-enrichment not just because it is important to keep a stable relationship with clients but also because doing so bring benefits in terms of building a reputation and attracting new clients. Similarly, a retail financial institution does not have an incentive to adopt a strategy that promotes internally issued financial products that could generate high profits in the short term but lead to higher losses in the long term.

The freedom of clients to change financial institutions and a high level of competitiveness in the financial sector thus allow competition and reputation to work and trust to build. The numerous public regulations of banking activities that aim at eliminating or controlling problems such as excessive market power, the presence of barriers to entry into the credit market, and the imposition of high transaction costs must thus be considered along with the MiFID as tools to support effective client–adviser relationships.

The investment-preference information revealed by clients on MiFID-compliant questionnaires may also influence the adviser–client relationship; in fact, clients could provide strategic answers to the questionnaire that neutralize commercial pressure. By providing false information about their investment preferences, customers can strategically manipulate their profile such that the financial institution will no longer offer even entire categories of financial products. This is what we call the strategic reaction of clients and it represents one of two distortive effects induced by the MiFID, the other being that financial institutions may change the weights attached to MiFID-compliant questions so that more of their clients fall into the category of near-expert, risk tolerant, and financially literate consumers, enabling them to sell more financial products and claim a larger share of the market.

Both of these reactions represent negative deviations from what was envisioned by the European Commission when it developed the MiFID; either one has the potential to worsen the existing credit crunch.

## **4.** **A SURVEY OF BANK CUSTOMERS**

### **4.1** **Introduction**

We sought to investigate how retail bank customers understand salient information on financial investment in order to enhance the information accessibility of future MiFID-compliant questionnaires.

### **4.2** **Method**

We interviewed 73 subjects who were customers of two Italian retail banks in and around Trento, Italy; respondents were 68.5% (50) male and 31.5% (23) female. Their average age was 54.7 years and only 10 had completed tertiary-level education.<sup>8</sup> Questions were targeted to address similar topics to those focused on by current MiFID-compliant questionnaires, in particular

- financial expertise;
- investment product knowledge;
- obstacles to and opportunities for better understanding investments;
- the risk–fear relationship.

We present summary statistics for responses to the survey questions in the following section.

<sup>8</sup> That is, 13.7%; OECD data reveal that in Italy in 2011 the rate of people between the ages of 25 and 64 with a tertiary degree was about 15%.

## 4.3 Results

### 4.3.1 Financial expertise

The first two questions were intended to assess to what extent customers feel they are experts on financial issues and to what extent they consider an ordinary layperson to be an expert on the same topics. Thus the first question asked for a self-assessment of financial expertise: “How do you rate your expertise in financial matters?” and the second for an assessment of an average person. For both questions we collected the answers on a Likert scale ranging from 1 (very little) to 5 (very much). Most questionnaire respondents (58.32%; see Table 1) assessed their financial knowledge as being poor, a fact consistent with the extensive research on financial literacy (Lusardi & Mitchell 2007, 2011). In contrast to answers on a typical MiFID-compliant questionnaire, a characteristic of the answers in the present survey was the absence of any strategic effect on their relationship with the bank. The subjects were aware that their answers would be used just for research purposes.

*Table 1*

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#### *Self-Assessment of Financial Expertise*

Following Lusardi 2007, we tried to improve on a pure self-assessment approach by seeking more objective information. We asked subjects to illustrate, even with simple terms, the meaning of the following financial and statistical concepts: risk premium, zero-coupon bonds, futures, and standard deviation. Only 8% of respondents provided answers that could be considered close to the correct definition, which is consistent with the respondents’ self-assessed low expertise in finance.

When we considered the respondents’ projections of financial knowledge onto a hypothetical layperson, an even more negative perspective was revealed. More than 70% of respondents assumed a layperson would have insufficient financial knowledge (Table 2); nearly 28% assumed sufficient or better knowledge.

<b>Level of expertise</b>	<b>Percentage of respondents</b>
1 Very little	15.27
2 Little	43.05
3 Enough	34.72
4 A lot	5.55
5 Very much	1.30

*Table 2*

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*Assessment of Others' Financial Expertise*

Overall, respondents considered the average person to be lacking in financial proficiency. Only 26 respondents (35.6%) evaluated themselves as more expert than the average person; 18 (24.7%) indicated that they were less expert in finance than the average person.

<b>Level of expertise</b>	<b>Percentage of respondents</b>
1 Very little	12.50
2 Little	59.72
3 Enough	18.05
4 A lot	9.72
5 Very much	0

#### 4.3.2

#### Understanding financial products

Three questions were directed at exploring the respondents' beliefs on what they required to understand financial products. Specifically, we asked

1. "What are the most important elements of a financial product that need to be explained to you for you to have good comprehension of that product?"
2. "What are the most important elements of a financial product that need to be explained to somebody else?"
3. "What strategies could be used to make the client–adviser communication more effective in terms of the client's understanding of financial matters?"

The answers to Questions 1 and 2 are presented in Table 3. Only the first element mentioned by the respondents is reported.

Table 3

*Important Elements of a Financial Product*

Element	Most important for self (percentage of respondents)	Most important for others (percentage of respondents)
Return	28.8	24.3
Risk	20.8	31.4
Duration	20.3	12.9
Liquidity	8	–
Safety <sup>a</sup>	6.4	–
Type of investment	4.8	11.4
Personal information	–	8.6

<sup>a</sup> Respondents mentioned safety as a general feature of investments separate from risk, but they were not able to explicitly report the meaning of the two features or to identify the differences between them.

In all, respondents provided 193 important elements and strategies. Many of these (e.g., return, risk) were provided in chains of items that we call “strings” of basic information needs. This classification is important, because it implicitly reveals a sort of minimum amount of knowledge necessary to make an investment. These strings consisted of the elements of financial products identified above (e.g., return, risk, etc.). This aspect is very important because it implicitly reveals that just a small subset of individuals (22%) were able to collect the strings of basic information necessary to have at least a preliminary understanding of the type of investments they were making. Only 4.8% of respondents suggested that they could gain a better understanding by inquiring about the type of investment, implicitly acknowledging that the investment’s category does not provide sufficient information about its features. The remaining individuals revealed that they face difficulties in identifying a specific pattern of features that would help them understand the investment they are making (e.g., information about the issuer, safety).

The data clearly suggest that respondents believed that the uncertainty and riskiness of an investment are closely related to a potential investor’s ability to forecast its interest rate; this is why it is common for naïve investors to consider fixed rate bonds as the safest investments available—they are predictable in the interest they bear and in most of their understandable features. In this case the predictability of the behavior of the investment is considered proof of safety; other important aspects that have a real impact on safety, such as the reliability of the issuer, the duration, and portfolio diversification, are ignored, largely because these aspects remain invisible to naïve (financially illiterate) investors.

Interestingly, when the same question was asked from a different perspective—that is, when respondents were asked to consider the same question from the point of view of another, essentially changing roles from decision makers to financial advisers, they chose a different set of important elements (see Table 3). In this scenario risk became most important (31.4%), followed by the return on the investment (24%). Investment duration (13%) was much less relevant than when respondents answered for themselves, and other elements—such as investment type (11.4%)—received more attention. Even when respondents did not seem to be aware of what risk meant, when asked to explain an investment to someone else they first mentioned risk as the most stressful feature.

Finally, when respondents were asked to identify strategies that could improve communication about financial products, the largest majority asked for clearer explanations that were based on simple common words and avoided technical terms, English words, and acronyms (see Table 4; only the first strategy mentioned by the respondents is reported). Some respondents (i.e., those grouped in “other answers”) were not able to suggest any improvements because they saw themselves as unaware of better options, and others asked for more technical information about products.

*Table 4*

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*Important Communication Strategies*

<b>Strategy</b>	<b>Percentage of respondents</b>
Simpler words, no English, no acronyms	60.6
More technical information	15.5
It is perfect as it is	11.3
Other answers	12.7

The elements mentioned above are those identified as crucial for understanding an investment, but some questions remain open. First, it is not clear if bank customers really understand their own investment portfolios; when they do, it is unclear how, exactly, they read its past performance and form expectations for its future. Second, the data revealed that the elements deemed essential for understanding financial products were those that are economically most complex and therefore hardest to understand, making the overall comprehension process difficult.

To address these unanswered questions we first asked the subjects to report their degree of understanding of their investment portfolio on a Likert scale of 1 (*not at all*) to 11 (*fully understand*). The results are rather positive, with an average value of 9.3%. But again, we have to point out that the comments collected during the survey revealed limited investment experience (the subjects chose mainly bonds and basic financial products and invariably stuck to them). In this case it appears that customers selected simple investments because they had a simple understanding of finance, but they could still say they have a quite good understanding of their “simple” portfolio. The data revealed the close relation of poor financial literacy (of average investors), simple portfolio selection, and the perceived good understanding of their simple investments. This makes it very difficult for financial advisers to talk about, for instance, portfolio diversification and risk management, two of the more complex concepts.

We then asked three questions about difficulties in understanding investments, specifically (1) the biggest difficulties in understanding investments, (2) the difficulties faced when selecting the right investment, and (3) what elements could help improve a client’s understanding of investments. The results are summarized in Table 5.

Table 5

*What Makes an Investment Difficult to Understand?*

<b>Element</b>	<b>Biggest difficulties in understanding (percentage of respondents)</b>	<b>Difficulties when selecting investments (percentage of respondents)</b>	<b>Would improve understanding (percentage of respondents)</b>
None	34.7	47.2	36.6
Technical issues	27.8	31.9	31.0
English and technical terms	20.8	2.8	15.5
Relevant macroeconomic variables	11.1	4.2	7.0
Other answers	5.6	13.9	9.9

The results show that a large percentage of clients were not capable of identifying what is difficult to understand in the choice of an investment. This reveals the nature of the meta-knowledge respondents had about their understanding process. They were aware of not being comfortable with understanding and choosing financial products but they could not enumerate or better describe the concepts with which they were not familiar. As one individual told us, “How can I tell you what I did not understand and that I can’t even remember?”

Third, the things that made it difficult to understand investment products, such as English terms and technical words, were not considered difficulties in decision making and investment selection. A large proportion of subjects recognized that technical information about a financial product is difficult to understand but useful in decision making, and they wanted more such information to improve their understanding. It is interesting to note that among the subjects who listed other elements for Question 2 (i.e., in the category “other answers”), a few mentioned relying mainly on instinct to make investment choices, bypassing the difficulties in understanding.



### 4.3.3

#### Risk and fear: Gut feeling and rationality

We investigated how consumers perceive risk by asking two questions: (1) Is there a relationship between risk and fear; and (2) what images or words does your adviser commonly use to communicate the risks of investments. The results are presented in Table 6.

*Table 6*

*Perception of Risk*

<b>What relationship do you think exists between risk and fear?</b>		<b>What words and images are used by your adviser to communicate risk?</b>	
Relationship	Percentage of respondents	Words and images	Percentage of respondents
Risk determines fear	41.7	Simple concepts and metaphors	28.8
They are related, somehow	31.9	Precise measures (percentages, ratings, etc.)	21.9
They are not related	25.0	Negative concepts (e.g., loss of capital and savings)	19.2
Other answers	1.4	Other answers	30.1

For a large majority (73.6%), risk and fear were related. Respondents recognized that risk has a significant impact on their emotions and well-being over the duration of the investment. The respondents' perceptions and comprehension of risk were inconsistent with the expectations of neoclassical economic models on rational economic agents. Several respondents recognized that the link they implicitly made between risk and fear depends on the potential losses and, even if risk can be measured "somehow" a priori, fear is idiosyncratic and much more difficult to quantify. The respondents who did not recognize a relationship between risk and fear (25%) usually explained their answer by saying that if risk is consciously taken because of personal preferences, then it should not generate fear.

Furthermore, the data make it clear that wise advisers are aware of how their customers perceive and represent risk and therefore use several different means to communicate risk, which was seen as either positive (i.e., they tailor communication to the client) or negative (i.e., they do not know how to effectively communicate risk). It is interesting to note that a substantial proportion of advisers (19.2%) reportedly used only negative concepts to describe risk (e.g., by

describing risk in term of loss of lifetime savings). Additionally, the category “other answers” includes respondents who refused any risky investment and thus believed that their advisers have never disclosed the level of risk.

#### 4.3.4 Choosing an investment

We investigated the determinants of investment choice with an extensive set of questions, including one on the elements of financial products that guide investment choices. Risk was the most common determinant (55.6%), followed by return on investment (20.8%) and duration (13.9%). It is interesting to note how the answers obtained are different from those to the similar questions presented above. The subjects were asked to identify the elements that influenced their decision-making process, whereas in previous questions they were asked to reason about their understanding and selection of investments for their personal needs. We also asked the subjects to evaluate their awareness level of the reasons they chose specific investments, and the result was quite positive, that is, a mean of 9.4 on a Likert scale of 1 (*absolutely not aware*) to 11 (*fully aware*).

Respondents were less confident in their ability to communicate to others (e.g., advisers, peers, family, etc.) why they made specific investment decisions, showing a mean confidence level of 8.6 on a Likert scale of 1 (*not confident at all*) to 11 (*fully confident*), acknowledging a difficulty in explaining their actions. Finally, 12.5% of subjects thought they were aware of the main triggers that drive their investment decisions but they were not able to verbalize them; this information remains as implicit knowledge.

#### 4.3.5 The adviser

Last, we investigated the client–adviser relationship. In particular we asked our subjects what exactly their adviser did for them, what they would like the adviser to do, and what their reasons were for delegating investment choices. The results are presented in Table 7.

Table 7

*The Client–Adviser Relationship*

<b>What does your adviser do for you?</b>	<b>Percentage of respondents</b>	<b>What additional help would you like from your adviser?</b>	<b>Percentage of respondents</b>	<b>Why do you delegate choices to your adviser?</b>	<b>Percentage of respondents</b>
I get suggestions and help; I trust my adviser and feel protected	43.8	Nothing; everything is fine	39.7	The adviser knows financial markets better	41.7
I get technical information	38.4	Follow-up, continuous monitoring and updates	34.2	I accept only suggestions; I do not delegate	31.9
I do it myself; my adviser does not help me	11.0	More technical information	12.3	I trust my adviser as a human being, also in areas other than finance	19.4
Other answers	6.8	Avoid using English and technical terms	4.1	I do not have time for investment choices	4.2
		Other answers	9.6	Other answers	2.8

Both human and technical aspects were very much appreciated in a client–adviser relationship. The answers to the second question show that most complaints and suggestions concerned a lack of continuous monitoring and updates about past investments (34%). It seems that the clients felt abandoned after the investment was chosen, and they wished the adviser would keep them posted on changes in the portfolio over time.

A substantial proportion of respondents (42%) delegated their decisions to an adviser because the adviser was an expert with considerably more knowledgeable of financial markets. Further reasons pertained to the adviser being a trustworthy person beyond financial issues (19%) and to the clients having no time to search for the information necessary for decision making.

Moreover, it is worth adding that not all advisers allowed their clients to delegate decisions: When respondents were asked how much they delegated, the average result was 6.8 on a Likert scale of 1 (no delegation at all) to 11 (full delegation). Nevertheless, the clients were mostly satisfied with the level of delegation that was offered, with a mean of 8.2 on a scale of 1 (not satisfied at all) to 11 (fully satisfied); they understood why the adviser made specific choices on their behalf (on average a value of 8 on an increasing scale of comprehension of 1 to 11). Furthermore, they did not believe that the adviser had exploited their trust by making inappropriate choices, with an average value of 2.5 on a Likert scale of 1 (no exploitation) to 11 (full opportunistic behavior). In conclusion, clients expressed a high level of trust of their

advisers, with an average value of 9.1 when asked how much they trusted the adviser on a Likert scale of 1 (not at all) to 11 (completely).

## **5. DISCUSSION**

### **5.1 From MiFID to MiFIR: New regulatory enhancements**

Our evaluation of MiFID-compliant questionnaires has revealed several limitations of the MiFID:

- non-identification of the decision-making unit;
- measurements of static risk tolerance instead of dynamic;
- lack of preference coherence analysis;
- lack of evaluation of risk tolerance measurement robustness;
- poor guidance in pairing financial needs and investments.

These deficiencies strongly impact the client–adviser relationship in two ways. First, there are too many unnecessary obstacles to communication between parties, and second, measurement errors lead advisers to draw an inaccurate picture of their clients’ needs. Such frictions in client–adviser relationships can diminish the client’s trust, creating further obstacles to communication between parties. Future questionnaires should address these points. Revisions to the MiFID<sup>9</sup> are now underway.

In particular, identifying the decision-making unit should be addressed in a specific section in the questionnaires where individual data are collected along with data concerning the procedures by which multi-individual units come to a decision. Risk tolerance measurements should be done along different investment horizons and should take into account the occurrence of different events in the client’s life (e.g., marriage, birth of children, retirement). This will provide a more complete and dynamic picture of the client’s risk tolerance. Similarly, risk tolerance measurements based on questions eliciting the client’s preference for present and future investments should be enriched by as much past data as possible. Moreover, as access to historical investment data cannot be taken for granted, due to the lack of complete datasets and

<sup>9</sup> Following the global financial crisis, the European Commission decided to review the MiFID framework. On October 20, 2011, the Commission adopted proposals for (1) a revised directive and (2) a new regulation, the MiFIR.

privacy issues, the questionnaires should ask the client to describe past investment choices and their reasons in order to provide the adviser with a dynamic picture of the client's preferences and the opportunity to identify weak spots in the client's preference coherence that can be more effectively investigated and better understood with face-to-face interaction.

The questionnaires should be developed to add questions and synthetic measures capable of informing the adviser of the reliability of the data collected, in particular, data related to risk tolerance. Such measures, which are common practice in psychometrics, also call for cross-cultural adjustments and validation. In other words, and as much empirical literature in social psychology has pointed out, to obtain comparable results with a questionnaire applied to samples living in different cultures (e.g., countries, regions, etc.), the questionnaire has to be fine tuned and validated (for an example of the kinds of requirements and results of validation on a global scale of the Big Five Questionnaire, see Schmitt, Allik, McCrae, & Benet-Martínez, 2007).

Finally, the parts of the questionnaires that aim at measuring risk tolerance and preference should be adapted to fit the client's priorities. In other words, the questionnaire should support the adviser in measuring risk tolerance and preferences individually for each of the client's stated goals (e.g., short-term or long-term gain). In this way it will become possible to modulate the advice according to the concurrent objectives of the client and over time, guaranteeing a trustful and long-lasting relationship.

We would like to stress the role that recent behavioral studies could play in the design of new and more effective questionnaires. Behavioral studies in finance and organization science can help policy makers identify and frame the problems of today's client–adviser relationship, as we have done throughout this work. They could also inform the design of new more effective tools. For instance, more theoretical works such as that of Das, Markowitz, Scheid, and Statman (2010) could help us focus on realistic decision making by considering processes such as mental accounting, and empirical contributions such as those of Carpenter and Yoon (2012), Christelis, Jappelli, and Padula (2010), Korniotis and Kumar (2011), Mohr and Heekeren (2012), among others, give us very useful insights into what data is relevant to collect to support investment decisions of people—regardless of their financial literacy, risk tolerance, and stage of life.

## 5.2 Conclusions

The MiFID introduced a significant innovation in the financial industry when it was presented by the European Commission. In theory, the MiFID would protect investors by requiring financial institutions to assess whether their clients had sufficient knowledge and cognitive capacity to make informed decisions on their investments and could demonstrate a clear comprehension of the associated risks.

Yet in practice, because the MifiD did not require financial institutions to adopt a specific questionnaire, each firm has had to design its own, resulting in a plethora of heterogeneous questionnaires. Although heterogeneity in phrasing and design may not be a problem in itself, the

result is that there is inadequate assessment of customers' investment preferences. Vague language, technical wording, and inappropriate visual aids all contribute to making the answers difficult to interpret and this has led to imprecise and inconsistent classification of customers.

Strategic reactions were observed in both customers and advisers, the former providing answers that might manipulate their profile and influence the products they were offered, and the latter assigning "tailored" weights to erroneously classify clients to make certain products a better fit.

Revisions of the MiFID should take into account its partial failure in the aspect of questionnaire design. The Directive should include the development of a cognitively suitable template that can be used to develop questionnaires that adequately capture consumers' knowledge and preferences and can be used to create a deeper and more synergic relationship between advisers and their clients. It is possible to couple investor protection with a more advanced approach to profiling the customers' investment preferences.

The current MiFID guidelines follows neoclassical economic models that do not integrate behavioral and cognitive aspects, which are at the core of real decision-making processes. Collecting information on abstract concepts such as risk, investment duration, and economic objectives does not allow customers to reveal their human side, and therefore, their limited rationality and ability to deal with risk and with decisions that affect their lives in the long term.

We find that due to framing and literacy effects, as well as a lack of consistency in profiling, the MiFID may achieve its objective of optimizing consumer finance for only some consumers and not others (who have been incorrectly profiled due to misinterpretation or misunderstanding of information). Thus it is imperative that MIFID implementers test the effects of proposed future questionnaires on various groups of consumers before implementation and assess the risk of unintended consequences for particular customer segments. At the same time institutions must think beyond the questionnaire—the data obtained are just a prerequisite for reaching the main goal, which is to offer appropriate products to each client. The financial institutions must match the presentation of the products they offer to the data received from the clients. Advisers should understand how personal and idiosyncratic factors such as gender, age, financial education, and cultural background are relevant to perception of investment risk.

In conclusion, we expect that future versions of the MiFID will focus more on aspects related to cognition and decision-making processes. This would require a new empirically based approach to help legislators develop more comprehensible and clear questionnaires that capture consumers' real needs and abilities. Modern medicine is facing similar dilemmas when asking patients to provide informed consent, and it could be fruitful to develop an interdisciplinary research program on risk communication and comprehension and assessment techniques. Only through accurate and concrete support will the average investor achieve better knowledge of financial issues and be able to make conscious investment decisions.

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VELD C., VELD-MERKOULOVA Y. V., “The Risk Perceptions of Individual Investors”, in *Journal of Economic Psychology*, vol. 29, n. 2, 2008.

**CAREFIN**  
Centre for Applied Research in Finance  
Università Bocconi  
via Röntgen 1  
I-20136 Milano  
tel. +39 025836.5908/07/06  
fax +39 025836.5921  
carefin@unibocconi.it  
www.carefin.unibocconi.it