Consumer Decision-Making in Retail Investment Services: A Behavioural Economics Perspective

Final Report

November 2010

Overall co-ordination

Decision Technology Ltd

Academic Participants

Nick Chater	Professor of Behavioural Science, Warwick Business School and co-founder, Decision Technology
Steffen Huck	Professor of Economics and Head of Department, University College London
Roman Inderst	Professor of Finance and Economics, Johann Wolfgang Goethe Universität Frankfurt

Commercial Participants

Online Interactive Research Ltd

Contents

EXECUTIVE SUMMARY

1 Introduction

1. The EU Consumer Policy Strategy 2007-2013 underlines the importance of empowering consumers, as a key driver of innovation, competition and productivity. However, there is evidence that consumers often fail to make optimal choices and not only because of asymmetric information. Even well-informed and numerate consumers may exhibit systematic departures from welfare-maximising behaviour. This evidence reflects one of the main tenets of Behavioural Economics (BE): the *homo economicus* of classical economic theory is an over-simplified description of human behaviour. Consumers are not always selfish, rational and independent agents but instead they exhibit a strong interdependency and limited or "bounded" rationality.

2. According to the fourth Consumer Markets Scoreboard, retail financial services are one of the sectors characterised by substantial market malfunctioning.[1] In particular, the 2010 Scoreboard shows that the market for "investments, pensions and securities" ranks worst out of fifty consumer markets for overall market performance; worst for ease of comparing products and services sold by different suppliers; worst in trust that suppliers will respect consumer protection rules; fourth worst in experiencing problems; and worst for overall satisfaction. The financial environment has evolved so much that consumers are often ill-prepared to make sound decisions about increasingly complex retail financial products. The inability to benefit fully from this market is in part due to limited financial literacy or asymmetric information, but it may also be directly related to instincts driving consumers towards choices which are inconsistent with their long-term preferences. Recent evidence shows that consumers often have limited time to fully understand complex retail financial products. "Herding" instincts and over-reliance on experts' advice may also limit rational reflection.

3. The purpose of this project was to study the decision-making processes of consumers in the market for Retail Investment Services (RIS). The objectives of the study were twofold: to obtain survey and experimental evidence regarding both the individual behavioural traits and the external factors most influencing consumers' decision-making

[1] SEC(2010)1257 "The Consumer Markets Scoreboard" 4th Edition – October 2010

in RIS; and to explore the effectiveness of different policy remedies in helping consumers make better decisions.

2 Structure of Report

4. This report is divided into two main parts, corresponding to the two phases of research involved in the project: review (first phase) and experiments (second phase). The first phase had four components: a review of the BE literature; a review of the retail investment market; a consumer survey of the retail investment purchase process; and an assessment of policy options. The second phase consisted of three experiments that investigated specific aspects of retail investors' decision-making processes and the impact of potential policy interventions. Each chapter reports the findings and conclusions of the following component of the research:

Chapter I: provides an overview of the project and a summary of the main findings and conclusions.

Chapter II: surveys the literature from fields such as BE and Psychology, to review the available evidence on consumer decision-making in retail finance and to highlight the "behavioural biases" most likely to lead to consumer detriment in these markets.

Chapter III: describes the structure of the retail investment market in twelve different EU Member States and briefly analyses a small sample of retail investment marketing material from across the EU.

Chapter IV: reports the findings of an online survey of 6,000 consumers in eight EU Member States, concerning the process of researching, choosing and purchasing a retail investment product.

Chapter V: summarises the available evidence on consumer decision-making in the retail investment market; describes the current regulatory regime and the range of available policy options; and prioritises decision-making biases and potential remedies for experimental testing.

Chapter VI: reports the findings of an online experiment with 6,000 subjects in eight EU Member States, exploring people's decision-making capabilities in

simple unadvised investment choices and the impact of a range of policy interventions on decision quality.

Chapter VII: reports the findings of a second online experiment with 6,000 subjects in eight EU Member States, exploring people's response to the disclosure of conflicts of interest in stylised advised investment choices and their willingness to pay up-front fees for information and advice.

Chapter VIII: reports the findings of a laboratory experiment with 480 subjects in three EU Member States, exploring the impact of direct communication between advisor and advisee upon the efficacy of disclosing conflicts of interest and upon the trust people place in advice.

Chapter IX: summarises the experimental findings and assesses the implications for policy makers, as well as suggesting future directions for further empirical experimental research to support policy decisions.

3 Summary of Review Findings

5. Our review of the existing literature on BE focuses particularly on issues relevant to the European (as distinct from the US) investment market. In addition to the familiar behavioural biases that we identify as potentially relevant in the retail investment market, a distinctive feature of this review is that it identifies the importance of a range of cognitive and social biases that play a role in consumer investment decisions when assisted by an advisor or salesperson. For example, we place considerable emphasis on processes of persuasion, the importance of personal interaction, and the role of trust. Some of the key findings of the review are:

    - **A growing body of evidence shows that the "standard" model of a rational self-interested economic agent does not adequately describe human decision-making.** The formation of beliefs is based on the perception of circumstances, so it can be context-dependent and subject to framing effects or biases such as overconfidence. Preferences may be reference-dependent and inter-temporal preferences can be subject to biases such as short-sightedness or procrastination. Cognitive limitations

can lead to a reliance on heuristics, and people are often averse to ambiguity as well as uncertainty.

- **Features of the retail investment market may make consumer decisions particularly prone to biases and errors.** Evidence suggests that many people - especially the younger and less educated - do not possess a sufficient level of financial knowledge and understanding, while evidence on the success of financial literacy programmes is limited. Retail investment products are inherently risky and often involve long time horizons. The market is characterised by a wide array of products with complex pricing structures. Consumers do little searching and instead typically rely on the advice of a professional advisor or salesperson.

- **Consumers' reliance on advice makes issues of trust and persuasion of key importance in the retail investment market.** Generalised trust, trust in advice and trust in consumer rights can all influence people's willingness to hold risky assets. Personal interactions may enable an advisor to persuade or influence an advisee, for example by inducing positive emotions, and some consumers may be particularly compliant in the presence of perceived expertise. Disclosing conflicts of interest may undermine trust in advice and give advisors "moral licence" to act only in their own self-interest.

6. Our review of the retail investment market in the EU draws together publically-available data and existing comparative studies in order to provide an overview of retail investors' behaviour across twelve EU Member States. In particular, where data is available, we describe for each country what kind of assets investors choose to allocate their savings to, and through which retail channels those investments are typically purchased. While there are some commonalities across the countries we survey - such as pension wealth forming a large part of households' total wealth or the relatively low share of wealth held in risky equity investments - there are also large differences between countries in overall saving and borrowing rates, as well as in the composition of households' financial portfolios. A small sample of retail investment marketing materials from eight countries was analysed in terms of its content, suggesting that such

material primarily reminds consumers of the need to invest and attempts to convey expertise, rather than communicating specific detailed information about risks, returns and costs. We find no strong evidence for a prevalence of misleading claims or use of framing effects relative to other product markets.

7. Our online survey of 6,000 consumers in eight EU Member States describes the decision-making process followed by recent purchasers of retail investments, as well as exploring the main differences between purchasers and non-purchasers of retail investment products. Some of the key findings of the survey are:

    - **Consumers are often confused about the true nature of their investment.** In particular, investors, especially purchasers of pensions and structured products, are often uncertain whether or not they are exposed to the risks of stocks and shares. Nearly 40% of investors in stocks and shares (wrongly) believe their initial investment is protected.

    - **Although investments are usually triggered by a change of life circumstances and not marketing, information search is very limited.** Only around 33% of investors compare investments from more than one provider or consider more than one product from a single provider. Just 27% of investors shop around to get the best deal.

    - **Advice is ubiquitous in the retail investment market.** Nearly 80% of investments are made in a face-to-face setting, usually with an employee of the investment provider or a professional advisor. 58% of investors say their final choice of product was influenced by an advisor, while the advisor initiated the purchase on a quarter of occasions.

    - **Trust in advisors is high, but consumers are often unaware of potential conflicts of interest.** The majority of investors mostly or completely trust the advice they receive, and do not perceive their advisor to be biased. Conflicts of interest are often only verbally disclosed, if at all, and most investors disregard the information or do not think about it.

8. In light of all the above findings, and after considering the current EU regulatory regime as well as options for policy interventions, the following issues were chosen as priorities to be addressed in the experimental phase of the research:

    1. How capable are consumers of making appropriate choices between investment products in the absence of advice? To what degree are their choices influenced by "behavioural biases"? To what extent can policy interventions improve the quality of retail investment decisions?

    2. Do consumers respond appropriately to the disclosure of conflicts of interest? Does the format of disclosure matter and which is most effective? Does disclosure of conflicts of interest undermine trust in advice? Would consumers be willing to pay an up-front fee for advice?

    3. How does direct interaction between advisors and advisees influence investors' decision-making? Can free communication enable advisors to persuade or pressure advisees to make certain choices?

4 Summary of Experiment Findings

9. Our first experiment was conducted online with 6,000 subjects in eight EU Member States. It addressed questions related to cognitive and behavioural factors in non-advised retail investment decisions. Some of the key findings are:

    - **People struggle to make optimal investment choices, even in very simplified investment tasks.** Only 56% of funds were invested optimally, with 25% of investment decisions being completely optimal and only 1.4% of subjects making all five investment choices optimally. Older, female, less educated and less numerate subjects made worse decisions.

    - **Investment decisions are prone to biases and framing effects.** Subjects made worse investment decisions when the optimal choice was harder to understand (fees framed as percentages, annual returns not compounded over the duration of the investment), and they were disproportionately averse to uncertainty (risky investments), ambiguity (incomplete information) and product complexity (structured products).

- **Simplifying and standardising product information can significantly improve investment decisions.** Standardising and reducing the amount of information provided helped subjects identify the optimal choice between similar investments. Providing comparable pre-calculated information on the net expected value of each investment helped subjects identify the optimal choice between dissimilar investments.

10. Our second experiment was also conducted online with 6,000 subjects in eight EU Member States. It addressed questions related to cognitive and behavioural factors in advised retail investment decisions. Our third and final experiment was conducted in the laboratory with 480 subjects in three EU Member states, and addressed questions related to social and behavioural factors in advised retail investment decisions. Both experiments addressed the issue of disclosing conflicts of interest, in different formats and in different settings. Some of the key findings are:

    - **The impact of disclosing conflicts of interest is context-dependent.** Online subjects hardly responded at all to disclosure. Only those subjects who took more time over the decision reacted appropriately and even then only when the disclosure was flagged in a bold red font, for the simplest of decisions. In contrast, laboratory subjects exhibited a strong reaction to the disclosure of biased incentives, showing evident mistrust of advice.

    - **Full and transparent disclosure or a "health warning" may be necessary for people to understand the implications of a conflict of interest.** Online subjects, who were only told that their advisor was paid a commission, did not react to this disclosure unless it was accompanied by a "health warning". Laboratory subjects who were told the exact details of their advisor's remuneration structure responded to disclosure without such a warning.

    - **Disclosing conflicts of interest elicits a "knee-jerk" reaction that can be harmful as well as helpful.** Subjects exhibited "contrarian" behaviour in their investment choices when biased incentives were disclosed. This led to better decisions when the advisor's and advisee's interests were adversely aligned but worse decisions when their interests were aligned.

Subjects lost trust even when an advisor with misaligned incentives was not actually able to deceive them, showing that their reaction is reflexive.

- **Direct interaction enables advisors to exert (limited) additional influence on advisees.** Free communication between advisor and advisee tended to mitigate the "knee-jerk" loss of trust resulting from disclosure of a conflict of interest. There is evidence that free communication enables advisors to exploit advisees' existing biases but not to "de-bias" them.

- **A significant minority of people may be disproportionately averse to paying an up-front fee for advice.** Between twenty and thirty percent of the online subjects displayed evidence of "narrow framing" and loss aversion making them excessively averse to an up-front fee. There was no strong socio-demographic or attitudinal signature for this group of people.

5 Conclusions and Recommendations

11. The findings of our experimental research shed light on retail investment decision-making and provide a detailed insight into the factors influencing consumer behaviour in this market, as well as the relative impact of some of the policy remedies available. Arguably, experimental evidence alone cannot justify regulatory interventions in a market, as a clear market failure must be identified with empirical real-world evidence. Furthermore, any proposed policy action to correct a market failure should ideally undergo further testing in more realistic (although less controlled) settings in order to assess the likely real-world impact and to determine the best way in which to implement the details of the policy. Greater use of such testing would improve the design of policy initiatives, given that the research shows that small practical details can have a significant effect on consumers. Nonetheless, our findings do point towards certain future directions for policy making and for policy research:

    1. Simplification and standardisation of product information enables consumers to make better quality investment decisions, at least in our simple choice tasks. Providing pre-calculated and directly comparable relevant information about investments enables better choices between dissimilar options, e.g. across product classes. These principles and ideas

could be applied to current and future work on information disclosure, such as the Key Investor Information (KII) document.

2. If disclosure of conflicts of interest, such as commission payments to advisors, is mandated then further testing should be conducted to determine the best form and format for disclosure. Our findings point to the need for either full disclosure or an accompanying health warning to ensure the implications of disclosure are understood. Policy makers must also be careful not to simply elicit a "knee-jerk" loss of trust in advice that may not be in consumers' best interest, especially given their limited capacity to make good decisions without the help of an advisor.

CHAPTER I

PROJECT OVERVIEW AND REPORT SUMMARY

Retail Investment Services: Project Overview and Report Summary

1 Background

1.1 Project Motivation and Objectives

12. The EU Consumer Policy Strategy 2007-2013 underlines the importance of empowering consumers, as a key driver of innovation, competition and productivity. Efficient market outcomes are not only the result of a competitive supply-side structure, but are also dependent on an informed and rational demand-side, one that rewards the most efficient operators in terms of price and quality. Indeed, even competitive markets may malfunction if consumers are unable to make optimal choices. However, there is increasing evidence that consumers not only fail to make choices according to their long-term preferences because of asymmetric information but also that well-informed and numerate consumers exhibit systematic departures from welfare-maximising behaviour. The main tenet of Behavioural Economics (BE) is that the *homo economicus* of classical economic theory is an over-simplified description of human behaviour. Consumers are not always selfish, rational and independent agents but instead they exhibit a strong interdependency and limited or "bounded" rationality.

13. From a policy perspective it is essential to identify both the individual and the external factors affecting consumers' decision-making. Where poor decisions are made as a result of lack of knowledge or information, then conventional educational campaigns, pre-contractual information and suitable advice could constitute an appropriate remedy. Where consumers' decision-making reflects certain behavioural "biases" (such as default bias, present bias, loss aversion, overconfidence, etc.), these aspects should also be taken into account when designing policy.

14. According to the fourth Consumer Markets Scoreboard, retail financial services are one of the sectors characterised by substantial market malfunctioning.[2] In particular, the 2010 Scoreboard shows that the market for “investments, pensions and securities” ranks worst out of fifty consumer markets for overall market performance; worst for ease of comparing products and services sold by different suppliers; worst in trust that suppliers will respect consumer protection rules; fourth worst in experiencing problems; and

[2] SEC(2010)1257 “The Consumer Markets Scoreboard” 4th Edition – October 2010

worst for overall satisfaction. The financial environment has evolved so much that consumers are often ill-prepared to make sound decisions about increasingly complex retail financial products. The inability to benefit fully from this market is in part due to limited financial literacy or asymmetric information, but it may also be directly related to instincts driving consumers towards choices which are inconsistent with their long-term preferences. In addition, there may be an incompatibility between the incentives of some retail financial service providers and the interests of consumers. Recent evidence shows that consumers often have limited time to fully understand complex retail financial products. "Herding" instincts and over-reliance on experts' advice may also limit rational reflection. Finally, new policy developments also call for a more responsible role for retail financial services providers.

15. The purpose of this project was to study the decision-making processes of consumers in the market for Retail Investment Services (RIS). The objectives of the study were twofold: 1) to obtain survey and experimental evidence regarding both the individual behavioural traits and the external factors most influencing consumers' decision-making in RIS and 2) to explore the effectiveness of different policy remedies in helping consumers make decisions that reflect their long-term preferences. With the Communication on Packaged Retail Investment Products (PRIPs) the Commission made a commitment to take investor protection measures in two specific areas - pre-contractual disclosures and sales practices. This study contributes to the current work in these two areas.[3]

16. RIS are products offered to a retail investor who has the objectives of saving money on a medium- to long-term basis, and maximising the potential return (interest, dividend or appreciation) through a direct or indirect exposure to a variety of investment markets. Examples of retail investment products include unit-linked life insurance, Undertakings for Collective Investment in Transferable Securities (UCITS) funds, nationally regulated retail funds, exchange traded or listed funds, retail tranches of structured notes and certificates, and some specific types of bank deposits (e.g. term deposits with embedded options or derivatives, such as structured deposits).

[3] COM(2009) 204 final

1.2 Structure of Report

17. This report describes the findings of the research project "Consumer Decision-Making in Retail Investment Services: A Behavioural Economics Perspective". The report is divided into two main parts, corresponding to the two phases of research involved in the project: review (first phase) and experiments (second phase).

18. The first phase of the research - the review phase - had four components:

    A. Behavioural Economics Literature Review. An integration of cutting-edge academic research from across the economics, business, and psychology literatures, drawing out the behavioural factors which are most critical to the proper regulation of the retail investment market.

    B. Retail Investment Market Review. A review and synthesis of information concerning the retail investment markets across a representative sample of EU Member States, including financial statistics and advertising practices.

    C. Retail Investment Purchase Process Survey. A large-scale, internet-based survey across eight EU Member States, of people who have recently purchased retail investment products, to build up a quantitative picture of the key elements of the purchasing process and a comparison with non-purchasers.

    D. Policy Options and Experiment Priorities. Integrating insights from A-C, the identification of key areas of concern in the functioning of European retail investment markets from the perspective of BE, and the most important policy levers that should be explored experimentally.

19. The results of this work are outlined in the next four chapters. Chapters II, III and IV provide a detailed description of the results of the three substantive pieces of research, components A, B, and C. In Chapter V we turn to component D, concerning policy. We first consider policy options in the light of the review findings, and second describe how these policy issues shaped the experimental work conducted in the second phase of the project.

20. The second phase of the research - the experiment phase - had three components:

E. Experiment 1 – Cognitive and Behavioural Factors in Non-Advised Investment Decisions. A large-scale, internet-based, randomised controlled experiment run across eight EU Member States, exploring consumers' ability to make rational investment decisions and comparing the effectiveness of a range of policy instruments in aiding consumer investment decision-making.

F. Experiment 2 – Cognitive and Behavioural Factors in Advised Investment Decisions. A large-scale, internet-based, randomised controlled experiment using a novel methodology to provide advice from incentivised advisors to consumers across eight EU Member States, exploring consumers' ability to respond appropriately to disclosure of advisor incentives, and testing for behavioural biases in consumers' willingness to pay up-front fees for information and advice.

G. Experiment 3 – Social and Behavioural Factors in Advised Investment Decisions. A laboratory-based, randomised controlled experiment run across three EU Member States, exploring how social factors inherent in face-to-face advice situations impact upon consumers' investment decision-making, and testing some of the findings from Experiments 1 and 2 in a more controlled setting.

21. The results of this work are outlined in the second part of the report. Chapters VI, VII and VIII provide a detailed description of the results of the three pieces of experimental research, components E, F, and G. Finally, in Chapter IX we summarise the main findings from the experimental research and draw conclusions and recommendations for policy makers. In the rest of this chapter we briefly summarise the key points from each of the subsequent chapters.

22. While the research and writing of the report was a collaborative effort, primary responsibility for the chapters was allocated as follows:

Behavioural Economics Literature Review: Roman Inderst

Retail Investment Market Review: Roman Inderst

Retail Investment Purchase Process Survey: Nick Chater

Experiment 1: Steffen Huck and Nick Chater

Experiments 2 & 3: Steffen Huck and Roman Inderst

2 Summary of Review Findings

23. The goal of the first phase of research was to provide the foundations for a series of experimental behavioural economic studies addressing key issues in the European retail investment market. This series of studies was carried out in the second phase of the project.

24. This foundational work draws on the existing literature on BE, which is summarised in Chapter II, with a particular focus on issues relevant to the European (as distinct from the US) investment market. Some of the behavioural biases that we identify will be familiar, including choice and information overload; unstable or undefined preferences; heuristic decision-making; framing effects and investment menu design; procrastination and inertia; and overconfidence. But a distinctive feature of this review, motivated by the critical importance of advised sales in the European retail investment market, is the range of cognitive and social biases that play a role in consumer investment decisions, when assisted by an advisor or salesperson. This emphasis is in contrast to a good deal of the BE literature, which typically idealises the consumer as a "lone decision-maker". For example, we place considerable emphasis on processes of persuasion, the importance of personal interaction, and the role of trust (in the advisor or salesperson, as well as in the institution providing the product).

25. The next two components of the work aimed to study the functioning of the European retail investment market in greater detail. Chapter III draws together the available secondary literature from academic, governmental and commercial sources concerning the variety of retail investment products sold, and the sales processes by which such products are sold, across twelve European countries: Austria, the Czech Republic, France, Germany, Italy, Latvia, the Netherlands, Poland, Romania, Spain, Sweden, and the United Kingdom (UK). International institutions have collected aggregate information on households' financial wealth, mainly from national central banks and statistical bodies. These studies typically show substantial variations across Member States, for example in terms of type of product holding (e.g., pensions vs. cash vs. equities), and dramatic differences between savings rates (e.g., ranging from the UK's 2.2% to Germany's 16.7%). However a consistent analysis of household portfolios along with detailed product characteristics and distribution methods is lacking. We therefore asked native speakers from the respective countries to search the web in their

native languages to gather information in each country on sales practices and distribution channels. Little such information appears to be publically available - especially regarding marketing strategies and sales tactics - so we believe that assembling such information may be an important objective in future research by the Commission. In lieu of a rigorous and representative survey of such information, we have also conducted an illustrative review of RIS marketing and sales material in eight Member States, with a content analysis of the main product features and marketing messages employed by RIS providers.[4]

26. Chapter IV describes primary survey research in which we directly asked 6,000 people across eight Member States (Germany, the UK, France, Italy, Sweden, Poland, Romania and the Czech Republic) whether and how they had purchased retail investment products, using an internet survey. One result of this work was to identify four categories of purchaser: *Confused Mainstream* purchasers put a moderate amount of effort into searching for information and considering an average number of options, although they sometimes struggle to understand financial information or jargon. *Self-Sufficient* purchasers shop around more than average and are willing to consider unfamiliar providers or products. They rely on their own knowledge much more than on recommendations from friends and family. *Advice Sought* purchasers have a very in-depth purchase process, involving lots of research, advice, and shopping around. They are the most likely to only consider providers and products they are familiar with and have been recommended. In contrast, *Limited Search* purchasers do little or no searching for information and are very unlikely to obtain advice from either formal or informal sources. Moreover, purchasers of retail investment products differ from non-purchasers in a number of ways: they are typically male, older than average, have a relatively high household income, hold other financial products, have higher levels of trust in financial institutions, and have higher levels of applied financial literacy.

27. Finally, Chapter V considers the options available to policy makers to intervene in the market for retail investments in order to improve market outcomes for consumers. It

[4] As to the specific provision of advice, the Commission is conducting a mystery shopping study in parallel to this research. That study will assess whether investment advisors observe the relevant legislative requirements when providing advice and, when this does not occur, will identify the possible reasons behind recommendations of unsuitable products.

begins with a discussion of current regulations and policy in the EU that apply to the sale and provision of RIS. This is followed by a prioritisation of policy options and behavioural factors to be tested in a series of BE experiments, based upon the outcomes of the review in the previous chapters. Based upon that prioritisation, a brief description of the focus of each experiment is provided, the details of which form the second half of the report.

3 Summary of Experiment Findings

28. The goal of the second phase of research was to test some of the conclusions of the review phase in controlled randomised experiments, conducted with a large sample of consumers from a selection of Member States, and to compare the effectiveness of a range of policy options for improving the quality of consumers' investment decision-making. Each experiment focused on a different aspect of retail investment decisions, and the findings of each experiment are described in detail in Chapters VI-VIII that comprise the second part of this report.

29. Chapter VI describes the first of three experiments, which considers consumers' ability to make non-advised retail investment decisions. Experiments 1 and 2 were both carried out online and involved 6,000 consumers from eight EU Member States. Through a series of pair-wise choices between different types of investment product, Experiment 1 tested for the existence and strength of different "biases" such as uncertainty and ambiguity aversion, loss aversion, and susceptibility to framing effects. In addition, the experiment compared the effectiveness of a range of potential policy remedies, related to standardisation and simplification of information disclosure and also to "timely" interventions that might improve financial literacy or decision-making literacy. The results of Experiment 1 show that consumers struggle with even the simplest of investment choices, and are likely to make errors by acting on misperceptions about risks and returns. We find that attempts to improve investment decision-making by explaining financial terms or attempting to "de-bias" consumers have little impact, but simplifying and standardising the way in which product information is disclosed leads to a significant increase in the optimality of consumers' investment decisions. In particular, reducing the amount of information presented, or standardising the information across products, appears to help with choices between similar products. Enabling product comparisons by providing pre-calculated and standardised information

about the effective return of each product appears to somewhat mitigate potential "biases". There is considerable heterogeneity in terms of consumers' ability to make appropriate investment choices, with the youngest, the oldest, and the least educated consumers being most at risk of making poor investment choices in a non-advised choice situation.

30. The second and third experiment both consider aspects of advised retail investment decisions. Chapter VII describes Experiment 2, which explored subjects' ability to value information and advice appropriately from a potentially-biased advisor, as well as testing the effectiveness of adding "health warnings" to disclosures of advisor incentives. Furthermore, Experiment 2 looked for inconsistencies between sequences of similar investment choices that would indicate "narrow bracketing" and loss aversion, which could lead consumers to be averse to paying an up-front fee for investment advice. We find firstly that a substantial fraction of subjects consistently fails to respond appropriately when a potential conflict of interest is revealed, naïvely following the advice of a potentially-biased advisor to the same extent as an advisor with no conflict of interest. This is, however, somewhat mitigated when subjects take more time to respond to the online experiment. While providing a "strong health warning" in conjunction with the disclosed incentives does lead to an increase in consumer wariness in certain circumstances, the effect can be small - in particular where the choice setting is more complicated - and does not seem to be related to individual advisee characteristics. Overall, the results suggest that there may be circumstances when the disclosure of incentives would be insufficient to make advisees sufficiently wary of conflicts of interest, which in practice may be caused by commission payments and sales incentives. Experiment 2 also found some evidence that a significant minority of consumers may be excessively averse to up-front fees for information and advice, but this finding is inconclusive and requires further research before strong conclusions can be drawn.

31. The third and final experiment, described in Chapter VIII, considers the impact of social influences such as direct communication upon advised retail investment decisions. In particular, Experiment 3 explored the impact of "cheap talk" communication between advisor and advisee (recreating some of the tasks from Experiment 2), and whether this aspect of face-to-face interactions affects the degree to which consumers respond

appropriately to disclosed conflicts of interest. Experiment 3 also tested some of the (non-advised) decisions and potential policy remedies from Experiment 1 in an advised setting. A key finding of Experiment 3 is that in the laboratory environment (where subjects have to focus exclusively on the choice problem at hand and where a detailed description and calculation of the compensation that the advisor would get under different choices was provided), subjects react strongly to disclosure of potential conflicts of interest. In fact, in this environment advisees sometimes had a "knee-jerk" reaction to disclosed payments made to advisors, shying away from options that would earn advisors a higher payment. However, this reaction was mitigated by direct communication. Even for very simple choice - and thus investment - problems we found communication to be effective in generating a higher propensity to follow advisors' recommendations. In particular, by effective communication advisors seem to be able to use to their advantage advisees' initial perceptions of different options.

4 Summary of Conclusions and Recommendations

32. Based upon the findings of the review phase and the experiments, Chapter IX draws some conclusions and makes recommendations for promising avenues of further research for policy makers looking to improve the functioning of the RIS market for consumers. The results of the experiments presented in this report need to be interpreted with caution and some deserve further and more detailed investigation. Nonetheless, there is evidence of so-called "behavioural biases" in consumer investment decisions. The conclusions also suggest which possible policy remedies are (or are not) likely to be effective. In particular, the findings of Experiment 1 suggest that standardisation and simplification of product information disclosure could lead to significant improvements in consumer investment decision-making and help to overcome misconceptions of risk and return that lead to suboptimal decision-making. Our recommendation is therefore to pursue further research into this area, and to apply the findings to, for example, the design of Key Investor Information documents or regulating the form and content of RIS product literature.

33. Based on our own large online survey of RIS consumers and also on our literature review, we conclude that professional financial advice plays a key role in the market. The findings of Experiment 2 and Experiment 3 jointly address the issue of disclosing conflicts of interests, if and when they exist. The large online Experiment 2 suggests

that when advisees are only given a general indication of advisors' incentives - and when they are also likely to be less focused on the decision - then disclosure of potential conflicts of interest caused by advisor incentives is insufficient to elicit an appropriate response in consumers' decision-making. A large fraction of advisees then seem to fail to respond at all to disclosed incentives, unless they are accompanied by a strong and prominent "health warning" and even this was ineffective in some circumstances. In such cases, disclosure may not be adequate. In contrast, the detailed disclosure in our laboratory experiment - where subjects were arguably more focused on the task at hand - revealed that advisees may also sometimes overreact to disclosed compensation. Taken together, these findings suggest that to be effective in the right way, disclosure must be appropriately fine-tuned and possibly also tailored to the products and sales channels.

34. To address the potential policy of shifting compensation for advice more towards direct compensation - thereby regulating the way in which advisors and salespeople are remunerated, rather than relying on the consumer to respond appropriately to those conflicts of interest - Experiment 2 also investigated subjects' willingness to pay for information, finding tentative evidence that some consumers may be averse to paying up-front fees for advice. Caution must therefore be taken not to inadvertently restrict the availability of quality advice by discouraging consumers in this way. However, the previous evidence for naïvety in consumers' responses to disclosed incentives supports further moves in the direction of up-front fees or other non-commission-based advisor remuneration models.

35. Finally, Experiment 3 showed how, even for very simple investment decisions, communication between advisor and advisee - even in a very limited form - can be effective, increasing the propensity of advisees to follow recommendations. This suggests as an important next step a more detailed analysis of the various ways in which communication, possibly coupled with sales and marketing techniques, can be effective, and whether this is beneficial or harmful to customers.

36. In the following section of the report we begin by reviewing the BE literature relevant to the retail investment market, as a first step in our review of this market and consumers' retail investment decisions.

PART 1: REVIEW

CHAPTER II

BEHAVIOURAL ECONOMICS LITERATURE REVIEW

Retail Investment Services: Behavioural Economics Literature Review[5]

1 Foreword: Objectives and Organisation

37. There is much current interest in the growing academic field of Behavioural Economics (BE). This literature draws heavily on earlier and contemporaneous work in other fields, such as Psychology and Marketing. It differs from so-called mainstream economics by focusing on cases in which decisions and actions are presumed to non-marginally and consistently deviate from the predictions of what could be called the "standard decision model."[6] This standard model makes a host of presumptions about how individuals should process information and how their preferences should be organised and shaped. In a nutshell, while the decision-maker in the standard model is clearly not omniscient, he should, however, be fully aware of any limitations in the available information and should correctly (in a statistical sense) process any new information. In turn, his optimal decision should reflect its full implications for his current and future well-being ("utility"), again consciously taking into account the limitations in the decision-making process, e.g., when it is too time-consuming to deliberate all possible options.[7]

38. It is a well-known observation in social sciences - including mainstream economics - that people frequently shortcut the decision-making process by applying heuristics. This is indeed what a rational person should do when he has the opportunity in costs of time and thinking. However, such heuristics may sometimes prove to be inadequate, in particular when applied across different contexts. People may wrongly choose the first item from a list, somewhat mechanically opt for default standards, or blindly accept pre-ticked boxes. Wrong or misleading contextual factors may also compromise the quality of decisions. Decision problems can be framed to suggest a particular solution (e.g., people may tend to "opt for the middle" and thereby avoid extreme choices); a range of psychological experiments has shown that people can be "primed" by using techniques that work subconsciously.

---

[5] Primary author of this chapter: Roman Inderst

[6] That people make (small) errors is also recognised in mainstream economics (and indeed is an often-used presumption in "mainstream game theory"- e.g., for the purpose of equilibrium selection). The difference in the perspective of Behavioural Economics lies in its focus on areas of application in which such errors or other deviations from the standard decision model are presumed to be marginal or only temporary. (See Section 2.1.)

[7] In what follows, we only marginally cover the issue of "self-interested" versus "other-regarding" preferences such as fairness or spite. (See, however, Section 2.3.)

39. Psychologists have a long-standing tradition of dealing with such phenomena in all their complexity. Economists have recently contributed to the discussion by generating a host of new data in the laboratory and the field. They try to categorise the various "biases" and have started embedding such biased decision-making in more complex (model) environments. This necessitates forging links with the large body of work generated by economists on how markets function, even under various imperfections, such as limited and asymmetric information or market power.

40. Our aim in this review is to work out the implications of BE for our understanding of the market for Retail Investment Services (RIS). It could be argued that almost all of the biases that have been covered in the literature should be relevant in this area as well. For instance, customers may be misled when they are told that a particular mutual fund is "on sale" only this week (i.e., that it can be bought only now with a substantial discount on its usual fees). Customers may also react favourably to brochures that work with pictures of role models (or models in a more narrow sense). In what follows, however, we will take a much more targeted approach, focusing primarily on business practices that seem to be more prevalent in financial services than elsewhere.[8] Indeed, one of our key objectives is to work out the *particular* features of this industry - such as characteristics of customers and products - that make *particular* biases more relevant than they potentially are in other industries. This will include the riskiness of financial investments and its often long-term nature, as well as the complexity of financial products and the limited knowledge of households. Further, some investment decisions may be made very infrequently and the scope for learning may be limited. This will bring our attention also to the role of (expert) advice. [9]

41. We proceed in two steps. We first set the stage by providing a brief overview of some of the insights of BE most relevant to our work. Here, we will also discuss more broadly

[8] For instance, that firms possibly try to "obfuscate" their offerings to customers has been documented in various markets and for various such strategies. Ellison and Fisher Ellison (2004) or Hossain and Morgan (2006) provide evidence on strategies such as presenting a low headline price together with high "small print" charges for postage. Shefrin (2003) discusses obfuscation strategies practised by mutual funds (see also Section 3), and Miravete (2006) analyses "foggy pricing" in the telecoms market. More generally, several papers provide evidence of consumers failing to choose optimally from an available "menu" of offers, provided by either a single firm or by different competitors. Examples cover the markets for internet provision, electricity, credit cards or telecoms (cf. Chang et al., 2008 for a broader discussion).

[9] On the role of learning to allow consumers to correct mistakes see, more generally, Epstein (2006). (See also, however, Bar-Gill 2008 for a more critical assessment on the scope of learning.)

the application of (social) psychology to economics, finance, and marketing, to the extent that this is again relevant to the area of RIS. Then we link these insights more closely to the market for RIS. We do this first, by providing a description of some general features of this market and second, by walking through the investment decision process of a household. In each case, we discuss the relevant academic insights and concepts from the previously-reviewed literature.

42. Finally, we would like to note that the purpose of this review is not to provide a full and comprehensive description of the literature on BE. In fact, this would simply duplicate existing work. As we note below in more detail, agencies such as the UK Financial Services Authority (FSA) and the OECD have recently conducted such surveys.[10] Instead, our intention is to provide a review that is closely tied to the objective of the present project, namely to identify areas where policy could improve the effectiveness for consumers of the RIS market. For this purpose, the literature review is closely linked to and organised around the identified main features of the market for RIS - for example, the role of financial advice.

2 Behavioural Economics: Fusing Economics and Psychology

2.1 Introduction

43. In this section, we broadly review the main strands of the growing literature on BE. As noted above, when we later focus on the application to RIS, we will examine in more detail some of the reviewed concepts, theories, and empirical studies. As a starting point, it is useful to provide a simplified description of what we already referred to as the "standard model" of decision-making in economics. While such a simplified description cannot do justice to decades of developments in economics and, in particular, game and decision theories, it serves as a useful benchmark. DellaVigna (2009) provides the following short description of the "standard model":

> Individuals make choices so as to maximise a utility function, using the information available, and processing this information appropriately.

[10] For instance, the review on financial capability from a BE perspective in FSA (2008b) contains more than twenty pages of references, while the review in PFRC (2009) focuses, as we do, on individual investment behaviour.

> Individuals' preferences are assumed to be time-consistent, affected only by their own payoffs, and independent of the framing of the decision.

Starting with this brief definition, our review of the BE literature proceeds as follows. The standard model, as just described, has two main ingredients. First, it contains the decision-maker's beliefs about the outcomes obtained when different actions are taken. Second, it contains the utility that the decision-maker derives from these various outcomes. We discuss first how approaches in BE have modified the way decision-makers' beliefs about various outcomes are formed. Then we discuss approaches that modify decision-makers' (choice) preferences over outcomes. Though convenient, it will not be straightforward to fit all relevant material into these two boxes. Therefore, in a third section, we discuss approaches that question more generally the validity of the underlying decision-making model. Finally, in light of our subsequent application to RIS, we need to discuss seemingly non-standard concepts that have a BE "flavour" but are not commonly associated with this category. Most particularly this encompasses the concept of trust.

44. Before turning to a detailed account, it is helpful to provide a broader picture of the main features of BE. The literature often notes that, more than standard economics, BE acknowledges that models of behaviour must be context-sensitive: factors such as personality, norms, culture, experience, and expertise can account for often large variations across individuals and situations. For instance, we discuss loss aversion as one deviation from the standard model. Empirical research has provided evidence for loss aversion, but also for its often large variation.[11] Likewise, by drawing on its roots in psychology, BE naturally puts more emphasis on the fact that people base their behaviour on their *perception* of circumstances. Framing effects are one of the key consequences.[12]

---

[11] For a general discussion, see Johnson (2006). Johnson et al. (2006) show that loss aversion seems to vary, in particular with knowledge, suggesting that even an interpretation of loss aversion as a stable individual characteristic may be questionable. Indeed, both loss aversion and risk aversion seem to be highly unstable within the individual, and can be strongly manipulated by shifting the decision-making context (e.g., Vlaev et al., 2009).

[12] Put differently, people do not respond to some "objective experience," but to what has been termed their "construal" in mental life. For an example, outside the subject of this review, providing people with incentives to work may have unintended consequences, as in a person's mind it may turn a task that was deemed to be interesting into less attractive "work." (See, e.g., Lepper et al. [1973] for just one reference of this well-documented observation). More generally, and potentially also more relevant for this study, policy intervention

45. A further distinctive feature of BE is its focus on situations in which deviations from the standard model are particularly likely.[13] As already noted, this raises the question of which economic situations are more appropriately described by models that allow for such persistent errors due to limits on rationality. In particular, we will ask when and where this is appropriate for the market for RIS. Generally speaking, such limitations are less likely to be persistent or relevant, particularly in the aggregate, (i) when people can learn,[14] (ii) when they act in a professional function, or (iii) when the effects of some actors' irrational behaviour is erased by the actions of more rational agents, as in a competitive environment, for example.[15]

2.2 Beliefs and Belief Formation

46. The standard paradigm of knowledge creation relies on the concept of belief formation and belief updating in a "Bayesian" - i.e., statistically correct - manner. Especially useful for our discussion is the following repeated updating procedure: faced with new information, the prior belief is updated into a posterior belief, which in turn becomes the individual's prior upon the arrival of newer information. The updating process itself consists of a careful assessment of the quality and reliability of existing knowledge and new information.

---

may be differently perceived by the target group and could even be perceived "as an insulting and stigmatizing exercise in co-option and paternalism" (Ross and Nisbett, 1991). See, also, Bertrand et al. (2006) on an application of these insights to policies to support poor people in their decision-making.

[13] Camerer and Loewenstein (2007) identify the focus on contextual factors as well as on "non-stationary" behaviour, after learning has occurred, as two key distinctive features of the literature on BE. In addition, they note that BE researchers often employ different empirical strategies by using data such as self-reports or cognitive measures that are rarely found in more standard economics research. Interestingly, Ho et al. (2006) also stress that BE models should be "psychologically plausible." This is meant to contrast with Milton Friedman's well-known "as if" doctrine, which states that empirical accuracy is the only proper criterion for evaluating economic models, rather than, say, their internal plausibility. Still another perspective on the defining characteristics of BE could be to contrast BE with approaches in mainstream (theoretical) psychology. As Prelec (2006) observes, "behavioral economics models may be interpreted as contributions to a future theoretical psychology, one that will appear uncomfortably rigorous from the current psychological perspective and uncomfortably vulnerable to empirical refutation from the current economic perspective."

[14] Unfortunately, few field studies document learning. For instance, Seru et al. (2009) or Feng and Seasholes (2005) analyse how, in a large sample of individual investors, trading performance - especially with respect to biases such as the disposition effect - changes over time. A key finding is that learning also shows up in the exit of the worst-performing investors.

[15] For more on this, see, for instance, Camerer and Fehr (2006). For examples of strategic contexts where limits on rationality can either have multiplier effects or where they can be erased by the actions of more rational agents, see the survey in Ho et al. (2006).

47. We now discuss several deviations from this standard paradigm, based mainly on experimental contributions. While we occasionally also provide a discussion of evidence that questions some of the reported biases, we would like to note at this point that several authors have offered a more far reaching critique regarding the validity of many of these. This concerns both the question of how relevant these biases are outside the laboratory, but also the question of how much the respective findings depend on the particular way in which the behaviour of participants was elicited.[16]

Prior Beliefs: Availability, Wishful Thinking and Overconfidence

48. The accessibility of information is a key ingredient in the formation of a prior belief. In an early paper, Kahneman and Tversky (1974) identify an "availability bias", which postulates that individuals tend to judge the probability of an event according to its availability in memory. For instance, "socially close" events tend to be remembered longer than more distant events. Further, it is not always the true quality of information that plays a key role but rather the decision-maker's assessment of that quality. This assessment can be biased in various ways. It has been found that many people tend to overestimate their respective abilities (overconfidence),[17] while also yielding to wishful thinking and optimism.[18] Overconfidence in prediction accuracy corresponds to people's much-documented overconfidence in their natural ability to perform tasks. In a famous survey conducted by Ola Svenson (1981), 93% of participants estimated their driving abilities to be higher than the median. However, this and other studies on overconfidence have not remained unquestioned (e.g., Moore and Healey, 2008). Buehler et al. (1994) documented the related "planning fallacy", by which individuals tend to underestimate the completion time for tasks.[19] These observations will also be relevant below, when we talk about self-control and preference formation.

---

[16] See, in particular, the various contributions made by Gigerenzer (e.g., Gigerenzer 1991, 1996), or for a more recent discussion Hertwig and Ortmann (2005).

[17] For instance, see Alpert and Raiffa (1982) for overconfidence in people's estimation accuracy. While overconfidence is highly documented, "underconfidence" has also been documented, especially in complex situations (e.g., Kruger, 1999).

[18] For instance, Jacobsen, Lee and Marquering (2008) find that men are much more optimistic than women regarding the performance of financial and economic indicators.

[19] Malmendier and Tate (2005, 2008) provide evidence of CEOs' overconfidence when choosing investment projects, suggesting that professionals also exhibit such a bias. According to Willis (2008), individuals with above-average financial literacy are more vulnerable to financial fraud. Finally, there is also discussion in

"Updating"

49. People may not use new information in the manner described by the standard model. According to the "anchoring bias", they tend to rely on a sometimes arbitrarily chosen reference point when updating beliefs. Such a reference point is sensitive to many factors, for example the order in which new information is presented.[20]

50. Such biases may arise from cognitive shortcuts, described above, that tend to be useful in everyday life. Another example of such a shortcut-driven bias is the "representativeness heuristic". Instead of thoroughly assessing the plausibility of events and their interconnections, individuals often assign a high conditional probability to an event that seems to best represent the underlying state. An example taken from Kahneman and Tversky (1974) illustrates this.

51. Participants in an experiment were given the following description: "Steve is very shy and withdrawn, invariably helpful, but with little interest in people, or in the world of reality. A meek and tidy soul, he has a need for order and structure, and a passion for detail." Asked to determine Steve's profession from a list of choices, participants overwhelmingly chose librarian, as opposed to farmer or physician. It seems that they did not appropriately take into account the prior distribution ("base rates") of these occupations in the population, i.e. the *unconditional* likelihood with which a person is a librarian, for instance.

52. The representativeness heuristic is closely related to the so-called "law of small numbers" and the "hot hand bias". Again, in each case, people tend to ignore some key facts of the underlying, unconditional distribution when forming beliefs.[21]

---

marketing of how, in situations with individual demand uncertainty - e.g., over the usage of capacity on the internet - firms can benefit when customers underestimate variation in usage - e.g., as they "overconfidently" forecast their own usage (e.g., Lambrecht et al., 2007).

[20] Kahneman and Tversky's (1974) famous experiment documents that when asked to estimate the number of African UN member states, participants were more likely to give a high estimate if also asked to compare their estimate to 60, while others who were asked to compare their answers to 10, gave much lower estimates. The "anchoring bias" is closely related to two further biases: the "primacy bias," according to which people tend to weigh initial events more heavily, and the "recency bias," according to which people put more weight on recent events.

[21] See Camerer (1989), Gilovich et al. (1985), Rabin (2002), and Rabin and Vayanos (2010) for models of the "law of small numbers," the "hot hand" effect and, once again a related but differently-named effect, the "gambler's fallacy." (According to the gambler's fallacy, people believe that even in a small sample, a random

53. While a representativeness bias results in underweighting the "base rate" or the unconditional distribution, the opposite has also been documented: putting too much weight on prior knowledge, which has been aptly named "conservatism." People seem to exhibit such conservatism particularly when newly-arriving information contradicts their previously-held beliefs. In fact, in an extreme form of such belief perseverance, people may ignore any contradictory evidence or, when confronted with such evidence, they may interpret it so as to justify their prevailing set of mind (e.g., Lord et al., 1979).

Beliefs about "One's Self"

54. Just as people tend to overestimate their (analytical) capabilities, in what is termed "projection bias", people fail to correctly anticipate their future behaviour when they may be in some other cognitive "state", or even the likelihood or perseverance of such states. These states can correspond to different emotions. For example, people have been found to over-estimate how much their happiness will increase after a major promotion (e.g., Gilbert et al., 1998 or, for a negative change in life quality, Loewenstein, 1999). Projection bias is especially relevant when people wrongly estimate their ability to adapt to new circumstances. In particular, they may underestimate their self-control.[22]

2.3 Preferences

55. Preference formation is closely related to belief formation. As discussed in the previous section, issues such as availability, anchoring, or optimism and overconfidence play a key role when ordering alternative options. In inter-temporal decision-making, people's tendency to procrastinate has received considerable research attention. Recall the previous observation that, though planning requires an adequate forecast of one's own behaviour in the future, people may tend to yield to self-control problems and suffer from projection bias. While people who procrastinate might (over-) depreciate future

---

number should "correct itself" towards the average - i.e., black should be more likely than red after a streak of reds in a game of roulette. This ignores, once again, fundamental properties of the underlying, unconditional distribution, namely that each new draw is independent.)

[22] Loewenstein (2000) incorporates a self-control problem into a model of "hot-cold empathy," which is the tendency of participants to underestimate their mental, and hence physical reaction to visceral factors, such as hunger, pain, sexual arousal, fear, etc. A famous example, reported by a number of studies, suggests that people tend to shop more when hungry (Gilbert et al., 2002). Loewenstein et al. (2003) further discuss these issues and present a formal model of projection bias.

benefits and costs,[23] this goes beyond a simple excessive preference for immediacy. In more technical terms, procrastination implies that discounting is stronger for the near future than for far events. When people are not aware of their tendency to procrastinate, they may be liable to suffer significant welfare losses, e.g., as they incur high debt.

56. To illustrate the consequences of procrastination, take a consumer who decides not to return a rented video today, as the immediate inconvenience of walking to the shop exceeds the small charge for an additional day's rent. This decision may be fully rational for a consumer who expects the opportunity cost of returning the video to be higher tomorrow. But if the consumer naïvely underestimates the possibility of procrastinating again tomorrow, he may incur a long and costly delay.[24]

57. Wary individuals can constrain the effects of procrastination by pre-committing to a plan.[25] Despite some recent research that seeks to document the foundations of procrastination in neuroscience (McClure et al., 2004), it is notable that countries such as Germany have neither a low savings rate nor high (revolving) consumer debt - empirical regularities that are often quoted as evidence of some basic psychological tendency to procrastinate. This suggests that social or cultural factors may also play a key role in determining aggregate consumer behaviour.

58. Another important deviation from the standard paradigm is the possible relevance of "reference points" for decision-making. Kahneman and Tversky's (1979) concept of "loss aversion" is part of their "Prospect Theory", which incorporates a reference point against which outcomes are compared to calculate losses or gains. Often, it is thought

[23] In economics, procrastination preferences go back at least to Strotz (1956). For a more recent formal treatment of procrastination, see Laibson (1997), O'Donoghue and Rabin (1999), and DellaVigna and Malmendier (2004).

[24] In a much cited contribution, DellaVigna and Malmendier (2006) document that, in the context of health clubs, individuals tend to favour membership contracts with a high lump-sum fee and low per-usage cost, possibly in the false expectation of high usage in the future. Similar findings were reported, for instance, by Ausubel (1999) in the context of credit cards.

[25] See, for example, Ashraf et al. (2006) for a field experiment on household savings in the Philippines. They find that though only one quarter of all households with access to a commitment device actually utilised it, their saving rate outperformed that of the control group of households, which got only moral encouragement without commitment.

that losses weigh more than gains in people's calculations[26] (although this claim has been challenged by many studies, e.g., Erev et al., 2007 or Plott and Zeiler, 2010).

59. Finally, we note that there is a large body of literature on so-called "social preferences" (or "other-regarding" preferences). Recall that the standard model postulates that the economic agent optimises his own selfish utility function. However, a large body of experimental evidence documents consistent deviation from that assumption.[27] Social preferences such as fairness, inequality averseness, reciprocity and altruism (or spite) are also related to the notion of "trust", to which we turn in detail below.[28]

2.4 Decision Rules/Heuristics

60. Standard economic agents base their decisions on their (perfect) belief system and with respect to a well-defined preference structure. Field and laboratory evidence suggests, however, that the process through which people come to a decision may not always follow such a clear-cut description. Instead, how people behave may depend, at first sight, on factors outside this model, such as contextual factors and framing. Furthermore, people's often limited attention to relevant information seems to fit poorly into this model. However, as already noted, people's intellectual capacity is necessarily the crucial constraint. The fact that they have limited attention is at least partly due to their inability to fully and quickly digest new information.[29] This has also been

[26] A prominent example for a reference point effect is the so-called "endowment effect": *ceteris paribus*, individuals value an object more once they already have it, implying that its absence would then be registered as a "loss." We discuss below how this also relates to retail finance through the "disposition effect" (e.g., Odean, 1998). Another possible example of loss aversion can be found in the housing market. When house prices fall, houses remain on the market longer than when prices are rising, possibly because sellers use their own purchase price as their reference point (Kahneman et al., 1990; Engelhardt, 2003).

[27] A well-known example is provided by Forsythe et al. (1994). There, a large fraction (60%) of participants in the Dictator Game experiment (in which one player decides how to share a pie between herself and a partner without punishment) share a significant amount of the pie, thus expressing fairness consideration. Many similar laboratory results are documented in Fehr and Gächter (2000) and Charness and Rabin (2002). Rabin (1993) gives a formal treatment of fairness. Fehr and Schmidt (1999) provide a formal treatment of inequality averseness, while Rabin (1993) and, more recently, Dufwenberg and Kirchsteiger (2004) model reciprocity.

[28] Crucially, people may also, to some extent, construct their own preferences from their observation of the preferences of others.

[29] Broadbent (1958) provides an early example. Participants in Broadbent's (1958) experiment were simultaneously given two different instructions, one to the right ear and the other to the left ear, and were required to follow only one. After the experiment, they were asked about the details of the other instructions and, not surprisingly, could describe them only in very little detail.

documented for professional decision-makers.[30] People's behaviour has also been shown to be particularly dependent on how problems are described ("framed"). Their decisions thus depend on contextual factors that have limited or no information content.[31]

61. Such cognitive limitations and framing effects have been studied, in particular, with regard to "menu choices." A common way for people to deal with (overly-) complex menus may be to opt out of the problem entirely or to pick some given default option.[32] People may also tend to simplify the problem by choosing the most salient item from the menu. Similarly, they may exhibit a preference for the familiar: decision-makers may be biased towards the option they feel more competent about or more familiar with.[33]

62. We now turn to a final concept: "ambiguity aversion". When discussing belief-based deviations from the standard model, we have broadly assumed that people maximise utility given some (subjective) probability assessment. They may, however, not perceive risk and uncertainty exclusively in this way. The concept of ambiguity, in contrast to (mere) uncertainty, is possibly best illustrated with Ellsberg's (1961) classic experiment.

63. Suppose that there are two urns. Urn 1 contains 100 balls, 50 red and 50 blue. Urn 2 also contains 100 balls, but participants do not know what proportion is red or blue. Participants are then asked to choose a gamble. Each of the two possible gambles involves a potential payment of $100. In the first gamble, a ball is drawn from Urn 1, and participants obtain $100 when it is red and zero otherwise. In the second gamble, a

---

[30] For instance, Hirshleifer et al. (forthcoming) investigate the "investor distraction hypothesis." They find that reaction to news on intense news days, as reflected in the changing rate of stock prices, drops by 20 percent. DellaVigna and Pollet (2007) show how it takes time until new information is "fully digested" by market participants.

[31] Tversky and Kahneman (1981) provide evidence for this. There, as in many other studies, contextual factors seem to matter most when they are linked to other biases, such as people's possible tendency to weigh losses more than gains.

[32] A prominent example is from Iyengar and Lepper (2000), who test choice avoidance in the context of grocery shopping. In their field experiment, shoppers were invited to taste six jams in the control group and 24 jams in the treatment group. Their results show that individuals in the control group tend to purchase one of the jams, while in the treatment group more shoppers opt for the default option of no purchasing.

[33] This may relate also to people's asset choices, as discussed in more detail below. For example, Huberman (2001) finds that the geographical distribution of the Regional Bell companies' shareholders in the US is positively correlated with companies' locations.

ball is drawn from Urn 2 and the stakes are the same. We refer to these as gambles a1 and a2. Participants are then given two different choices. They may obtain $100 when a ball drawn from Urn 1 is blue and zero otherwise (gamble b1), or they may obtain $100 when a ball drawn from Urn 2 is blue and zero otherwise (gamble b2).

64. Typically, a1 is preferred to a2 and b1 to b2. But these choices are inconsistent with the presumption that people form (subjective) probabilities and then seek to maximise their expected utility. The choice of a1 clearly implies a subjective probability that fewer than half of the balls in Urn 1 are red, while the choice of b1 implies exactly the opposite. Participants seem to be averse to a choice that involves more uncertainty. This is referred to as "ambiguity aversion" (or "Knightean uncertainty" aversion). Given that riskiness is a key concept in financial markets, we will return to this again later.[34]

2.5 BE in the Marketplace

65. Many of the contributions to BE have been described in the context of individual choices, often in the laboratory. What are the implications of such biases when the decision-maker is a consumer embedded in a market setting, where firms compete for consumers, possibly via a range of strategic variables? In what follows, we want to focus briefly on the question of how competitive forces may interact, in principle, with the various biases identified by BE.

66. Take, as a starting point, a monopolistic firm. A key question is whether the firm can expect to earn more profits when facing customers who are subject to some of the reported biases. For example, suppose that people procrastinate and consume, instead of saving for the future. If the firm offers savings products, then this would reduce its profits. The firm would then want to educate people about their need to save and would want to offer products that help people overcome their possible self-control problem. Instead, suppose that the firm's customers are retail investors with online trading accounts, and suppose that the firm profits from any trade that is undertaken. If customers suffer from "overconfidence" with respect to their own trading skills, then the firm would want to exploit this bias, e.g., by providing free newsletters (clearly

[34] There are various formal ways in which to incorporate this into decision-making, each involving a departure from our simple framework, in which we separate beliefs from utilities.

without privileged information) or by attracting customers' attention through regular e-mails.[35] Thus it is clear that whether a firm would rationally act to exploit or correct a decision-making bias in its customers depends upon both the bias and how this interacts with the products that the firm sells.

67. How is this analysis affected by competition among firms? Will firms act to exploit or to correct a decision-making "bias" (such as consumers paying limited attention to non-salient and hidden information, or some naïveté)? Suppose that all customers are offered the same product or contract. Then competition lowers the price, but it does not affect the structure of the contracts. Consider the subsequent discussion of financial advice. When customers are not sufficiently wary of a conflict of interest between them and their financial advisors - given that advisors may receive commissions (as we discuss further below) - it can be shown that firms maximally extract customers' surplus by not charging directly for advice, but by demanding high product prices. Clearly, this practice leads to biased recommendations towards products that pay higher commissions. Intuitively, while customers may fully take into account any additional amount that they have to pay up front, they might underestimate the likelihood of ultimately purchasing the product and paying the corresponding price before visiting an advisor. Thus, providers have an incentive to charge for advice through a higher product price (paid contingent on purchase) rather than through an upfront fee (paid regardless of the purchase).[36] The business practice of not charging customers directly for advice would persist, at least in this simple economic model, whether or not firms enjoy market power and whether or not competition prevails, as long as customers remain naïve about the conflict of interest generated by commissions. Competition would only reduce prices, thereby shifting more surplus to customers, without restoring efficiency.[37] Further, the presence of more firms could exacerbate a problem of "collective action" and "free-riding" with respect to the education and information of consumers. However, this holds only to the extent that firms cannot, through product differentiation and branding, capture the respective benefits.

---

[35] Barr et al. (2008) also observe that in some circumstances the providers of retail financial services can also be expected to benefit when consumers' biases are removed.

[36] This trade-off is analysed in Inderst and Ottaviani (2009b).

[37] This observation ignores, however, the possibility that some "maverick" firm may start educating customers in the hope of gaining long-term market share with an entirely new business model (to pay for advice).

68. Even in standard economics, there are abundant examples of situations in which more intense competition can harm some customers. For instance, the entry of more competitors can make it profitable for an incumbent firm to focus on its loyal customers, who are less price-sensitive, resulting in higher prices. Also, in standard models in which price competition is dampened by consumer search and information costs, more competition can easily lead to lower expected prices for consumers who search more actively, but higher prices for those with higher search costs.[38] In a BE context, Gabaix and Laibson (2006) have argued that competition will not provide more protection for unsophisticated customers. There, naïve customers fail to anticipate their subsequent use of high-priced add-on services (such as mini-bars in hotels). As long as consumers are unaware of their likely usage of these add-ons, this is clearly not an area in which firms will compete.

69. In this context, it should also not be forgotten that firms may have a wide range of options for discriminating their offerings between different customers, even when such discrimination has to be "incentive-compatible". For instance, in a non-BE context, through "buy-two-get-one-free" offers, firms manage to reduce the unit price for some customers (multiple unit purchasers) but not for others (single unit purchasers). Likewise, firms may provide menus of contracts that allow them to distinguish more directly between more or less biased and more or less wary consumers. This may, for example, greatly reduce the scope of the aforementioned cross-subsidisation between consumer groups, i.e. of sophisticated customers at the expense of naïve customers.[39]

70. Finally, competition can be negatively affected when more generally customers face costs of search and switching. In fact, competition is only "active" when customers make use of their option to choose. A small literature in economics suggests, however, that most consumers search surprisingly little, with many consumers picking the first-best option and most considering only one more option.[40] The economics literature has also devoted much attention to the role of "switching costs". These can arise

[38] For a detailed discussion, see Armstrong (2008).

[39] This is considered in the small literature on "behavioural mechanism design"- e.g., Eliaz and Spiegler (2006). See, also, Ellison (2006) for a short survey of BE and Industrial Organisation.

[40] E.g., Johnson (2004) on internet searches for books and CDs or Horaga-Gonzalez and Wildenbeest (2006) on online search for memory chips. It should, however, be noted that theoretically the comparison of only two offers is sufficient to ensure "cut-throat" competition when goods are homogeneous.

exogenously, e.g. through consumer "loyalty" or customer inertia. In this case, firms may compete aggressively to "tease" customers into signing a contract that, after some time, becomes gradually less attractive for the customer. For instance, a savings plan may offer high "teaser rates" while the promised interest then declines after some time. However, customers' inertia to later switch out of such a plan does not necessarily reduce the prevailing degree of competition but instead mainly affects the distribution of profits from a single customer over time. However, when customers are "inert" to a different degree, this can lead to cross-subsidisation among customers, with more mobile customers ("surfers") benefiting from the inertia of more sluggish customers.[41]

3 The Market for RIS

71. We next describe some characteristic features of the market for RIS. We have chosen not to describe products or market participants in detail for any given country as this is contained in the later "Market Review" section of this report, and so lies outside the scope of this review. Here our interest is at a more abstract level, as we want to analyse whether and how the market for RIS is particularly prone to exploiting biases in consumer decision-making. Consequently, we are interested mainly in general product characteristics of this market, including the riskiness of, and the long time period inherent in, many investment products, as well as general customer characteristics such as their ability to understand the respective products in this market. We will also take another, closer look at some previously examined topics, such as the role of advice.

3.1 Capability, Sophistication and Consumer Financial Literacy

72. Though there is no commonly-shared definition, financial capability involves the knowledge and skills required to make investment decisions to promote one's own long-term interests. A string of recent research papers, as well as policy reports across the world, suggest that many households do not possess a "sufficient" level of financial capability.[42] Much of the existing research comes from the US and the UK. There, it has been shown that many adults do not possess basic knowledge of interest rates, inflation

[41] For a detailed overview see the handbook article (draft) by Farrell and Klemperer (2006).

[42] Sometimes, financial ability is thought to refer (more) to the (cognitive) ability to process financial information, while financial literacy would then refer to the prior knowledge of key financial concepts, services and products (e.g., Huhmann and McQuitty, 2009).

or risk, all of which are essential to making well-informed investment decisions. This lack of knowledge is, however, not uniform across the whole population. Typically, it is found that better educated households have a higher level of relevant knowledge. Further, very young adults appear to lack knowledge, especially when their parents have less education and do not themselves exhibit a high level of financial sophistication. Even controlling for education, wealth is also positively related to financial knowledge. However, the causality there is unclear, as wealthy people typically have more investments in risky and more information-sensitive assets, which may require them to acquire greater financial knowledge. Thus the question is whether they possessed the knowledge prior to investing or whether they acquired it in order to invest or whilst holding the respective investment.

73. Note also, that several of the previously-mentioned biases may affect behaviour more strongly, or even only when people lack the necessary knowledge and skills to make an informed decision. Without the necessary financial capability, investors may even fail to consider the factors that *should* affect their decisions.[43] Consequently, some of the research on household finance has turned the question about financial capability or sophistication around: it has started from people's observed investment mistakes (e.g., to under-diversify or to sell winning and hold losing stocks as described in Sections 3.3-3.5 and Section 4) and then analysed which personal characteristics reduce the likelihood of such mistakes. Three characteristics - education, wealth, and past experience with risky investments - have been shown to make an investor less likely to make such mistakes.[44]

74. More recently, there has been much emphasis on the role of cognitive skills and ability, especially given the new availability of such data from household panel studies.

[43] Qualitative research in the UK found that unsophisticated customers often failed to consider risk, charges or fund size as relevant determinants of their investment choices, though this was somewhat mitigated by the use of an advisor (Conquest Research Limited, 2004).

[44] See, e.g., Calvet et al. (2009). Overall, there is a large literature, based mainly on the respective national household panels, that addresses these questions. For instance, FSA (2006) finds that financial capability increases when households have higher general education and are older. Lusardi et al. (2010) report on the financial sophistication of young adults. Much of the household finance literature has asked, in particular, what households' characteristics affect their willingness to invest in risky assets, such as stock. Much of this research, however, suffers from the mentioned problem of "reverse causality" (or endogeneity), as some of the financial knowledge and even the associated skills may have been acquired when acquiring the assets or after (cf. Van Rooij et al., 2007 or Cole et al., 2009 for a detailed discussion). For links to financial capability initiatives and respective studies, see http://www.dartmouth.edu/~alusardi/fcw.html.

Agarwal et al. (2009) use a range of data on financial decision-making to support their view that errors are least likely when households have accumulated expertise but also still possess good cognitive skills.[45] This relates, more generally, to the ability of customers to learn over time and to adjust their behaviour accordingly. In particular, when decisions are made only infrequently then such learning is less likely to occur. The same applies when there is limited feedback to consumers which could help them make inferences about the quality of their decision-making. This should apply, in particular, to long-term investment products such as savings plans, pensions or insurances. [46]

Financial Education

75. Can the lack of financial capability - lack of knowledge, in particular - be overcome through policy intervention in the form of financial education? Researchers, especially those in the area of BE, find this solution doubtful. They believe that what limits financial capability is not information and the knowledge that it takes to process this information, but instead potentially, deep-seated cognitive biases. This view is, for instance, expressed in the survey on BE and financial capability conducted for the UK's financial regulator (FSA 2008b). It also resonates strongly in a recent review of financial education by Mandell (2006), who - based on his expertise in the provision of financial literacy courses in US high schools - points to:

> the consistent finding that those who have taken a high school class designed to improve financial literacy tend to do no better or little better than those who have not had such a course. . . . We just find no connection between education and financial literacy, measured, in most cases, within a year after taking such a course.

Likewise, Benartzi and Thaler (2007) report on the limited success of employer-sponsored programmes.

76. Not all observers share these rather pessimistic conclusions. Given the complexity of the subject and the variety of methods with which to financially educate people at

[45] They cite a range of psychological and medical studies documenting the decline of cognitive skills among older adults. Further research in economics that has also documented such a U-shaped relationship between age and financial capability includes Lusardi and Mitchell (2006).

[46] On learning (and delearning) see also Agarwal et al. (2008).

different stages of their lives, it is impossible to draw overarching conclusions from, say, a limited number of workplace or classroom studies in the US. In fact, from a broad review of studies, authors from the UK's Personal Finance Research Centre (FSA 2008a) conclude:

> We have considered the evidence from over 70 evaluations [of financial capability initiatives], few of which have provided evidence that could be used to draw wider conclusions in isolation. Even by considering the totality of the evidence we know virtually nothing about the impact of initiatives on particular aspects of financial capability, or the most appropriate delivery mechanisms for use with particular groups, or to cover particular information.[47]

However, if poor financial capability is indeed a matter of psychology rather than one of information, then information-based approaches to educating households are likely to, at best, improve outcomes only modestly. To our knowledge, though, there is little experience so far with programmes that try instead to inform people about their biases and thereby induce different long-term behaviour. Such information could come, for instance, through financial advice which could, in addition, correct for an individual household's lack of information through appropriate recommendations. We turn next to advice.

3.2 Advice

77. Advice is ubiquitous in the retail finance industry. According to a broad survey of retail investors in Germany, more than 80 percent of investors consult a financial advisor.[48] Further, a large cross-country survey in Europe showed that close to 90 percent of respondents in several countries specifically expect financial institutions to provide advice, and the vast majority of customers say that they trust the advice they receive.[49] Recent UK survey data suggest that 50 percent of private pension purchasers received

[47] The authors of this study also conclude that workplace financial education seminars do have an impact, e.g., on savings rates. For a very comprehensive recent survey, see Collins and O'Rourke (2009), who note that "most evaluations report positive impacts, but magnitudes are often small when compared to valid control groups."

[48] See DABank (2004). Two thirds respond that they obtain financial advice from their main bank. For a comparison, only one fifth (also) obtains advice from an independent financial advisor.

[49] See Eurobarometer 60.2, Nov-Dec 2003. For instance, 95% in Germany, 90% in Denmark, 95% in Austria, 91% in the Netherlands, or 86% in Finland expect to receive advice from financial institutions. (However, only 40% of Greek households expect to receive advice.) Furthermore, 65% of German respondents trust advice, which compares with 76% in Denmark, 75% in Austria, 60% in the Netherlands, or 79% in Finland, but only 22% in Greece.

advice where the advisor recommended a particular product and sometimes even arranged a sale (FSA 2008c).[50] In the US, people overwhelmingly purchase mutual funds and equities (apart from employer-sponsored plans) after receiving financial advice.[51]

78. While in the European context it is likely that advised sales are of critical importance, there is little evidence so far about how customers process financial advice, whether from banks or independent advisors, and whether account performance benefits from such advice. In a recent study, Hackethal et al. (2009), using trading as well as survey data from a sample of customers of a large German bank, find that over half of the surveyed customers state that they consistently rely on the advice of their personal advisor. These customers are perhaps predictably less well informed about financial products and do not perceive there to be a large conflict of interest - and they end up trading substantially more and generating higher revenues for the bank. Hackethal et al. (2009) study the effect of using financial advice on account performance controlling for investor characteristics. They find that advisors tend to be matched with older, wealthier, more experienced investors and on average they end up *lowering* returns and Sharpe ratios relative to those obtained by investors with similar characteristics without such advice. Using a pan-European survey, Georgarakos and Inderst (2010) find that trust in financial advice has a significant impact on the decision of less educated households to buy stock or other risky and more information-sensitive "collective investment" products. In contrast, for more educated households or those who do not perceive financial decisions to be particularly complex, trust in financial advice does not significantly impact these decisions. We return to the question of trust in more detail below.

79. Despite the pervasiveness of advice, until recently its role has been largely overlooked by much of the empirical literature dealing with the analysis of households' borrowing, saving, and investment decisions. Indeed, the standard household finance paradigm

[50] Overall in the UK, 91% of intermediary mortgage sales are "with advice" (see FSA 2009).

[51] See Bergstresser et al. (2009) and "Equity Ownership in America 2005," http://www.ici.org/pdf/rpt_05_equity_owners.pdf. In a survey conducted by the Investment Company Institute (ICI 2007), over 80% of respondents stated that they obtained financial advice from professional advisors or other sources.

features "active" investors making decisions, possibly after acquiring costly information. This paradigm may describe some investors well, most notably those trading frequently through online brokers,[52] but it fails to capture a key determinant of the behaviour of other, less sophisticated investors who rely heavily on financial advice.

Paying for Advice - Trust, Credulity and Naïveté

80. It is a common practice in the retail finance industry not to charge customers directly for advice but for customers to end up paying indirectly through distribution fees, commissions, and other inducements that flow from product providers to brokers and (supposedly) independent financial advisors. These inducements may take the form of "kickbacks" which customers do not directly observe.[53] When advice represents, at least to some extent, a "credence good", then advisors' private interest in eliciting purchases may compromise the value of the advice.[54] There is, indeed, much anecdotal evidence that the fee structure of investment products, rather than their suitability, drives their sale to customers.[55] In the US, evidence suggests that mutual funds sold through broker/agent networks underperform, and that funds with higher fees ("loads") improve distribution through higher commissions, thus negatively affecting fund return.[56] Financial advisors may also have an interest in increasing the turnover in their clients' portfolio ("churning") when they earn additional fees or commissions with every new purchase.[57]

---

[52] Incidentally, much empirical research that has access to detailed, micro-level portfolio and trading data comes from such online brokers (e.g., Odean, 1999).

[53] When a customer pays directly for advice, the advisor may be legally bound to pass these benefits on to the customer, implying that, for the customer, there is an immediate tradeoff. Also, the payments made to intermediaries may be funded by fees that are directly collected from the respective investment vehicles. Transparency about payments made by product providers to intermediaries has been increased recently in many jurisdictions (e.g., in Europe through MiFID).

[54] Bolton et al. (2007) and Inderst and Ottaviani (2009a) show this in a model of "cheap talk" applied to the financial industry. In these models, reputational concerns and the threat of legal prosecution are what mitigate a conflict of interest. In the analysis of intermediated investment management of Stoughton et al. (2008), a fund advisor charges an advisory fee based on the end-of-year value of the client's portfolio.

[55] See, also, the survey among EU members of the CFA Institute (2009), in which 64% of respondents agreed that the prevailing fee structure serves the purpose of steering sales rather than serving customers' needs. The UK's financial services regulator has proposed plans to steer independent financial advisors fully toward direct charges for advice (FSA 2009).

[56] See Bergstresser et al. (2009), Edelen et al. (2008), and Chen et al. (2006).

[57] Payments to brokers have reportedly also led to distortions in the US mortgage market. Generally, such distortions are more likely when commissions vary between different products and product groups. For instance,

81. The impact of commissions on the quality of advice depends not only on whether these are made transparent to customers, but also on customers' wariness. Do customers rationally anticipate the impact that such payments may have on a possible conflict of interest with their advisor and thus on the resulting quality of advice? There are preliminary indications that not all customers are equally wary. In the US, the Federal Trade Commission's staff report (Lacko and Pappalardo, 2007) on disclosure rules for mortgage brokers suggests that "many consumers purportedly view mortgage brokers as trusted advisors who shop for the best loan for the consumer".[58] In a survey conducted for the UK's FSA, the main predictors of making an advised purchase were, after the type of product, self-reported financial confidence and self-reported trust in advisors (FSA 2008c).

82. The academic literature supports the view that some people are naïve about how conflicts of interest affect the quality of advice. For example, studies of investors' reactions to analysts' recommendations suggest that at least some investors are naïve about analysts' incentives.[59] In addition, some experimental evidence suggests that many participants are willing to follow advice rather blindly. Interestingly, even when participants are informed about the divergence of interests between them and their advisors, this knowledge does not always seem to make them sufficiently wary.[60]

83. Unfortunately, there is no current strand of BE literature that we can draw on to obtain further immediate insights. Thus, we return to this subject later in Sections 5-7. There, we draw on the literature on persuasion (games), as well as on insights from social psychology concerning strategies for influencing people's behaviour and decisions.

---

it has been suggested that unsuitable advice in the prime mortgage market may be of lesser concern because there fees are typically flat between different products.

[58] As noted above, the evidence in Hackethal et al. (2009) also suggests that customers differ in their perceptions.

[59] See Malmendier and Shanthikumar (2007) and Hong et al. (2008). Various theoretical attempts have been made to model the underlying bounded strategic rationality (e.g., Crawford, 2003 and Kartik et al., 2007). In general, such boundedly rational individuals may not understand (even if they had the necessary information) what the actions of the various players imply for the resulting payoffs.

[60] In Cain et al. (2005), participants are paid for the precision of the estimates of the number of coins in a jar. They can rely on the additional judgment of an advisor, who can closely inspect the jar. While in a first treatment advisors are paid for the accuracy of the participants' guesses, in a second treatment they are paid more when the guess is high. The estimate of the participants is 28% higher in the second treatment. See, also, Gneezy (2005) on participants' trust in advice, or Kawagoe and Takizawa (2005) (and some of the literature cited therein) on further experiments confirming such a "truth bias," even though "senders" in these experiments overwhelmingly lie.

Making People Think

84. Generally, advice could reduce inefficiencies in people's use of RIS in various ways. As a facilitator, an intermediary who both provides advice and helps carry out transactions may reduce investors' transaction costs. Further, an advisor may help to overcome people's inertia, in particular when savings and investment decisions are not high on their priority list. During the decision process, advisors could provide information not only about products, but also about possible biases, e.g. arising from wrongly-applied heuristics.[61]

85. In addition, advice could increase efficiency, as the process of receiving advice forces the decision-maker to think about the problem, perhaps in a different way from the way he or she would have done without advice. This is, at least, one conclusion that researchers on "naïve advice" have reached from their experiments. This literature analyses how, in the laboratory, participants react to advice from fellow participants who have previously played the game used in the experiment. Given that the game itself is known to all players, a key finding is that through this form of naïve advice the outcome becomes much closer to what standard game theory with rational players would predict.[62] Here we should also point out that people's investment decisions seem to be influenced by those of their peer group (e.g., Hong et al., 2004). This, however, could be explained by "efficient information processing", i.e. relying on the experience and already-acquired information of other people, in particular when there is no conflict of interest.

3.3 Riskiness

86. Many of the financial products offered for investment are inherently risky. For instance, structured products issued by a bank to retail customers ("bank-issued derivatives" or "over-the-counter derivatives") entail both a bet on the respective financial products -

[61] It is important to note, however, that not every bias can be treated with advice. For example, Pohl and Hell (1996) discuss the so-called "hindsight bias" (overestimation of outcomes that formerly were considered improbable) and find that even after providing behavioural feedback and informing about the bias, there was no reduction in the bias level. For a review on de-biasing, cf. Larrick (2004).

[62] See, for instance, Schotter (2003) for an overview of some of these experiments. Interestingly, one of the main motivations that he gives is that of advice from other non-experts, such as fellow workers or relatives, when people "choose stock, balance a portfolio, or save for a child's education."

e.g., a certain stock price index - and a bet on the counterparty's (i.e., the respective bank's) creditworthiness. Behavioural biases that affect the perception of risk and how risk enters the overall evaluation of various options thus seem to be particularly relevant for RIS.

87. Conventional theory typically assumes that financial risk is objective, as measured for instance by the volatility of yields. Individuals are thought to trade off this risk against prospective investment returns when making their allocation decisions. As noted above, however, investors may not perceive risk and uncertainty simply as some probability distribution over all possible events. In particular, when they have little experience, they may perceive outcomes as ambiguous, reducing their perceived utility from investments. In this case, they may be even more reluctant to make the specific choice.[63]

88. Also, potential investors may have different ways of treating uncertainty and risk arising from different factors. More applied work has determined a number of "risk factors" that, although often not precisely defined and operationalised, seem to be relevant for retail investors. This list includes distrust of products and/or providers, overall concern about adverse consequences, perceived volatility of returns, poor knowledge, and failure of regulation.[64]

89. It is important to note that when investors receive advice, the subjective perception of risk may provide a particular challenge. From survey data from a large German bank (cf. Hackethal et al., 2009) we know that advisors' and investors' perceptions of both the riskiness of customers' portfolios and their risk attitudes can differ substantially. Though the possibility of a reporting bias potentially reduces validity, it was found that advisors perceive customers to be far less risk-averse than they themselves report, while the actual riskiness of their portfolios is more in line with the advisors' perception than

[63] Possibly consistent with both "information overload" and "ambiguity aversion," Madrian and Shea (2001) provide evidence that complexity of decision-making leads to procrastination (cf., also, Section 2.2 for more examples).

[64] See, for instance, Capon et al. (1996) or MacGregor et al. (1999). It may be useful in future academic work to try to separate different sources of risk and uncertainty, such as fraud or market performance, on the one hand and different concepts of how people deal with risk and uncertainty, such as risk and ambiguity aversion, on the other hand.

with the customers'.[65] Though not specifically applied to financial services, there exists a large literature both in social sciences and in engineering about such differences between experts' and laymen's risk perceptions.[66] For instance, it has been found that experts are more likely to think of risk as an objective entity that is fully measurable in quantitative terms.[67] Further, cognitive heuristics that act as shortcuts to simplify information processing may also affect risk perceptions. Experts and laypeople may use different heuristics, given their different degree of familiarity with the respective decision situation.

90. There is an abundance of studies concerning which household characteristics are positively associated with self-reported risk aversion or with investment patterns that suggest high or low risk aversion (e.g., holding of stock). Though such correlations have to be treated with care due to endogeneity problems, they suggest that a combination of education, financial knowledge, income, and occupation explains a high proportion of the between-group variability in risk aversion. Also, age and gender have been shown to have a consistent relation with risk aversion. Still, given the remaining large and unexplained variance, attitudinal or psychological factors may play an important role, and they may also be less time-constant and subject to contextual factors.[68]

3.4 The Time Dimension

91. Time plays a vital role in people's investment decisions. They can save now or later, and the consumption that they expect to fund with current savings often lies far in the future. Also, their current investment decisions are often reversible as they can, for instance, continuously sell and buy financial assets.

[65] For the UK, consumer research has established similar disparities between consumer and advisor definitions of risk categories (Conquest Research Limited 2004).

[66] See Diacon (2004) for a detailed discussion.

[67] Possibly, in economic terms, this could be captured by less ambiguity, as they are able and willing to think of all possibilities and to attribute probabilities.

[68] See, for instance, Garble (2000) for a study outside of economics. See, also, Section 4. A detailed discussion is also contained in Section 2 of PFRC (2009), drawing mostly on literature outside economics.

Saving (for the Long-Term)

92. Without a doubt, the fact that the population in many European countries is ageing increases the need for greater individual saving outside of state-sponsored pension schemes. However, these needs, as well as the preparations that people are already making, vary widely among countries. Researchers who cite low savings rates as an example of households' short-sightedness and high preference for immediate consumption (or even their tendency to procrastinate) tend to refer to the UK or the US where savings rates are typically low or even negative.[69] Consequently, in a recent UK survey, the FSA (2008a) singled out procrastination as the most important "behavioural bias" and reported a long list of evidence from the UK and the US.[70] But many European countries, such as Germany, have relatively high savings rates, as mentioned above. Cultural factors thus seem to matter as well, although it must be noted that any comparison of savings rates must take into account key cross-country differences such as the extent of current and anticipated future state pension schemes or in the provision of public goods and services. To what extent current savings decisions are also affected by past experience with financial products is another question that remains largely unexplored.[71]

Reversibility

93. When do investors buy and when do they sell stock? There is a large literature on behavioural finance that - building mainly on data from online brokerages - reports possibly excessive trading by retail investors. Their trading may be triggered by

---

[69] According to the Office for National Statistics, 2008, for instance, the UK household savings rate in the first quarter of 2008 was negative for the first time since 1958. Further, much of the debate about increasing financial literacy in the UK and the US begins from the observation of low savings rates and limited participation in sponsored retirement schemes. For the UK, it is observed that only 27% of workers without a defined benefit plan are adequately saving for retirement, while half of all UK workers may face inadequate or no retirement income outside of any state pension (Kane, 2008).

[70] According to the latest pre-crisis (2007) figures, the average household saving rate for the EU was more than 10%, compared with 2.2% for the UK and 5.2% for the US. Germany (16.7%) and Slovenia (16.4%) had particularly high saving rates. Equally stark is the variation over time, e.g., given that the savings rate in Germany remained pretty much constant over the years while that in the UK has dropped significantly. (All data from Eurostat 2009.) Further, it should be mentioned that all these figures should be treated with caution as they are typically calculated on a "flow" basis (dividing gross savings by gross disposable income), thereby not accounting for changes in the market value of "stock", such as housing or financial investments.

[71] See, however, Choi et al. (2009) on how savings rates are determined by past performance of portfolios (precisely, of 401(k) pension accounts in the US).

overconfidence about their own ability (e.g., Odean, 1999; Barber and Odean, 2001) or by attention to non-informative news (e.g., Barber et al., 2009). Also, their trading decisions may be affected by their tendency to apply reference points and to "narrowly frame" a particular investment decision, which may induce them to sell winners and to hold on to losers.[72] Such "momentum" behaviour may also depend on psychological traits that differ between countries (e.g., Chui et al., 2009). We return to this when discussing the decision process of retail investors in Section 4.

3.5 Market Environment

94. So far we have highlighted the key characteristics of decisions RIS customers face. In a final step we now examine further features of the market for RIS and analyse how they may make the concepts and theories of BE more applicable. We begin by considering research on firms' use of strategies that hide costs and/or make price comparisons harder. For instance, that firms may try to "obfuscate" their offerings to customers has been documented in various markets and for various such strategies. Ellison and Fisher Ellison (2004) or Hossain and Morgan (2006) provide evidence on strategies such as presenting a low headline price together with high "small print" charges for postage. Shefrin (2002) discusses obfuscation strategies practiced by mutual funds and Miravete (2006) analyses "foggy pricing" in the telecoms market. The literature also provides evidence of consumers failing to choose optimally from an available menu of offers, provided by either a single firm or by different competitors. Examples cover the markets for internet provision, electricity, credit cards, and telecoms (cf. Chang et al., 2008 for a broader discussion).

95. However, at first there is nothing to suggest that these practices should be more prevalent for RIS than for other products. In fact, we may think of many product and sales situations where this should be more prevalent than in the typical RIS situation, e.g., shopping on the internet (for which - possibly for this reason - special laws for "cooling off" periods etc. apply).

[72] In addition to the previously cited material (cf. Sectsion 2.2 and 2.3), see Shefrin and Statman (1985) and, more recently, Weber and Welfens (2008). There is also some literature that then tries to calculate the aggregate losses that retail investors incur by such trading strategies - e.g., Lee et al. (2009).

Complexity of Product Space

96. The decision space faced by retail investors is large. Restricted to a sample of retirement plans in the US, Huberman and Jiang (2006) found that some plans offer as many as 59 funds, with most offering between six and 22. Outside such sponsored plans, the range of available products is even more bewildering. It is often observed that even the number of straightforward stock-oriented mutual funds far exceeds the number of stocks that investors could also hold individually in their portfolio. Investors also have access to derivatives and structured products which, in countries like Germany, also represent a large market for retail investors with hundreds of thousands of traded products.

97. The difficulty in choosing between elements of such a vast product space are exacerbated further by the considerable complexity of many of the products themselves, which in many instances makes comparison of even small numbers of different products extremely difficult. From the customer's perspective, Goldstein et al. (2008) argue that this complexity is compounded by the fact that a decision-maker must choose not only among a number of funds, but also both the absolute sum that he wants to save or invest and the shares that he wants to allocate across the different selected funds. As a result, observed diversification strategies often follow for very naïve approaches such as the so-called "1/N heuristic" (Huberman and Jiang, 2004) in which investment is allocated evenly across the different options within a fund or plan.

Complexity of Prices and Charges

98. Even in a simple product class, prices - in the form of additional expenses and fees - seem to vary substantially. For instance, Hortacsu and Syverson (2004) find significant variations in expense ratios among (homogeneous) Standard and Poor's (S&P) 500 index funds, and they attribute the fact that the more expensive funds are still sold to search and switching costs. Dorn (2010) reports similar findings for relatively homogeneous equity index options held by different German retail investors. In experiments it has been found that even with such simple products participants frequently fail to identify the lowest cost alternative (cf. Choi et al., 2009).[73] As noted

[73] In the context of asset allocation and mutual fund investment this has been stressed, for instance by Agnew and Szykman (2005).

above, the inability of customers to select the cheapest price may be partly due to information overload. Further, some of the fees may be hidden or not adequately recognised as costs (e.g., Barber et al., 2005).[74] Motivated by these facts, some of the theoretical papers in the fields of behavioural finance, information economics and search theory have taken up the task of modelling why and when added "complexity and fogginess" is a strategic advantage for firms. These models may but *need not* rely on limited customer foresight or some form of naïveté. As shown, for instance in Carlin (2009), product providers may strategically choose such complexity in order to limit competition. To our knowledge, no one has investigated how the role of advice is consistent with - or even possibly conducive to - such low levels of transparency and high cost dispersion.[75] Also, it must always be asked why there is no scope for "maverick" firms with simple and transparent prices to roll up the market – or scope for simple products such as Exchange Traded Funds (ETFs) to gain market share, as they do right now. It could be that the problem lies less with "behavioural" arguments but with the organisation of the industry, i.e., "gate keeping" through bottleneck suppliers (banks, financial advisors, etc.) and the role of payments through commissions, all discussed elsewhere in this review.

99. We would suggest that complexity of products is particularly problematic for relatively opaque retirement savings products, which may also be combined with life insurance. In fact, many participants in a UK survey were not aware that pension funds were often invested in the stock market and did not know whether they had a defined benefit or defined contribution pension plan (DWP, 2006; Clark and Strauss, 2008).

Information

100. Perceived complexity may also be linked to the fact that customers of RIS, at least "average customers", seem to search very little. To our knowledge, research and policy

[74] There is a larger literature documenting that implications of "standard price theory" are, to some extent, violated in markets for financial products - e.g., due to high search costs and overall high intransparency. cf., Christoffersen and Musto (2002) for money market funds, Bergstress et al. (2007) for mutual funds, Gree et al. (2007) for retail municipal bonds, Mitchell et al. (1999) for life annuities, to name a few. However, people may learn, and the market is then forced to react accordingly. Barber et al. (2005) show how, in the US, fees charged by mutual funds have dramatically changed. Precisely, the proportion invested in front-end-load funds has dropped significantly (for equity mutual funds from 91% to 35% over 30 years).

[75] Policy experiments (in the laboratory), such as that on disclosure of mortgage attributes reported in FTC (2007), at least suggest that improvements in transparency compared to existing , industry standards are possible.

work that investigates how people actually purchase investment products, including their search for information and advice, is relatively scarce. In a study conducted for the UK's FSA, people who had recently bought financial products or were considering doing so were interviewed (FSA, 2008c). One finding was that people looking to buy financial products conduct only very limited information searches, with the majority reporting that they had consulted only one source of information. Likewise, a large fraction of the interviewees had personally collected information from only one company. However, for investment products - in contrast to other financial products such as insurance or mortgages - their information collection was broader. The study also found that people's confidence and experience in the financial services marketplace are the key determinants of whether they will collect information from multiple sources and consult an advisor. People also commonly report that information in the marketplace is difficult to use and trust.

3.6 A Brief Summary

101. The potential problem areas that we identified in the preceding analysis closely match those identified in earlier reviews, albeit with one key difference: the role of advice. In a review carried out for the OECD, Tapia and Yermo (2007) identify six main obstacles to good investment decisions that are, as they note, widely accepted in the literature on BE: 1) choice and information overload; 2) unstable or undefined preferences; 3) heuristic decision-making; 4) framing effects and investment menu design; 5) procrastination and inertia; and 6) overconfidence. These are also the main factors identified in the detailed literature review carried out by the Personal Finance Research Centre (PFRC) for the UK (PFRC 2009). These results complement those of an earlier survey of BE and financial capability by the FSA (2008b).[76] The FSA's survey places much emphasis on procrastination and the failure to save. Further, it stresses loss aversion and mental accounting, in particular with respect to people's simultaneous use of investment and credit products. The authors also report on status quo biases and people's tendency to use default options. Finally, they refer to the "curse of knowledge" with respect to the various biases that lead people to make incorrect use of information,

[76] With a focus on pension-related issues, see also Gallery and Gallery (2005) for a recent policy-oriented survey.

e.g. when they are overconfident or give excessive attention to some, and too little attention to other, information.

102. In what follows, we further extend such conclusions in the following way. Much of the literature on "behavioural finance" focuses on investment decisions in the context of a classical portfolio choice model. Issues such as procrastination are typically not relevant, as the funds that the investor wishes to allocate are taken as given. Nevertheless, this literature may prove useful as it draws attention to the *process* of making investment decisions. Thus, Section 4 looks at this decision process. Sections 5 to 7 revisit the topic of sales and advice. Section 5 reports on the literature on persuasion. Section 6 explores the issue of trust. None of the aforementioned reviews takes up this issue, presumably because the recent contributions to this topic do not fall strictly within the area of BE. Section 7 then turns to face-to-face sales and advice situations with the associated social interactions.

4 Taking a Different Angle: Investment Mistakes – A Process View

103. In the preceding section, we took account of various asserted and/or reported "biases" that seem particularly important to RIS, given the characteristics of this market. The preceding material, organised around these characteristics, complements the earlier, more general review of the BE literature, which was organised around more abstract concepts.

104. We offer now a third and final perspective on the literature. We consider the investment process of a hypothetical retail investor, though we now exclude the aspects and steps that have received little attention in the behavioural finance literature. In particular, this excludes the role of advice, as well as the pre-purchase information search. Instead, our approach follows the large literature on household finance (Campbell, 2006). The paradigm of this literature is that of an individual decision-maker who processes information from various (abstract) sources and then allocates his wealth according to his perceived preferences. Typically, this approach does not pay much attention to the "supply side", i.e. the (endogenous) availability of different investment products and how they are marketed and advertised. In addition, for the following analysis, we also take as given that households can assess their savings needs.

105. Walking through the investment purchase process from the perspective of this literature proves useful for the following two reasons.[77] First, it allows us to incorporate literature that was previously only of tangential interest. Second, this provides an opportunity to present literature that might qualify the presence and importance of certain biases, at least for certain customer segments.

106. We view investors as taking the following steps:

- Assessing their personal balance sheet;
- Determining their preferences, including risk aversion and investment horizon;
- Determining the optimal allocation across asset classes;
- Picking individual securities;
- Undertaking a transaction;
- Reviewing the decisions and monitoring the portfolio.

Assessment of "Personal Balance Sheet"

107. To get a comprehensive picture of his current financial net wealth, a fully rational investor would take stock of all his financial assets and liabilities. This would involve forecasting future income and future consumption levels, and taking into account any background risk arising from income fluctuations or changing house prices, as well as any future consumption needs.[78] This makes it possible to determine the investor's total "risk capacity", i.e. the amount of risk that he can take. The complexity of an analysis of this kind, and the amount of information required to underpin meaningful calculations, is very substantial.

108. Households tend not, of course, to create such a comprehensive picture before making investment decisions. Instead, they seem to segregate their balance sheet into different accounts, thereby omitting any interactions between them ("mental accounting," cf. Thaler, 1985). In addition, as also noted above, households may then evaluate any gains and losses from the investment in isolation, i.e. only with respect to this particular investment. There is, however, evidence that households *do* take their current position

[77] For an early review of the literature on Behavioural Finance, see Barberis and Thaler (2003).

[78] Taking into account future income, as well as its riskiness, is particularly important for young households since future income is typically the major component of young investors' "wealth."

in the life cycle into account and, for instance, try to smooth their consumption over the life cycle. This is then reflected in different asset allocations (e.g., Modigliani, 1986; Goyal, 2004).

109. It has also often been suggested that investors may not devote sufficient time to making better informed decisions, possibly aggravated by a lack of knowledge. Such a statement presumes that a better informed investor will make a clear "optimal" choice.[79] However, even experts differ widely on what the optimal portfolio choice of a household should be, given its wealth, time horizon of investment, and risk tolerance.[80]

Assessing Risk Aversion and Investment Horizon

110. After an assessment of their (objective) risk capacity, investors must turn to an assessment of their (subjective) willingness to take on risk.[81] According to the "classical theory" of portfolio allocation, risk aversion would then determine how the household's portfolio is divided between the risky part (the "efficient market portfolio") and the riskless part (usually thought to be government bonds).[82] More modern theories of optimal portfolio allocation also take into account the planned time horizon of the investment. This may be affected by foreseeable liquidity needs, such as retirement.[83]

111. How thoroughly do investors reflect on their ability and willingness to take on risk? Hackethal et al. (2009) and Dorn and Huberman (2005), for example, suggest that some investors have incorrect perceptions of their portfolios' actual riskiness. Further, as we noted, investors' perceptions of and aversion to risk may not be time-invariant and may depend on contextual factors.[84]

---

[79] For instance, Benartzi and Thaler (2001) suggest that pension-plan participants have relatively weak preferences for the portfolio they selected themselves. Recall, also, that there is much evidence that default options matter for people's participation and asset allocation in retirement plans.

[80] See, for instance, the mystery shopping reports in Bachman and Hens (2008).

[81] See, for instance, Roszkowski et al. (2005) for such a distinction.

[82] This goes back to Markowitz (1952) and Sharpe (1966).

[83] For instance, though there is considerable debate in the literature, stocks are often presumed to show less volatility of returns in the long run than in the short-term, which is why investors with longer planning horizons may optimally want to hold more stocks. For a detailed discussion, see, for instance, Campbell and Viceira (2002).

[84] As noted above, experiments indicate that this also holds for loss aversion. Slovic et al. (2002) or Finucane et al. (2000) have suggested, more generally, that feelings in a specific situation also affect (risk) perceptions.

Optimal Asset Allocation across Classes

112. Allocating investments across different classes, such as stock or government bonds, is commonly referred to as "strategic asset allocation." Both practitioner-oriented and academic contributions (e.g., Brinson et al., 1991 or Goetzmann and Kumar, 2005) note that this step is far more important than the subsequent (tactical) decision of which specific securities to pick in a particular asset class. According to classical portfolio theory, households should hold well-diversified portfolios. Another common conclusion is that many households, given their wealth levels, should have some exposure to risky assets such as stock (e.g., Campbell, 2006).

113. With respect to this last observation, a large literature on household finance has documented the so-called "stockholding" (non-participation) puzzle. Given the presumed "equity premium" from more risky investment in stock and Arrow's (1974) theorem that expected-utility maximisers should always be willing to invest a small amount in the asset offering the expected return premium, Haliassos and Bertaut (1995) asked which factors could possibly account for widespread non-participation in the stock market. They pointed to three possible factors: fixed costs (for entry and for participation in the stock market); positive correlation between stock returns and income risk, coupled with short-sales constraints; and departures from expected utility maximisation.

114. In the presence of fixed costs, factors that limit the demand for stocks and/or raise the fixed costs, make it less likely that households will find it worthwhile to participate. As Vissing Jorgensen (2002) showed empirically, and Haliassos and Michaelides (2003) showed computationally, relatively small fixed costs can account for the bulk of non-participation. Empirical participation regressions also point to the relevance of such factors (see the contributions in Guiso et al., 2001). Controlling for other characteristics, participation likelihood is boosted by education; cognitive abilities (Christelis et al., 2010); financial literacy (Alessie et al., 2007); perception of higher equity premia (Dominitz and Manski, 2007); use of the internet to collect information (Bogan, 2008); and awareness of stocks (Guiso and Jappelli, 2005). Social interactions have also been shown to promote asset market participation for widely-held assets (Hong et al., 2004), and this is partly due to the information they provide to potential participants, thus lowering their fixed entry costs. International comparisons show higher participation

rates in countries where fixed costs are less important (Christelis et al., 2010), and increases in participation within a country over time as fixed costs decrease (Guiso et al., 2003).

115. Fixed costs are, however, a less satisfactory explanation for the much more limited observed non-participation among wealthy households unlikely to be deterred by such small costs. Here, factors such as shareholder protection (Gianetti and Koskinen, 2008) and trust (Guiso et al., 2008), may be quite relevant, and we return to some of those factors below. Explanations involving departures from expected utility maximisation in favour of alternative optimisation paradigms ('non-expected utility') have delivered comparatively small effects or the theoretical results are reliant on assumptions, e.g. on reference or focal points arbitrarily set at non-participation. A promising recent development is Barberis et al. (2006), who propose an explanation of non-participation in the context of narrow framing. They show that narrow framing is consistent with the observation that people are often averse to a small independent gamble, even when the gamble is actuarially favourable. Finally, the idea that stock market non-participation can be explained by a positive correlation between labour income and stock returns runs into various problems, including the finding of Davis and Willen (2000) that the groups exhibiting positive correlations happen to be those most likely to be holding stocks.

116. The role of financial advice in risk taking is a topic of substantial interest. In this context, by comparing portfolios with stated risk preferences, Hackethal et al. (2009) find that advised investors take on too much risk, instead of too little. Surveys from the UK likewise suggest that most consumers believe - wrongly - that there is no capital at stake in low-risk investment products and may, therefore, take out investment products unaware that financial risk is involved.[85] As noted above, households also seem to diversify insufficiently, in particular across different countries ("under-diversification" or "home bias"). However, the well-developed theory of asset pricing has delivered various rational explanations for why this may be the case, such as hedging needs or diversification costs, or even knowledge advantage.[86]

[85] Cf. IFF (2007) and FSA (2006). Compare also the previous discussion on financial capability.

[86] See Lewis (1999) for an early overview. Knowledge advantages are suggested by the findings in, for instance, Coval and Moskowitz (1999) or Ikovic and Weisbenner (2005).

Selection of Individual Securities (in Asset Classes)

117. There is much dispute in the literature over whether investors, besides avoiding (excessive) costs, can realise abnormal returns through picking particular securities within a given asset class. We discussed earlier how some investors seem to incur what could be termed avoidable costs. Despite the fact that it also pays for them to diversify within the asset class of domestic stock, many investors seem to hold only a few selected stocks (e.g., Polkovnichenko, 2005). Even outside employer-sponsored programmes, people seem to invest in the stock of the company they are working for even though their human capital is already, to some extent, exposed to this idiosyncratic risk (e.g., Benartzi, 2001).[87]

118. Two additional issues regarding households' choice of individual securities may also be of interest for policy. In an efficient capital market the timing of investment does not matter. According to classical theory, even when the market is not "strongly efficient," investment timing pays only for investors who rightly believe that they have an information advantage vis-à-vis the market. Clearly, this should not be the case for retail investors. Moreover, a large recent literature in asset pricing demonstrates that stock prices have momentum, in both the short run (positive) and the long run (negative). Based on this observation, it has been suggested that retail investors lose out compared to institutional investors since they follow, often belatedly, common fads and thus buy and sell "in concert" (e.g., Kumar and Lee, 2006; Barber and Odean, 2008).

119. Can investors benefit from judiciously choosing a particular mutual fund, based on say, past performance? There is a long debate about whether individual mutual fund managers can consistently outperform their peers, or whether instead even a series of above-average years are nothing more than a streak of good luck. Some serious research has shown that, even adjusted for risk, there may indeed be superior mutual fund performance and persistence, driven by superior management ability and skill (e.g., Gruber, 1996; Elton et al., 1996; Kosowski et al., 2006).[88] However, the fraction of

[87] A more systematic study based on Swedish household data by Calvet et al. (2009) shows that such low diversification accounts for a large part of households' (avoidable) risk exposure.

[88] See, however, Carhart et al. (1997) for a critical discussion, pointing out that at least some of the earlier literature may have suffered from a "survivorship bias", given that underperforming funds were systematically excluded from the data.

funds with above average "qualities" may be relatively small (e.g., less than 1% according to Barras et al., 2009). [89]

120. It has been observed that individual investors' fund choices do react to mutual funds' past performance. However, Gruber (1996) and, more recently Keswani and Stolin (2008), are among those who observe that a sizeable fraction of investors show inertia by sticking to underperforming funds and not purchasing the funds with the highest past performance. Still, these observations do not indicate that retail customers would be best off by constantly reallocating funds to the best performing funds. Even the aforementioned studies, in particular Gruber (1996) and Elton et al. (1996), show that it is difficult to outperform a comparable benchmark or index fund, at least on a net cost basis. However, current research suggests that when deciding to put (fresh) money into mutual funds, even in a given class of such funds, retail investors should look at more than just costs but should also consider other factors such as past performance. Financial advisors may, once again, be helpful here.

Undertaking Transactions and Monitoring Wealth

121. When should investors reallocate wealth in an asset class or across asset classes? Classical theory suggests that this should be the case in two instances: first, when the investor can rightly presume that he obtains privileged information that is not already "priced in", though this should not be likely for retail investors; and second, when movements of prices or risk measures suggest that, according to the investor's preferences and investment objectives, the portfolio should be optimally rebalanced.

122. As mentioned above, it has been argued that investors seem to exhibit both inertia *and* excessive trading activity. The latter has been observed in particular among investors with an online brokerage account. We offered overconfidence as an explanation, but recent work has examined this idea more critically. It has also been suggested that non-standard preferences with reference points (as in Kahneman and Tversky [1979]), together with "narrow bracketing", in which each individual investment decision is taken in isolation, could account for these patterns of behaviour. However, recent

[89] Interestingly, Barras et al. (2009) also show that almost one quarter of fund managers consistently generate a "negative alpha", i.e., they are worse than a passive index-tracking fund. Why these funds still "sell" is a puzzle.

research has indicated that such preferences may not necessarily give rise to the "sell winners and hold on to losers" behaviour observed.[90] An issue of broader policy relevance is whether households at large overtrade, as indicated by brokerage account data (see above), or exhibit portfolio inertia, as suggested by a number of studies of retirement products.[91] Recently, Bilias et al. (2010) used population-wide data from the US to show that trading behaviour within brokerage accounts is on an entirely different level compared to the population at large, which is characterised by widespread inertia. Additionally, the median share of financial assets that households keep in brokerage accounts is under 10%, suggesting that overtrading, even when present, affects just a small fraction of household finances.

5 Focus on Persuasion

123. We have already discussed how advice plays a key role in the market for RIS. We also noted the use people make of advice and how this affects their decisions according to how much they trust their advisor. People's different levels of trust can be interpreted as their different perception of the possible conflict of interest between themselves and the advisor. This conflict of interest could, for example, be in the form of the advisor's potential commissions. But we also noted the evidence suggesting that people may be naïve about this conflict of interest - at least to some extent. Though the BE literature has not explicitly addressed the topics of advice or of naïveté and credulity in people's reaction to (biased) advice, the literature on persuasion and advertising speaks to similar issues. We therefore next provide a review of this literature.

5.1 Background: Advertising and Advice in Information Economics

124. There is a large literature in economics, as well as in areas of business studies such as marketing, that deals with advertising (cf. Bagwell [2007] for a recent survey).[92] This literature makes a key distinction between advertising that is directly informative, in that the recipient can immediately understand it, and advertising that is only indirectly

[90] Cf. Dorn and Huberman (2005) or Barberis (2009).

[91] For a detailed account of people's lack of switching, see Sections 4.4 and 4.5 in PFRC (2009). For a study using data from TIAA-CREF (covering US academics), see Ameriks and Zeldes (2004). For data from 401(k) accounts, see Agnew et al. (2003).

[92] This literature goes back to seminal contributions such as Stigler (1961), Telser (1964) or Nelson (1970).

informative. In the latter case, the recipient may not understand the message, or the message may simply not be sufficiently credible, e.g. any company could claim that its product is excellent. However, the mere fact that a company advertises, and in a particular way, provides a credible signal. For instance, an expensive advertising campaign may be worthwhile only for a company with repeat customers whose first experience with the company's product(s) was positive enough to keep them coming back. Conversely, it would not pay for a firm with an inferior product to try to mimic a firm with a superior product by burning money on a similar expensive advertising campaign.

125. The preceding distinction between "direct" and "indirect" information is also key to (models of) advice. An advisor's job may be merely to present information understandable to sophisticated investors and which can be relied on, e.g. by providing the appropriate documentation. Models of so-called "cheap talk" (Crawford and Sobel, 1982) presume, instead, that an advisor cannot communicate information in that way. If that is the case, then the customer must rely on the advisor's recommendation. In order for communication to be informative in equilibrium, the preferences of the advisor (the "sender") and the customer (the "receiver") clearly need to be aligned to some extent. Liability and reputation can provide such alignment. The less the extent to which interests are aligned, the less informative will be the advice. Wary customers will, however, rationally anticipate this.[93]

5.2 Persuasion and Advice: The Psychological Perspective

126. Once customers are no longer fully rational and wary, advertising and advice can be effective, but in different ways to those predicted by the standard models. Again, it is helpful to distinguish between two different effects: one in which advertising or advice affects preferences and one in which they affect beliefs, though such a distinction is not always clear-cut.

127. What follows is a broad discussion of persuasion. Our focus is on cases in which the standard model would predict that a message should not affect behaviour, or would do

[93] This description does not comprise all modelling variants through which economists have analysed how communication "persuades" rational people (e.g., see, also, "persuasion games" as in Milgrom and Roberts, 1986 or the use of "persuasion mechanisms" as in Kamenica and Gentzkow, 2009).

so to a lesser extent. Persuasion can affect behaviour when it changes the receivers' beliefs. One possible deviation from the standard model is that receivers neglect the senders' incentives. We referred to this above, when noting that some households may naïvely rely on advice. We also noted that research on following analysts' advice suggests that particularly inexperienced agents do not sufficiently take advisor incentives into account or, likewise, fail to adjust for sender credibility.[94] In addition, persuasion may successfully influence beliefs through effects such as framing, salience, and attention. In the latter case, even repetition of the same information can have effects upon beliefs. Further, evidence from non-informative financial advertising suggests that it succeeds by tapping into consumers' existing beliefs.[95]

128. There is also a long tradition in the economics literature allowing for the fact that advertising enters consumers' utility function directly, i.e. it affects preferences, thereby shifting demand (e.g., Stigler and Becker, 1977). In this case, the content of messages can affect behaviour even when it does not convey information. In a field experiment for financial products, for example, Bertrand et al. (forthcoming) show how the inclusion of a picture of an attractive female impacts upon the likelihood of product uptake, albeit they do not organise their results around any particular theory of how such content matters.[96]

6 Trust

129. We now turn to the issue of trust. We already noted that trust in advisors is important if people are to rely on recommendations. But people must also trust that the investment products they purchase are safe, i.e. that they will not be defrauded by brokers or that the stock market is not marred by insider trading problems, and so on. More broadly, they must trust the financial institutions through which the product is bought or managed, which itself may depend on their degree of trust in the entire financial services sector.

---

[94] A formalisation can be obtained through the "cursed equilibrium" in Eyster and Rabin (2009).

[95] For formalisations in the BE literature, see, for instance, the "coarse reasoning" approach of Mullainathan et al. (2008) or the "double-counting" approach in DeMarzo et al. (2003).

[96] For a detailed account on empirical studies, see Della Vigna and Gentzkow (2009).

130. The issue of trust does not feature prominently in the BE literature.[97] One reason for this is that trust is often given a very rational interpretation. Williamson (1993) has referred to this as "calculative trust": when purchasing risky assets, for instance, households rationally - albeit based on different (subjective) beliefs - calculate their gamble, including the possibility that they might be defrauded or misled by advice. Recently, the literature on trust has grown enormously. What is more, it has found application in the area of RIS.

131. Various concepts of trust are used in the literature. In relation to household finance, one particularly important concept is that of "generalised trust" in others, as operationalised by the standard question from the World Values Survey questionnaire: "Generally speaking, would you say that most people can be trusted or that you have to be very careful in dealing with people?" In an influential paper, Guiso et al. (2008) have shown that whether people trust others has a significant effect on their willingness to hold stock or other risky assets.[98]

132. This approach, however, does not explain why some people are more trusting than others. One answer might be that they have more trust in a legal environment that, in their view, will discipline their fellow citizens.[99] More directly, Georkaragos and Inderst (2010) have analysed whether willingness to hold risky and more information-sensitive assets depends on households' perception of whether their rights as consumers are adequate. They find that this is significant only in more educated households; for less educated households trust in advice matters. One explanation is that more educated households see less need to rely on recommendations but are, for this reason, also more sensitive to their perception of consumer protection. Interestingly, though households in

---

[97] Not surprisingly, the more business- and practitioner-oriented literature has discovered consumers' trust to be a major competitive variable. However, a brief study of some of this literature did not prove to be particularly insightful as the "theoretical" concepts used there are often insufficiently clear, and empirical studies are broadly lacking (cf. Roy and Shekar [2010] for a discussion of how financial service providers can enhance "trustworthiness"). At this point also recall the aforementioned "non-participation puzzle."

[98] Clearly, this also speaks to the two "dimensions" of trust: one concerning competence (i.e., trust that the financial advisor understands the products or that the financial institution has relevant financial expertise) and the other concerning a conflict of interest or even "altruism" (i.e., trust that the financial advisor or financial institution will seek to maximise the consumer's best interests rather than their own) (e.g., Doney and Cannon, 1997).

[99] Carlin et al. (2008) distinguish instead between "private trust" and "public trust." There, "private trust" is akin to building a *personal* relationship, possibly supported by repeated interaction, while "public trust" relies on the belief that both social norms and formal laws make agents honour their duties.

a given country face the same *objective* level of protection by institutions, including laws and their enforcement through courts, the analysis shows that individuals' perceptions seem to differ significantly.[100]

7 Personal Interactions

133. We have stressed that advice - especially in face-to-face situations - plays a key role in the market for RIS. Many investment products, such as insurance, are unlikely to be bought at the seller's premises but at home. How does this affect the outcome? Unfortunately, most of economics, including BE, does not have much to say on this. The experimental literature in economics has, for the most part, taken care to abstract as much as possible from any uncontrolled contextual factors that such face-to-face encounters could generate. This is why most laboratory experiments are now conducted anonymously through computer interfaces. Thus, in the next section, we will draw more broadly on the literature in social sciences and will also link it to the growing literature on "psychological game theory."

Face-to-Face Encounters

134. Though largely absent in much of the economics literature, social psychology and other areas of social science, such as organisational behaviour (OB), have extensively studied the impact of emotions on social interactions. Generally speaking, a person's behaviour can be affected by both his own emotions and those of others. Thus, an advisor should be able to manage the advisee's emotions and therefore affect his willingness to trust. Research has shown that positive emotions (e.g., happiness) increase people's willingness to help, to cooperate and, in particular, to trust the other party in negotiations. In addition, willingness to concede in negotiations was found to depend on the counterparty's displayed emotions, such as worry, disappointment or guilt.[101]

---

[100] Interestingly, cross-country comparisons also show that households in different countries seem to apply different standards to when they find advice *sufficiently* trustworthy or consumer protection to be *sufficiently* adequate, so that they report themselves to trust advice or to feel adequately protected. In fact, in some countries, households would overwhelmingly resist the adoption of a uniform European standard, while they are, at the same time, less satisfied with their own institutions compared to those in countries where the majority would prefer such a harmonised standard.

[101] We refer to Andrade and Ho (2009) for references.

135. In psychology, there is also an extensive literature on compliance and influence. We restrict ourselves here to the report on "doorstep selling" commissioned by the UK's Office of Fair Trading (OFT, 2004). In a theoretical appendix, the report develops a (non-formal) model of influence, building on the work of Cialdini (2001). This model is based on the presumption that people exhibit "automatic, stereotyped behaviour." These "ingrained responses" give the derived principles of influence their psychological power. Among the six principles identified, one is that of yielding to the authority of a perceived expert. In the case of RIS, it may be conjectured that the role of perceived expertise would be particularly strong, especially given households' reportedly limited financial capability (cf. also the preceding discussion of trust). Likewise, sellers are more likely to get a "yes" when they can build on one of the other six principles: reciprocity (e.g., through making small gifts); creating the (artificial) perception of scarcity; or highlighting the potential for future regret (in the case of a "no"). Finally, it is worth noting that the tendency to comply with outside influences differs significantly between individuals, depending upon the degree to which they are motivated to form accurate perceptions of reality, their need to maintain meaningful social relationships, and the importance they place on a favourable self-concept (Cialdini & Goldstein, 2004).

Social Expectations and Psychological Game Theory

136. A small literature in economics and game theory has started to consider more explicitly how "procedures" affect human interaction. It borrows its basic concepts from "attribution theory" (e.g., Heider, 1958). When trying to understand a social interaction and planning to react to other people's choices, people need to infer causes and assign responsibilities for why outcomes occur. For instance, they may react differently depending on whether they arrived at their choice situation exogenously or through the deliberate choice of another person. In turn, people care about others' beliefs about their actions and how these compare with social standards such as fairness and role expectations.[102] Applied to financial advice, the experiment by Cain et al. (2005) on biased advice has shown that when a conflict of interest is disclosed, advisors seem

[102] For recent formal work and experiments, see Charness and Dufwenberg (2006) on "promises" or Bohnet and Zeckhuser (2004) on "trust and betrayal," as well as Battigalli and Dufwenberg (2009) for a conceptual framework for such "dynamic psychological games."

more prone to providing worse advice. Disclosing commissions thus seems to undermine the trust in a relationship. Advisors who experience mistrust from their customers might then feel "morally licensed" to maximise only their own profits.[103]

8 Concluding Remarks

137. The preceding Sections 5-7 took a detour into some less well developed areas at the intersection of economics and psychology, focusing on advice, trust and the role of face-to-face interactions. As we noted, advice is a pervasive factor in the retail financial industry, though it has been ignored in much of the economics and finance literature. Further, the limited financial capability and knowledge of many households may even make advice a necessary ingredient of any well-functioning market for RIS. As we noted, when customers suffer not only from limited information but also from certain "biases", then advice may have a second - possibly equally important - role to play in educating customers or more directly counteracting their biases, provided that self-interested advisors do not abuse these biases to their own advantage.

138. The main part of this survey has asked which of the different "biases" that BE has identified may be particularly relevant for RIS, given the identified characteristics of customers and products. Here, the role of risk and the long-term nature of investments may be particularly conducive to triggering some of the "biases" discussed.

[103] More broadly, there is also evidence for the phenomenon of "trust-responsiveness": that people tend to treat those who trust them better than they treat those who do not (Bacharach et al., 2007).

References

Agarwal, S., Driscoll, J., Gabaix, X. and D. Laibson. 2009. The Age of Reason: Financial Decisions over the Life-Cycle with Implications for Regulation. Brooking Papers on Economic Activity, Fall 2009, 51-117.

Agarwal, S., Driscoll, J., Gabaix, X. and D. Laibson. 2008. Two Steps Forward, One Step Back: The Dynamics of Learning and Backsliding. Mimeo.

Agnew, J., Balduzzi, P. and A. Sundén. 2003. Portfolio Choice and Returns in a Large 401(k) Plan. American Economic Review 93, 193-205.

Agnew, J. and L. Szykman. 2005. Asset Allocation and Information Overload: The Influence of Information Display, Asset Choice, and Investor Experience. Journal of Behavioral Finance 6, 57-60.

Alpert, M., and H. Raiffa. 1982. A Progress Report on the Training of Probability Assessors. In Judgment Under Uncertainty: Heuristics and Biases, ed. Daniel Kahneman, Paul Slovic, and Amos Tversky. Cambridge and New York: Cambridge University Press. 294–305.

Ameriks, J. and S. Zeldes. 2004. How Do Household Portfolio Shares Vary with Age? Working Paper.

Andrade, E.B. and T.H. Ho. 2009. Gaming Emotions in Social Interactions. Journal of Consumer Research 36, 539-52.

Armstrong, M. 2008. Interactions between Competition and Consumer Policy. Competition Policy International 4, 97-147.

Arrow, K.J. 1974. Essays in the Theory of Risk Bearing. Amsterdam: North Holland.

Ashraf, N., Karlan, D. and W. Yin. 2006. Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines. Quarterly Journal of Economics 121, 635-72.

Ausubel, L. M. 1999. Adverse Selection in the Credit Card Market. Mimeo.

Bacharach, M., Guerra, G, and D.J. Zizzo. 2007. The Self-Fulfilling Property of Trust: An Experimental Study. Theory and Decision 63, 349-88.

Bachman, K. and T. Hens. 2008. Behavioural Finance for Private Banking. Wiley Finance.

Bagwell, K. 2007. The Economic Analysis of Advertising. Handbook of Industrial Organization 3: 1701-1844.

Barber, B. M., Lee, Y., Liu, Y. and T. Odean. 2009. Just How Much Do Individual Investors Lose by Trading? Review of Financial Studies 22, 609-32.

Barber, B M. and T. Odean. 2001. Boys will be Boys: Gender, Overconfidence, and Common Stock Investment. Quarterly Journal of Economics 141, 261-92.

Barber, B., Odean, T. and L. Zheng. 2005. Out of Sight, Out of Mind: The Effects of Expenses on Mutual Fund Flows. Journal of Business 78, 2095-119.

Barber, B. M. and T. Odean. 2008. All That Glitters: The Effect of Attention and News on the Buying Behavior of Individual and Institutional Investors. Review of Financial Studies 21, 785-818.

Barberis, N., Huang M. and RH Thaler. 2006. Individual Preferences, Monetary Gambles, and Stock Market Participation: A Case for Narrow Framing, American Economic Review, 96, 1069-90.

Barberis, N. and R. H. Thaler. 2003. A Survey of Behavioral Finance, in George Constantinides, Milton Harris, Rene Stulz, eds., Handbook of the Economics of Finance, (Amsterdam: North-Holland).

Barberis, N. and W. Xiong. 2009. What Drives the Disposition Effect? An Analysis of a Long-Standing Preference-Based Explanation. Journal of Finance 64, 751-84.

Bar-Gill, O. 2008. The Behavioral Economics of Consumer Contracts. Minnesota Law Review 92, 749-802.

Barr, M.S., Mullainathan, S. and E. Shafir. 2008. Behaviorally Informed Financial Services Regulation. New America Foundation.

Barras, L., Scaillet, O. and R. Wermers. 2009. False Discoveries in Mutual Fund Performance. Measuring Luck in Estimated Alphas. Journal of Finance 65, 179-216.

Battigalli, P. and M. Dufwenberg. 2009. Dynamic Psychological Games. Journal of Economic Theory 144, 1-35.

Benartzi, S. and R. H. Thaler. 1995. Myopic Loss Aversion and the Equity Premium Puzzle. Quarterly Journal of Economics 110, 73-92.

Benartzi, S. and R.H. Thaler. 2007. Heuristics and Biases in Retirement Savings Behavior. Journal of Economic Perspectives 21, 81-104.

Bergstresser, D., Chalmers J. and P. Tufano. 2009. Assessing the Costs and Benefits of Brokers in the Mutual Fund Industry. Review of Financial Studies 22, 4129-56.

Benartzi, S. 2001. Excessive Extrapolation and the Allocation of 401(k) Accounts to Company Stock. Journal of Finance 56, 1747-64.

Benartzi, S. and R. H. Thaler. 2001. Naïve Diversification Strategies in Defined Contribution Saving Plans. American Economic Review 91, 79-98.

Bertrand, M., Muallainathan, S. and E. Shafir. 2006. Behavioral Economics and Marketing in Aid of Decision-Making among the Poor. Journal of Public Policy and Marketing 25, 8-23.

Bertrand, M., Karlan, D.S., Mullainathan, S., Shafir, E. and J. Zinman. 2010. What's Advertising Content Worth? Evidence from a Consumer Credit Marketing Field Experiment. Quarterly Journal of Economics 125, 263-305.

Bilias, Y., D. Georgarakos and M. Haliassos. 2010. Portfolio Inertia and Stock Market Fluctuations, Journal of Money, Credit, and Banking 42, 715-42.

Bogan, V. 2008. Stock Market Participation and the Internet, Journal of Financial and Quantitative Analysis 43, 191-211.

Bohnet, I. and R. Zeckhauser. 2004. Trust, Risk and Betrayal. Journal of Economic Behavior and Organization 55, 467-84.

Bolton, P., Freixas X. and J. Shapiro. 2007. Conflicts of Interest, Information Provision, and Competition in Banking. Journal of Financial Economics 85, 297-330.

Brinson, G. P., Singer, B. D. and G. L. Beebower. 1991. Determinants of Portfolio Performance II: An Update. The Financial Analysts Journal 47, 40-8.

Broadbent, D. E. 1958. Perception and Communication. New York: Pergamon Press, NY.

Buehler, R., Griffin D. and R. Michael. 1994. Exploring the 'Planning Fallacy': Why People Underestimate Their Task Completion Times. Journal of Personality and Social Psychology 67, 366-81.

Cain, D., Loewenstein G. and D. Moore. 2005. The Dirt on Coming Clean: Perverse Effects of Disclosing Conflicts of Interest. Journal of Legal Studies 34, 1-25.

Calvet L. E. , Campbell, J. Y. and P. Sodini. 2009. Measuring the Financial Sophistication of Households. American Economic Review 99, 393-98.

Camerer C.F. 1989. Does the Basketball Market Believe in the `Hot Hand'? American Economic Review 79, 1257-61.

Camerer, C. and E. Fehr. 2006. When Does "Economic Man" Dominate Social Behavior? Science 311, 47-52.

Campbell, J.Y. 2006. Household Finance. Journal of Finance 61, 1553-1604.

Campbell, J.Y. and L. M. Viceira. 2002. Strategic Asset Allocation: Portfolio Choice for Long-Term Investors. Clarendon Lectures in Economics. Oxford: Oxford University Press.

Capon, N., Fitzsimons, G.J. and R.A. Prince. 1996. An Individual Level Analysis of the Mutual Fund Investment Decision. Journal of Financial Services Research 10, 59-82.

Carhart, M.M. 1997. On Persistence in Mutual Fund Performance. The Journal of Finance 52, 57-82.

Carlin, B.I. 2009. Strategic Price Complexity in Retail Financial Markets. Journal of Financial Economics 91, 278-87.

Carlin, B.I., Dorobantu, F., and S. Viswanathan. 2009. Public Trust, The Law, and Financial Investment. Journal of Financial Economics 92, 321-41.

Carroll , C. D. 2002. Portfolios of the Rich. in Household Portfolios: Theory and Evidence. MIT Press Cambridge, MA.

CFA Institute. 2009. European Union Member Poll on Retail Investment Products: Summary Report.

Chang, Y.T. and C. Waddams Price. 2008. Gain or Pain: Does Consumer Activity Reflect Utility Maximization. Mimeo.

Charness, G. and M. Rabin. 2002. Understanding Social Preferences with Simple Tests. Quarterly Journal of Economics 117, 817-69.

Charness, G. and M. Dufwenberg. 2006. Promises and Partnership. Econometrica 74, 1579-601.

Chen, J., Hong H. and J. Kubik. 2006. Outsourcing Mutual Fund Management: Firm Boundaries, Incentives, and Performance. University of Southern California, CA.

Choi, J.J., Laibson, D. and B.C. Madrian. 2009. Why Does the Law of One Price Fail? Choices Among Index Funds. Journal of Finance 59, 261-88.

Choi, J.J., Laibson, D., Madrian, B.C. and A. Metrick. 2009. Reinforcement Learning and Savings Behavior. Journal of Finance 64, 2515-34 .

Chui, A., Titman, S. and J. Wei. 2009. Individualism and Momentum around the World. Journal of Finance, forthcoming.

Christelis, D., Georgarakos D. and M. Haliassos. 2010. International Portfolio Differences: Economic Environment versus Household Characteristics. Working Paper.

Christelis, D., Jappelli T. and M. Padula 2010. Cognitive Ability and Portfolio Choice, European Economic Review 54, 18-38.

Christoffersen, S. and D. Musto. 2002. Demand Curves and the Pricing of Money Management. Review of Financial Studies 15, 1499-524.

Cialdini, R.B. 2001. Influence: Science and Practice. London: Allyn and Bacon.

Cialdini, R. B. and N. J. Goldstein. 2004. Social Influence: Compliance and Conformity. Annual Review of Psychology 55, 591-621.

Clark, G. and K. Strauss. 2008. Individual Pension-Related Risk Propensities: The Effect of Socio-Demographic Characteristics. Ageing and Society 28, 847-74.

Cole, S. and G. K. Shastry. 2009. Smart Money: The Effect of Education, Cognitive Ability, and Financial Literacy on Financial Market Participation. HBS Working Paper 09-071.

Collins, J.M. and O'Rourke C.M. 2009. Evaluating Financial Education and Counseling: A Review of the Literature. Mimeo.

Conquest Research Limited. 2004. Consumer Understanding of Financial Risk. FSA Consumer Research Report 33.

Coval, J.D. and T.J. Moskowitz. 1999. Home Bias at Home: Local Equity Preference in Domestic Portfolios. Journal of Finance 54, 2045-73.

Crawford, V. 2003. Lying for Strategic Advantage: Rational and Boundedly Rational Misrepresentation of Intentions. American Economic Review 93, 133-49.

Crawford, V. and J . Sobel. 1982. Strategic Information transmission. Econometrica 50, 1431-51.

DABank. 2004. Faszination Wertpapier: Fakten und Hintergründe zum Anlegerverhalten in Deutschland, München.

Davis, S. and P. Willen. 2000. Occupation-Level Income Shocks and Asset Returns: Their Covariance and Implications for Portfolio Choice, NBER Working Paper No. 7905.

DellsVigna, S. 2009. Psychology and Economics: Evidence from The Field. Journal of Economic Literature 47, 315-72.

DellsVigna, S. and M. Gentzkow. 2009. Persuasion: Empirical Evidence. Mimeo.

DellaVigna, S. and U. Malmendier. 2004. Contract Design and Self-Control: Theory and Evidence. Quarterly Journal of Economics 119, 353-402.

DellaVigna, S. and U. Malmendier. 2006. Paying Not to Go to the Gym. American Economic Review 96, 694-719.

DellaVigna, S. and J. Pollet. 2007. Investor Inattention and Friday Earnings Announcements. Journal of Finance 64, 709-49.

DeMarzo, P., Vayanos, D. and J. Zwiebel. 2003. Persuasion Bias, Social Influence, and Uni-Dimensional Opinions. Quarterly Journal of Economics 118, 909-68.

Diacon, S. 2004. Investment Risk Perceptions: Do Consumers and Advisors Agree? International Journal of Bank Marketing 22, 180-99.

Dominitz, J. and C.F. Manski. 2007. Expected Equity Returns and Portfolio Choice: Evidence from the Health and Retirement Study. Journal of the European Economic Association 5, 369-79.

Doney, P. M. and J. P. Cannon. 1997. An Examination of the Nature of Trust in Buyer-Seller Relationships. Journal of Marketing 61, 35-51.

Dorn, D. Choice with Too Many Options. Mimeo.

Dorn, D. and G. Huberman. 2005. Talk and Action: What Individual Investors Say and What They Do. Review of Finance 9, 437-81.

Dufwenberg, M. and G. Kirchsteiger. 2004. A Theory of Sequential Reciprocity. Games and Economic Behavior 47, 268-98.

DWP. 2006. Pensions and Pension Reform. Research Report 357.

Edelen, R., Evans R. and G. Kadelec. 2008. What Do Soft Dollars Buy? Performance, Expense Shifting, Agency Costs. Mimeo.

Eliaz, K. and R. Spiegler. 2006. Contracting with Diversely Naive Agents. Review of Economic Studies 73, 689-714.

Ellison, G. 2006. Bounded Rationality in Industrial Organization. in Blundell, Newey and Persson (eds.). Advances in Economics and Econometrics: Theory and Applications. Ninth World Congress. Cambridge: Cambridge University Press.

Ellison, G. and S. Fisher Ellison. 2004. Search, Obfuscation and Price Elasticities on the Internet. Mimeo.

Ellsberg, D. 1961. Risk, Ambiguity, and the Savage Axioms. Quarterly Journal of Economics 75, 643-69.

Elton, E.J., Gruber, M.J. and C.R. Blake. 1996. The Persistency of Risk-Adjusted Mutual Fund Performance. Journal of Business 69, 133-57.

Engelhardt, G. V. 2003. Nominal Loss Aversion, Housing Equity Constraints and Household Mobility: Evidence from the United States. Journal of Urban Economics 53, 171-95.

Epstein, R.A. 2006. Behavioral Economics: Human Errors and Market Corrections. Chicago Law Review 73.

Erev, I. Ert, E. and E. Yechiam. 2007. Loss Aversion, Diminishing Sensitivity, and the Effect of Experience on Repeated Decisions. Working Paper, Technion University.

Eyster, E. and M. Rabin. 2009. Rational and Naïve Herding. Mimeo.

Farrell J. and P. Klemperer. 2006. Coordination and Lock-in Competition with Switching Costs and Network Effects. Mimeo.

Fehr, E. and S. Gächter. 2000. Fairness and Retaliation: The Economics of Reciprocity. Journal of Economic Perspectives 14, 159-81.

Fehr, E. and K. M. Schmidt. 1999. A Theory of Fairness, Competition, and Cooperation. Quarterly Journal of Economics 114, 817–68.

Feng, L. and M.S. Seasholes. 2005. Do Investor Sophistication and Trading Experience Eliminate Behavioral Biases in Financial Markets? Review of Finance 9, 305-51.

Finucane, M.L., Alhakami, A., Slovic, P. and S.M. Johnson. 2000. The Affect Heuristic in Judgments of Risks and Benefits. Journal of Behavioral Decision-making 13, 1-17.

Forsythe, R., Horowitz, J. L., Savin, N. E. and M. Sefton. 1994. Fairness in Simple Bargaining Experiments. Games and Economic Behavior 6, 347-69.

FSA. 2006. Levels of Financial Capability in the UK: Results of a Baseline Survey. Consumer Research Report 47.

FSA. 2008a. Evidence of Impact. An Overview of Financial Education Evaluations. Consumer Research 68.

FSA. 2008b. Financial Capability: A Behavioural Economics Perspective. Consumer Research 69.

FSA. 2008c. Consumer Purchasing and Outcomes Survey. Consumer Research 76.

FSA. 2009. Mortgage Market Review. Discussion Paper 09/3.

FTC. 2007. Improving Consumer Mortgage Disclosures: An Empirical Assessment of Current and Prototype Disclosure Forms: A Bureau of Economics Staff Report (June 2007)

Gabaix, X. and D. Laibson. 2006. Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets. Quarterly Journal of Economics 121, 505-40.

Gallery, G. and N. Gallery. 2005. Paradox of Choice in a Mandatory Pension Savings System: Challenges for Australian Income Policy. Policy and Politics 33, 519-32.

Georgarakos, D. and R. Inderst. 2010. Trust in Financial Advice. Mimeo.

Giannetti, M. and Y. Koskinen. 2008. Investor Protection, Equity Returns, and Financial Globalization. Journal of Financial and Quantitative Analysis, forthcoming.

Gigerenzer, G. 1991. How To Make Cognitive Illusions Disappear: Beyond Heuristics and Biases. European Review of Social Psychology 2, 83-115.

Gigerenzer, G. 1996. On Narrow Norms and Vague Heuristics: A Reply to Kahneman and Tversky. Psychological Review 103, 592-96.

Gilbert, D. T., Gill, M. J. and T. D. Wilson. 2002. The Future Is Now: Temporal Correction in Affective Forecasting. Organizational Behavior and Human Decision Processes LXXXVIII, 430-44.

Gilbert, D. T., Pinel, E. C., Wilson, T. D., Blumberg, S. J. and T. P. Wheatley. 1998. Immune Neglect: A Source of Durability Bias in Affective Forecasting. Journal of Personality and Social Psychology 75, 617-38.

Gilovich, T., Vallone R. and A. Tversky. 1985. The Hot Hand in Basketball: on the Misperception of Random Sequences. Cognitive Psychology 17, 295-314.

Gneezy, U. 2005. Deception: The Role of Consequences. American Economic Review 95, 384-94.

Goetzmann, W.N. and A. Kumar. Why Do Individual Investors Hold Underdiversified Portfolios. Mimeo.

Goldstein, D.G., Johnson, E.J. and W.F. Sharpe. 2008. Choosing Outcomes versus Choosing Products: Consumer-Focused Retirement Investment Advice. Journal of Consumer Research 35, 440-55.

Goyal, A. 2004. Demographics, Stock Market Flows, and Stock Returns. Journal of Financial and Quantitative Analysis 39, 115-142.

Grable, J. 2000. Financial Risk Tolerance and Additional Factors that Affect Risk Taking in Everyday Money Matters. Journal of Business and Psychology 14, 625-30.

Green, R., Hollifield, B. and N. Schürhoff. 2007. Dealer Intermediation and Price Behavior in the Aftermarket for New Bond Issues. Journal of Financial Economics 86, 643-82.

Gruber, M.J. 1996. Another Puzzle: The Growth in Actively Managed Mutual Funds. Journal of Finance 51, 783-810.

Guiso , L. and T. Jappelli. 2005. Awareness and Stock Market Participation. Review of Finance 9, 537-67.

Guiso, L., M. Haliassos and T. Jappelli. 2001. Household Portfolios. Cambridge, MA: MIT Press.

Guiso, L., M. Haliassos and T. Jappelli. 2002. Stockholding in Europe: Where Do We Stand and Where Do We Go? Economic Policy, April 2003, 117-64.

Guiso, L., Sapienza, P. and L. Zingales. 2008. Trusting the Stock Market. Journal of Finance 63, 2557-2600.

Hackethal, A., Inderst R. and S. Meyer. 2009. The Hidden Price of Financial Advice. Mimeo.

Haliassos, M. and C. C. Bertaut. 1995. Why Do So Few Hold Stocks? The Economic Journal 105, 1110-29.

Haliassos, M. and A. Michaelides. 2003. Portfolio Choice and Liquidity Constraints. International Economic Review 44, 143-78.

Hertwig, R. and A. Ortman. The Cognitive Illusion Controversy: A Methodological Debate in Disguise That Matters for Economists. in R. Zwick and A. Rapoport (eds.) "Experimental Business Research", Vol III, 113-130.

Heider, F. 1958. The Psychology of Interpersonal Relations. New York: Wiley.

Hirshleifer, D., Lim, S. S. and S. H. Teoh. 2009. Driven to Distraction: Extraneous Events and Underreaction to Earnings News. Journal of Finance 64, 2289-2325.

Ho, T.H., Lim, N. and C. Camerer. 2006. Modeling the Psychology of Consumer and Firm Behavior with Behavioral Economics. Journal of Marketing Research 43, 307-31.

Hong, H., Kubik, J.D. and J.C. Stein. 2004. Social Interaction and Stock-Market Participation. Journal of Finance 59, 137-176.

Hong, H., Scheinkman J. and W. Xiong. 2008. Advisors and Asset Prices: A Model of the Origins of Bubbles. Journal of Financial Economics 89, 268-87.

Hortacsu, A. and C. Syverson. 2004. Product Differentiation, Search Costs, and Competition in the Mutual Fund Industry: A Case Study of S&P Index Funds. Quarterly Journal of Economics 119, 403-56.

Hossain, T. and J. Morgan. 2006. Plus Shipping and Handling: Revenue (Non)Equivalence in Field Experiments on eBay. Advances in Economic Analysis and Policy 6(2).

Huberman, G. 2001. Familiarity Breeds Investment. Review of Financial Studies 14, 659-80.

Huberman, G. and W. Jiang. 2004. The 1/N Heuristic in 401(k) Plans. EFA 2004 Maastricht Meetings Paper No. 2036.

Huberman, G. and W. Jiang. 2006. Offering vs. Choice by 401(K) Plan Participants: Equity Exposure and Number of Funds. Journal of Finance 61, 763-801.

Huhmann, B.A. and S. McQuitty. 2009. A Model of Consumer Financial Numeracy. International Journal of Bank Marketing 27, 270-93.

Ikovic, Z. and S. Weisbenner. 2005. Local Does as Local Is: Information Content of the Geography of Individual Investors' Common Stock Investments. Journal of Finance 60, 267-306.

Inderst, R., and M. Ottaviani. 2009a. Misselling through Agents. American Economic Review 99, 883-908.

Inderst, R. and M. Ottaviani. 2009b. How (Not) to Pay for Financial Advice. Mimeo.

IFF Research. 2007. Investment Risk Rating: Consumer Attitudes Towards Risk. Financial Services Consumer Panel.

Iyengar, S. and M. Lepper. 2000. When Choice is Demotivating: Can One Desire Too Much of a Good Thing? Journal of Personality and Social Psychology 79, 995-1006.

Jacobsen, B., Lee J.B. and W. Marquering. 2008. Are Men More Optimistic. Mimeo.

Johnson E.J. 2006. Things That Go Bump in the Mind: How Behavioral Economics Could Invigorate Marketing. Journal of Marketing Research 43, 337-40.

Johnson E.J., Gaechter S. and A. Herrmann. 2006. Exploring the Nature of Loss Aversion. IZA Discussion Paper 2015.

Johnson E.J, Moe W.W., Fader, P.S., Bellman, S. and G.L. Lohse. 2004. On the Depth and Dynamics of Online Search Behavior. Management Science 50, 299-308.

Kahneman, D and A. Tversky. 1974. Judgment under Uncertainty: Heuristics and Biases. Science 185, 1124-31.

Kahneman, D. and A. Tversky. 1979. Prospect Theory: An Analysis of Decision under Risk. Econometrica 4, 263-92.

Kahneman, D., Knetsch, J. L. and Thaler, R. H. 1990. Experimental Tests of the Endowment Effect and the Coase Theorem. Journal of Political Economy 98, 1325-1348.

Kamenica, E. and M.A. Gentzkow. 2009. Bayesian Persuasion. Mimeo.

Kawagoe, T. and H. Takizawa. 2005. Why Lying Pays: Truth Bias in the Communication with Conflicting Interests. Mimeo.

Kane, A. 2008. The Scottish Widows' UK Pension Report. Edinburgh.

Kartik, N., Ottaviani, M. and F. Squintani. 2007. Credulity, Lies, and Costly Talk. Journal of Economic Theory 134, 93-116.

Keswani, A. and D. Stolin. 2008. Which Money is Smart? Mutual Fund Buys and Sells of Individual and Institutional Investors. The Journal of Finance 63, 85-118.

Kosowski, R., Timmermann, A., Wermers, R. and H.A. White. 2006. Can Mutual Fund "Stars" Really Pick Stocks? New Evidence from a Bootstrap Analysis. Journal of Finance 61, 2551-95.

Kruger, J. 1999. Lake Wobegon Be Gone! The 'Below-Average Effect' and the Egocentric Nature of Comparative Ability Judgements. Journal of Personality and Social Psychology 77, 221-32.

Kumaer, A. and C.M. Lee. 2006. Retail Investor Sentiment and Return Co-Movements. Journal of Finance 61, 2451-86.

Lacko, J. and J. Pappalardo. 2007. Improving Consumer Mortgage Disclosures: An Empirical Assessment of Current and Prototype Disclosure Forms. Federal Trade Commission Bureau of Economics Staff Report.

Laibson, D. 1997. Golden Eggs and Hyperbolic Discounting. Quarterly Journal of Economics 112, 443-77.

Lambrecht, A., Seim, K. and B. Skiera. 2007. Does Uncertainty Matter? Consumer Behavior under Three-Part Tariff. Marketing Science 26, 698-710.

Larrick, R. P. 2004. Debiasing. In D. K. Koehler and N. Harvey (Eds.), Blackwell Handbook of Judgment and Decision-Making. New York: Blackwell Publishing.

Lee, Y. H. and U. Malmendier. The Bidder's Curse. American Economic Review, forthcoming.

Lepper, M.R., Green, D. and R.E. Nisbett. 1973. Undermining Children's Intrinsic Interest with Extrinsic Reward: A Test of the "Overjustification" Hypothesis. Journal of Personality and Social Psychology 28, 129-137.

Lewis, K.K. 1999. Trying to Explain Home Bias in Equities and Consumption. Journal of Economic Literature 37, 571-608.

Loewenstein, G. 1999. A Visceral Account of Addiction. In Elster, J. & Skog, O. J. (Eds.). Getting Hooked: Rationality and Addiction. Cambridge, England: Cambridge University Press, 235-64.

Loewenstein, G. 2000. Emotions in Economic Theory and Economic Behavior. American Economic Review: Papers and Proceedings 90, 426-32.

Loewenstein, G., O'Donoghue, T. and M. Rabin. 2003. Projection Bias in Predicting Future Utility. Quarterly Journal of Economics 118, 1209-48.

Lord, C., Ross L. and M. Lepper. 1979. Biased Assimilation and Attitude Polarization: the Effects of Prior Theories on Subsequently Considered Evidence. Journal of Personality and Social Psychology 37, 2098-2109.

Lusardi, A. and O.S. Mitchell. 2006. Financial Literacy and Planning: Implications for Retirement Wellbeing. Mimeo. Dartmouth College.

Lusardi, A., Mitchell, O. S. and Vilsa Curto. 2010. Financial Literacy among the Young: Evidence and Implications for Consumer Policy. Mimeo.

MacGregor, D.G., Slovic, P., Berry, M. and H.R. Evensky. 1999. Perception of Financial Risk: A Survey Study of Advisors and Planners. Journal of Financial Planning 12, 68-86.

Madrian, B.C. and Shea, D.F. 2001. The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior. Quarterly Journal of Economics 116, 1149-1187.

Malmendier, U., and D. Shanthikumar. 2007. Are Small Investors Naive About Incentives? Journal of Financial Economics 85, 457-89.

Malmendier, U. and G. Tate. 2005. CEO Overconfidence and Corporate Investment. Journal of Finance 60, 2661-2700.

Malmendier, U. and G. Tate. 2008. Who Makes Acquisitions? CEO Overconfidence and the Market's Reaction. Journal of Financial Economics 89, 20-43.

Mandell, L. 2006. Financial Literacy: Are We Improving? Results of the 2004 National JumpStart Survey. Washington D.C.

Markowitz, H. 1952. Portfolio Selection. Journal of Finance 7, 77-91.

McClure, S. M., Laibson, D., Loewenstein, G. and J. D. Cohen. 2004. Separate Neural Systems Value Immediate and Delayed Monetary Rewards. Science 306, 503-7.

Milgrom, P. and R. John. 1986. Relying on the Information of Interested Parties. RAND Journal of Economics 17, 18-32.

Miravete, E. 2006. The Doubtful Profitability of Foggy Pricing. Mimeo.

Mitchell, O.J., Poterba, J., Warshawsky, M. and J. Brown. 1999. New Evidence on the Money's Worth of Individual Annuities. American Economic Review 89, 1299-318.

Modigliani, F. 1986. Life Cycle, Individual Thrift, and the Wealth of Nations. American Economic Review 76, 297-313.

Moore, D. and P. Healy. 2008. The Trouble with Overconfidence. Psych. Review.

Moraga-Gonzalez J.L. and M.R. Wildenbeest. 2006. Maximum Likelihood Estimation of Search Costs. Mimeo.

Mullainathan, S., Schwartzstein, J. and A. Shelifer. 2008. Coarse Thinking and Persuasion. Quarterly Journal of Economics 123, 577-619.i

Nelson, P. 1970. Information and Consumer Behavior. Journal of Political Economy 78, 311-29.

Odean, T. 1998. Are Investors Reluctant to Realize Their Losses? Journal of Finance 53, 1775-98.

Odean, T. 1999. Do Investors Trade Too Much? American Economic Review 89, 1279-98.

O'Donoghue, T. and M. Rabin. 1999. Doing It Now or Later. American Economic Review 89, 103-24.

OFT. 2004. Psychology of Buying and Selling in the Home. Annexe F of the "Doorstep Selling Report".

Pohl, R. F. and W. Hell. 1996. No Reduction in Hindsight Bias after Complete Information and Repeated Testing. Organizational Behavior and Human Decision Processes 67, 49-58.

Rabin, M. 1993. Incorporating Fairness into Game Theory and Economics. American Economic Review 83, 1281-1302.

Rabin, M. 2002. Inference by Believers in the Law of Small Numbers. Quarterly Journal of Economics 117, 775-816.

Rabin, M. and D. Vayanos. 2010. The Gambler's and Hot-Hand Fallacies: Theory and Applications. Review of Economic Studies 77, 730-78.

PFRC. 2009. Individual Investment Behaviour: A Brief Review of Research. Mimeo.

Polkovnichenko, V. 2005. Household Portfolio Diversification: A Case for Rank-Dependent Preferences. Review of Financial Studies 18, 1467.

Plott, C. and K. Zeiler. 2010. Exchange Asymmetries Incorrectly Interpreted as Evidence of Endowment Effect Theory and Prospect Theory: A Reply to Isoni, Loomes and Sugden. Forthcoming American Economic Review.

Prelec, D. 2006. Rebuilding the Boat While Staying Afloat: The Modeling Challenge for Behavioral Economics. Journal of Marketing Research 43, 332-36.

Ross, I. and R.E. Nisbett. 1991. The Person and the Situation: Perspectives of Social Psychology. New York: McGraw-Hill.

Roszkowski, M.J., Davey, G. and J.E. Grable. 2005. Insights from Psychology and Psychometrics on Measuring Risk Tolerance. Journal of Financial Planning 4, 66-77.

Roy, K.S. and V. Shekhar. 2010. Dimensional Hierarchy of Trustworthiness of Financial Service Providers. International Journal of Bank Marketing 28, 47-64.

Schotter, A. 2003. Decision-Making with Naïve Advice. American Economic Review: Papers and Proceedings 93, 196-201.

Seru, A., Shumway, T. and N. Stoffman. 2009. Learning by Trading. Mimeo

Sharpe, W.F. 1966. Mutual Fund Performance. Journal of Business 39, 119-138.

Shefrin, H. 2002. Beyond Greed and Fear: Understanding Behavioural Finance and the Psychology of Investing. Oxford: Oxford University Press.

Shefrin, H. and M. Statman. 1985. The Disposition to Sell Winners too Early and Ride Losers too Long. Journal of Finance 40, 777-90.

Slovic, P., Finucane, M., Peters, E. and D.G. MacGregor. 2002. Rational Actors or Rational Fools: Implications of the Affect Heuristic for Behavioral Economics. Journal of Socio-Economics 31, 329-42.

Stigler, G.J. 1961. The Economics of Information. Journal of Political Economy 69, 213-25.

Stigler, G.J. and G.S. Becker. 1977. De Gustibus Non Est Disputandum. American Economic Review 67, 76-90.

Strotz, R.H. 1956. Myopia and Inconsistency in Dynamic Utility Maximization, Review of Economic Studies 23, 165-80.

Stoughton, N., Wu Y. and J. Zechner. 2008. Intermediated Investment Management. Mimeo.

Svenson, O. 1981. Are We All Less Risky and More Skilful than Our Fellow Drivers? Acta Psycholigica 47, 143-48.

Tapia, W. and J. Yermo. 2007. Implications of Behavioural Economics for Mandatory Individual Account Pension Systems. OECD Working Papers on Insurance and Private Pensions, No. 11, OECD publishing, © OECD. doi:10.1787/103002825851.

Telser, L.G. 1964. Advertising and competition. Journal of Political Economy 72, 537-62.

Thaler, R. 1985. Mental Accounting and Consumer Choice. Marketing Science 4, 199-214.

Tversky, A. and D. Kahneman. 1981. The Framing of Decisions and the Psychology of Choice. Science 211, 453-58.

Van Rooij, M., Alessie, R. and A. Lusardi. 2007. "Financial Literacy and Stock Market Participation," Mimeo.

Vissing Jorgensen, A. 2002. Towards an Explanation of Household Portfolio Choice Heterogeneity: Nonfinancial Income and Participation Cost Structure. Working Paper.

Vlaev, I., Chater, N. and N. Stewart. 2009. Dimensionality of Risk Perception: Factors affecting Consumer Understanding and Evaluation of Financial Risk. Journal of Behavioral Finance 10, 158-181.

Weber, M. and F. Welfens. 2008. Splitting the Disposition Effect: Asymmetric Reactions Towards "Selling Winners" and "Holding Losers". Mimeo

Williamson O. E. 1993. Calculativeness, Trust and Economic Organization. Journal of Law and Economics 36, 453-86.

PART 1: REVIEW

CHAPTER III

RETAIL INVESTMENT MARKET REVIEW

Retail Investment Services: Retail Investment Market Review[104]

1 General Remarks

1.1 Objectives

139. In recent years, several factors - such as an increase in household wealth as well as the greater need for households to make their own provisions for retirement savings - have imposed on households a greater responsibility to make their own saving and investment decisions and thereby actively manage their personal finances. At the same time, the marketplace for retail investors has become vastly more sophisticated. In particular, financial markets have experienced a shift toward greater international integration and greater liberalisation.[105] However, recent empirical evidence from surveys as well as actual investment decisions suggests that cross-border investments are rare and investment product sets differ substantially between countries. Further, households seem to lack relevant information on products and may even be subject to "behavioural biases" in their decisions. These aspects have been discussed in detail in the previous chapter "Retail Investment Services: Insights from Behavioural Economics".

140. In this chapter, we provide an overview of some of the known facts about retail investors' behaviour as well as the market for Retail Investment Services (RIS) in several European countries. We aim to provide an up-to-date overview of the portfolio compositions of households and the prevalent distribution channels. This research relies entirely on secondary data analysis. For this purpose, we have used native speakers to gather and review publically available data in each country, e.g. from central banks or trade associations. In addition, we were able to use comparative studies conducted by other researchers as well as international bodies such as the OECD. In more detail, our questions and objectives for this study are as follows:

    i. What are the assets to which retail investors allocate their savings? Are there any national specificities, e.g., with regards to the type of products that are offered and bought?

[104] Primary author of this chapter: Roman Inderst

[105] E.g., Guiso et al. (2002).

ii. What are the sales channels, e.g., banks or insurance companies, which retail investors use?

iii. What sales and marketing strategies and tactics are employed by RIS providers?

1.2 Research Strategy and Limitations

141. Our study covers the following twelve countries: Austria, the Czech Republic, France, Germany, Italy, Latvia, the Netherlands, Poland, Romania, Spain, Sweden and the UK. While international institutions have collected aggregate information on households' financial wealth, mainly from national central banks and statistical bodies, a consistent and comparable break-down of household portfolios along detailed product characteristics as well as any representative information on how products are distributed is lacking. In order to fill this gap we asked native speakers from the respective countries to search the web in their native languages to gather information. In order to facilitate the data gathering process and to ensure comparability researchers were asked to complete a standardised data-input scheme. This first asked the researchers to describe the broad market structure in the respective countries. It is well known that in some countries like Germany banks play the dominant role in the marketing of financial products to retail investors, whereas in the UK independent financial advisors capture a large share of the market. It then focused on the sales channels prevalent in the respective countries, and the sales and marketing strategies employed by RIS providers.

142. In almost all cases, our native-speaking researchers were not able to locate *any* representative information on sales channels and sales practices. While this could be due to the fact that for each country we only allocated limited resources (time) and that most native speakers were only experts in financial economics and not in sales of financial products, we strongly believe it is more likely that such information is simply not publicly available. However, we have additionally conducted an illustrative (i.e. small-scale and non-representative) survey of RIS marketing materials - posters, websites, and product literature in eight Member States, and conducted a content analysis of this material in order to quantify the typical characteristics of such material, in terms of the main messages conveyed to potential investors.

143. In particular, with regard to sales practices (and our problems in this area), the lack of empirical data suggests a need to explore two different avenues in further studies. The first avenue would be that of a co-ordinated collection of available secondary data from official sources, such as consumer protection agencies and financial regulators. To generate valid results, this would need official backing from the EC. Another avenue would be to start collecting primary data, in particular on "soft" information relating to sales practices. In line with academic work in the intersection of law and economics, one possibility could be to set up a panel of (legal) experts in various EU countries, possibly located in official institutions, and conduct structured interviews.

1.3 Organisation

144. The following review begins by describing the EU market context with aggregate information on households' savings and general investment patterns. While newspapers and official reports frequently focus only on "headline" figures, such as savings rates, these only provide a very incomplete picture. Likewise, focusing only on households' holding of financial assets risks ignoring the great differences that exist between European countries with respect to their holdings of other assets such as housing. In a second part we then provide (to the extent that this is available) detailed information about households' financial investments and prevalent sales channels in each of the twelve European countries covered in this study. Finally, we provide an illustrative survey of RIS marketing materials from eight Member States, describing the content in terms of the main messages and features. We also give some specific examples taken from the UK that illustrate how marketing messages might take advantage of some of the behavioural biases discussed in the previous chapter.

145. This report is complemented by an appendix containing a detailed breakdown of household portfolios across the twelve countries.

2 Background Information

146. In this first part of the review, we present an overview of the main components of European households' financial balance sheets, broken down into the three components of Pensions and Retirement Savings, General Saving and Borrowing, and Housing.

2.1 Pensions and Retirement Savings

147. In recent years, the pension and retirement policies in many European countries have been profoundly reshaped, mainly in response to an increasingly ageing population. In the last fifty years, the life expectancy of households has increased substantially. For instance, women's life expectancy was about 70 years in 1960, while it is 81 years in 2005. Similarly, the life expectancy at old age has also increased substantially (OECD, 2009).

148. For a large number of households, pension wealth forms a substantial part of their total wealth. It thus provides an essential piece of background information to understand differences in investment behaviour across countries (Table 3.1).

	Average Pension Wealth		Average Earnings
	Men (€ 000s)	Women (€ 000s)	(€ 000s)
Germany	197.9	234.6	42.4
France	268.6	310.8	31.0
UK	132.6	152.3	42.5
Sweden	308.0	353.6	29.9
Spain	339.3	395.8	21.2
Italy	282.9	305.3	24.6
Austria	322.3	373.3	36.7
Poland	240.0	259.8	6.4
Czech Republic	240.0	282.9	7.0
Netherlands	466.5	545.4	39.7
OECD Average	319.6	323.7	28.6

Source**:** Pensions at a Glance: Retirement Income Systems in the OECD Countries, OECD, 2009.

Table 3.1 – Pension wealth and income

149. The first and second columns in the table display the weighted average pension wealth for men and women, respectively.[106] The highest values are observed in the Netherlands with weighted averages of €466,480 and €545,360 for men and women, respectively. On the other hand, the weighted averages for men and women in the UK account for €132,600 and €152,320, which represents the lowest weighted-average pension wealth in the sample. These figures must be seen also in relation to the average earnings of households in each country (the last column in the table).

2.2 General Saving and Borrowing

	Gross Household Saving Rate Share of gross saving to gross disposable income	Net Lending (+) or Borrowing (-) Percentages of gross disposable income
Germany	16.7	8.20
France	15.6	5.2
UK	2.2	-6.3
Sweden	12	5.9
Spain	10.2	-4.2
Italy	14.2	4.5
Austria	16.3	8.4
Poland	8.8	1.7
Czech Republic	8.8	-0.1
Netherlands	13.4	-1.4
EU Average (EU27)	10.8	0.9

Source: Eurostat and OECD for the year 2007.

Table 3.2 – Saving and borrowing

[106] "This measure combines data on the distribution of earnings with calculations of pension entitlements. This measure can be regarded as the most comprehensive measure of the scale of the pension promise made to today's workers. In other words, these numbers represent the present value of the transfers that societies are promising on average to future retirees under the current pension system rules." (*Pensions at a Glance: Retirement Income Systems in the OECD countries*, p.130. OECD, 2009).

150. Table 3.2 displays information on gross saving rates as well as the net lending and borrowing of households in the selected European countries.[107] German households have the highest saving rate (16.7%) among the sampled countries, whereas UK households have the lowest rate (2.2%). There are clearly a number of factors which might contribute to these differences across countries such as income and wealth, credit facilities, and institutional factors such as differences in the social security system as well as cultural and social factors. Note also that the preceding figures represent "flows" and not "stocks", and do not take into account changes in the value of households' existing financial and non-financial assets, let alone changes in the value of their human capital. To the extent that such changes can be seen as being persistent, looking only at flow values provides a misleading picture of the health of households' total balance sheets.

151. The second column in the preceding table shows the aggregate borrowing activity of the household sector for the selected countries. As shown in the table, households are net lenders in the EU (0.9% of their gross disposable income). Austrian and German households have the highest net lending rates: 8.4% and 8.25, respectively. UK and Spanish households have the highest borrowing needs, with -6.3% and -4.1% of their gross disposable income.

152. A household's aggregate balance sheet consists not only of financial assets, including the discounted value of rights from pensions and insurances, but also wealth from other sources. For many households a large fraction of its net worth comes from other sources, most notably housing, business investments and human capital. We now discuss differences in households' investment in housing across the selected European countries (Table 3.3). Housing is a special good for households, providing both a flow of consumption services as well an investment.[108] Housing investments are highly illiquid and, because of related mortgages, highly leveraged in comparison to other assets.

---

[107] Gross household saving rates are 10.8% and 13.9% in the EU and in the Euro Area, respectively (Leetmaa et al., 2009).

[108] Although housing is a durable good, Cocco (2004), Zhang (2007) and some other authors, interestingly, consider housing as a financial asset.

2.3 Housing

	Share of Owner Occupied Dwellings	Ratio of Mortgage Debt to GDP
Germany	39%	47%
France	58%	22%
UK	68%	60%
Sweden	53%	58%
Spain	85%	32%
Italy	69%	10%
Austria	56%	30%
Poland	N/A	N/A
Czech Republic	N/A	N/A
Netherlands	53%	74%
EU Average (EU27)	61%	39%

Source: Structural Factors in the EU Housing Market, ECB, 2003.

Table 3.3 – Housing assets and mortgage debt

153. The share of owner occupied dwellings in Germany accounts for only 39% and represents the lowest share in this sample. In Spain the respective figure is 85%. The share of owner occupied dwellings in countries such as France (58%), Sweden (53%), Austria (56%) and the Netherlands (53%) are all below the EU average of 61%.[109]

154. From the perspective of a households' overall balance sheet it is also useful to look at mortgages, as they typically represent the most important credit facility that households use. As shown in the preceding table, Dutch households have the highest ratio of mortgage debt to GDP (74%), whereas Italian households have a ratio of mortgage debt to GDP of only 10%. More generally, the ratio of mortgage loans to GDP in the South

[109] Household ownership in these below-average countries is, however, sometimes considerably higher when looking only at older households. For instance, the numbers from the Survey of Health, Ageing, and Retirement in Europe (SHARE) for 2004 still show that older (i.e., above the age of 50) Spanish households have the highest homeownership rate with 87%, while the homeownership rate for Germany increases to 54%.

of Europe seems to be considerably lower than in the North. Given that this investment is not highly levered, the household has arguably less wealth at its disposal to invest in financial assets when relatively more of its wealth is tied up (early) in real estate.

3 Country Profiles

3.1 General Observations

155. In this part of the survey, we provide detailed country-by-country profiles of households' use of RIS. A further break-down of household portfolio data is contained in an appendix. The twelve countries chosen for the review cover the main degrees of variation within EU economies: large vs. small economies; highly-developed vs. less well-developed financial markets; and geographical locations covering North, South, Central and Eastern Europe.

156. Two particular features are common across all surveyed countries: the high share of relatively liquid and safe assets (e.g., demand deposits) and the relatively low share of risky investments in equity markets through direct stockholdings or equity mutual funds. As might be expected, the share of such liquid investments is higher when the (per capita) financial household wealth of a country is lower. Insurances and pension schemes play a particularly large role in many countries, though not in all. There are also several country-specific particularities. Some of them are related to specific products or mandatory pension schemes. For example, in Austria and Germany households hold relatively large investments in savings schemes operated by building societies. These schemes allow households to later obtain preferential mortgage interest rates. In Sweden the government actively distributes financial products under its "premium pension scheme".

157. One important caveat when comparing data from different countries is that aggregate information does not allow us to draw any conclusions regarding the deeper reasons for *why* households invest differently in different countries. As already mentioned, higher cash and liquid holdings may simply be explained by lower average income. One possible way forward would be to conduct a "counterfactual" analysis across countries. In principle, one can "generate" a standard household (same income, education etc.) and analyse how its investment behaviour compares across countries, fixing these other characteristics. Such an analysis is currently being undertaken by Christelis Dimitris,

Dimitris Georgarakos and Michalis Haliassos, albeit with US households as a benchmark for a comparison with several European countries. Through such a counterfactual analysis one can obtain a clearer picture of to what degree institutional characteristics can explain between-country differences.

158. Another caveat in the subsequent analysis is that the grouping of investment holdings into broad categories follows that used in the main statistics provided by central banks or statistical offices. These groupings often do not make much economic sense. For instance, extremely liquid and safe money market funds are aggregated with often risky and - given their sometimes high "front-end loads" - illiquid equity funds. Likewise, using standard terminology the "cash share" may contain long-term saving contracts from building societies. At this aggregate level the picture that we obtain does not, therefore, allow us to draw conclusions about households' willingness to take more or less risky positions or to hold more or less liquid assets. An alternative route consists of the use of (cross-country comparable) household panels, albeit these do not cover all of the considered countries and are sometimes restricted to particular (age) groups. The on-going first wave of the household finance study conducted by European central banks (and organised by the ECB) may soon provide a much better picture.

159. There is a final and important caveat: some of the findings obtained from various sources and reported below seem to be at odds with those from the academic literature on household finance, which often uses more detailed but less representative panels. One example is the high stock ownership in Spain. Furthermore, for many European countries researchers have documented a very low household participation rate in the equity market. Compared to this evidence, the levels of equity shares reported in what follows seem to be relatively high. One reason could be that the aggregate picture is distorted by large holdings of (unlisted) stock by relatively few but wealthy families. In other words, the percentage figures we have are not averages over households - in which case each household would be equally weighted - but ratios over aggregates. On the other hand, existing panel surveys typically do not provide a sufficiently complete picture of household wealth and its composition as they often ignore investments through insurances. We illustrate this in Section 5 with two examples (UK and Netherlands).

3.2 Investment Categories

160. To ensure investment products are comparable and to take into account the differing degree to which information was available across countries, we classify the products into six asset categories and display them as a percentage of households' gross financial assets.

"*Cash share*" contains mainly bank or postal deposits, but also includes cash, all kinds of saving accounts, deposit books and certificates of deposit, saving bonds and, particularly for Germany and Austria, building society savings.

"*Mutual Fund share*" contains equity funds, balanced funds, bond funds and other indirect investment vehicles. Stocks held by mutual funds are also incorporated.

"*Equities share*" covers shares of listed as well as unlisted companies, no matter whether these companies are foreign or national entities.

"*Fixed Income (FI) share*" contains bonds, irrespective of whether they are short- or long-term, or corporate, treasury or mortgage bonds. In line with the procedure applied for stocks, the FI share only consists of the direct bond holdings of private investors and excludes mutual funds and collective investment vehicles. Structured financial products ("Zertifikate") which are particularly popular in Germany and Austria are also included in the FI share, because from a legal point of view these products are obligations.

"*Insurance and pension share*" comprises predominantly life insurances and pension claims as well as wealth accumulated in other insurance policies.

"*Other*" consists of all other products.

4 Individual Country Profiles for Retail Investment Services (RIS)

4.1 Austria

161. The data on Austrian households comes from its Central Bank, the *Österreichische Nationalbank* (OeNB).

Asset Shares Relative to Total Financial Wealth

	2009	2008	2007	Average
Cash share	47.77%	48.84%	45.21%	47.28%
Mutual Fund share	8.35%	8.21%	10.95%	9.17%
Equities share	12.24%	12.10%	14.79%	13.05%
Fixed Income share	9.18%	9.60%	8.47%	9.09%
Insurance and pension share	17.98%	16.89%	16.65%	17.17%
Other	4.47%	4.35%	3.93%	4.25%

Table 3.4 – Household portfolios (Austria)

162. We should note once more that we now only consider financial assets. In Table 3.4 we have aggregated the portfolio holdings of households into six broad asset classes: cash (recall that this includes various savings and deposit accounts); mutual funds (MF); equities; fixed income such as government or company bonds (FI); insurances and pensions; and other holdings.

163. Total financial wealth has experienced relatively stable growth. Austrian financial accounts display an on-going shift from bonds to stock investments.[110] Notably, saving deposits - including passbook saving accounts ("Sparbuch"), other saving accounts and saving bonds as well as savings held with building societies - constitute more than 47% of the gross financial assets and total about 212,3 Mio € in the 3rd quarter of 2009.[111]

[110] See Andreasch (2006) or Hahn and Magerl (2006), for instance.

[111] Building loan contracts ("Bausparverträge") are contracts with a saving component at the beginning, before the accrual of a specific amount of money. The contract can be used then to provide the holder with a (cheaper) loan. Beer, Mooslechner, Schürz and Wagner (2006, pp. 97) report that about 93% of all Austrian households owned a savings account and 71% possessed a building loan contract.

Compared to other investment products, equity investment is not widely spread in Austria.[112]

4.2 Czech Republic

164. The Czech investment market developed, like that of the other Eastern European countries, after the end of the "Cold War". The following data is taken from the Financial Accounts Statistics of the Czech National Bank.

Asset Shares Relative to Total Financial Wealth

	2009	2008	2007	Average
Cash share	62.12%	61.52%	59.89%	61.17%
Mutual Fund share	5.95%	6.03%	8.99%	6.99%
Equities share	17.04%	16.51%	17.11%	16.89%
Fixed Income share	0.79%	0.62%	0.30%	0.57%
Insurance and pension share	14.02%	15.25%	13.65%	14.31%
Other	0.00%	0.00%	0.00%	0.00%

Table 3.5 – Household portfolios (Czech Republic)

165. Table 3.5 shows that Czech private households prefer to invest their wealth predominantly in low-return and safe assets like cash deposits. Note again that this product category also comprises the popular saving schemes of building societies (cf. the previous remarks on Austria).[113] Assets with a higher risk profile became more popular after the successful voucher privatisations and the subsequent development of the domestic financial market. The positive stock market performance and the search for higher yields increased the demand for equities.[114] Today, they account for 17% of total financial wealth. This proportion has remained relatively stable over the last three years. After pension fund reforms, private pensions became mandatory and increased the

[112] Fessler and Schürz (2008) note that equity holdings are concentrated mostly among wealthy, high income households.

[113] See also the comparative analysis of Ganelli (2006) and Unicredit Group (2005).

[114] See Unicredit Group (2005), Revoltella and Mucci (2005).

importance of insurance and pension funds, which today make up about 14% of the total portfolio volume.

4.3 France

166. The data on portfolio holdings for French households are gathered from *Banque de France* and *OECD*.[115]

Asset Shares Relative to Total Financial Wealth

	2009	2008	2007	Average
Cash share	32.16%	34.06%	30.56%	32.26%
Mutual Fund share	8.27%	8.53%	9.62%	8.81%
Equities share	13.42%	11.35%	16.87%	13.88%
Fixed Income share	1.98%	1.98%	1.82%	1.93%
Insurance and pension share	39.81%	39.68%	37.00%	38.83%
Other	4.35%	4.40%	4.14%	4.30%

Table 3.6 – Household portfolios (France)

167. The relative importance of insurances in France, clearly shown in Table 3.6, has been widely documented.[116] Marionnet (2006) notes that the fraction of financial assets held through life insurances has grown by almost 10 percentage points over the past ten years, with a similar reduction in cash and demand deposit holdings. The fall in cash and demand deposit holdings has been attributed both to higher savings for retirement and to financial innovations.[117] Finally, what seems surprising is that French households tend to hold a very low share of their financial wealth in fixed income securities. This is also below the European average.[118]

[115] The data on portfolio holdings of French households follows the harmonised methodology established by the 1995 European System of Integrated Economic Accounts (ESA 95). For detailed information, please see Quarterly financial accounts France, Banque de France and OECD Annual Statistics on Households' Assets, OECD, 2010.

[116] See Couleaud (2009).

[117] See Kalamboussis (200) and Marionnet (2006).

[118] For a comparison see Vandamme (2010).

4.4 Germany

168. We use data provided by the Bundesbank (the German Central Bank).[119] Financial institutions in Germany are obliged to report to the Bundesbank their portfolio holdings, as well as the portfolio holdings of their retail customers, on a quarterly basis.

Asset Shares Relative to Total Financial Wealth

	2009	2008	2007	Average
Cash share	N/A	39.41%	35.65%	37.53%
Mutual Fund share	N/A	11.27%	11.99%	11.63%
Equities share	N/A	7.80%	12.02%	9.91%
Fixed Income share	N/A	6.86%	7.71%	7.29%
Insurance and pension share	N/A	33.76%	31.70%	32.73%
Other	N/A	0.90%	0.94%	0.92%

Table 3.7 – Household portfolios (Germany)

169. Table 3.7 shows that cash holdings account for the highest fraction of financial assets across all German households. Though this share increased between 2007 and 2008, it is not representative of the historical trend. The cash holdings of German households have shrunk over the decades (accounting for more than half of all financial assets in the 70s). (Life) insurance contracts as well as investments in private pension schemes represent the second most important component of German household portfolios. Over the decades this has increased, possibly due to the increased importance of retirement savings.

[119] In particular, we gather data from the reports "Ergebnisse der Gesamtwirtschaftlichen Finanzrechnung für Deutschland" published on an annual basis by the Bundesbank.

Channels for Retail Financial Services

	Market share (percentage of total volume sold)				
	Equities	Funds	Bonds	Insurances	Other
Banks	65.83%	71.97%	72.99%	24.80%	-
Private banks	27.13%	19.26%	23.07%	-	-
State bank	3.45%	17.26%	3.49%	-	-
Savings banks	19.67%	7.81%	26.59%	-	-
Co-operative banks	15.57%	6.89%	19.84%	-	-
Capital investment companies	-	20.75%	-	-	-
Insurance companies	-	4.30%	-	34.10%	-
Independent financial advisors	-	11.60%	-	32.40%	
Other (direct banks etc)	34.17%	12.13%	27.01%	8.70%	-

Table 3.8 – Sales channels for retail financial services (Germany)

170. We also consider through which channels the respective investment products were bought (see Table 3.8).[120] In Germany, banks dominate the retail finance landscape in the sale of all asset classes except insurance. For instance, almost 66% of individual stocks, 72% of mutual funds and 72% of bonds sold to individual investors are distributed by banks. These numbers emphasise the dominant role of banks in the German financial system.

171. Insurances are primarily sold directly through insurance companies or through independent agents, who jointly account for more than two thirds of all sales. Further, we can see that although direct distribution channels have become popular in recent years, only 3% of insurance products are sold through remote sales channels such as telephone or email. In contrast, 97% of insurances are still sold through traditional face-to-face contact.

[120] Market share of financial institutions by asset category is proxied by the proportion of portfolio holdings in each financial institution relative to total asset holdings in Germany. This is again based on reports from the Bundesbank. The analysis is, however, comparable to similar statistics reported by a known trade body, the "Bundesverband Investment und Asset Management e.V." (BVI).

4.5 Italy

172. The structure of Italian household portfolios is well documented in the biannual Survey of Household Income and Wealth and often analysed by researchers (see e.g. Guiso and Jappelli, 2002; Guiso et al., 2003; Jappelli and Pistaferri, 2001). Table 3.9 summarises the development and composition of household portfolios taken from the Annual Report of the *Bank of Italy*.[121]

Asset Shares Relative to Total Financial Wealth

	2009	2008	2007	Average
Cash share	42.35%	42.35%	26.90%	37.20%
Mutual Fund share	4.85%	4.85%	5.03%	4.91%
Equities share	21.15%	21.15%	23.80%	22.04%
Fixed Income share	6.88%	6.88%	15.80%	9.86%
Insurance and pension share	16.68%	16.68%	16.50%	16.62%
Other	8.08%	8.08%	11.97%	9.38%

Table 3.9 – Household portfolios (Italy)

173. After a long period of low stock market participation due to capital controls, a small and illiquid Italian stock market and generous social security plans, households have recently become increasingly aware of the stock market (see Table 3.9). As in other European countries, this happened alongside a phase of privatisation of state-owned companies, which acted as a catalyst for households' interest in equities. Since 1998, when they accounted for 15% of Italian household portfolios, equities gained further in importance, currently being around 22%.[122] However, safe and liquid (cash and deposit) investments still comprise the most important part of household investments. As the third largest component, insurance and pension products experience a stable demand, at 17% of total household portfolio wealth.

[121] For detailed information; *Annual report, Bank of Italy, 2009, 2008.*

[122] For these trends compare also Guiso and Japelli (2000) and, more recently, Guiso, Haliassos and Jappelli (2003). However, these studies, based on panels, document a much lower percentage rate of household stock investment in (listed) firms (cf. the comments above).

4.6 Latvia

174. The portfolio composition for Latvian households is gathered from information provided by the *Bank of Latvia*.

Asset Shares Relative to Total Financial Wealth

	2009	2008	2007	Average
Cash share	N/A	76.57%	80.69%	78.63%
Mutual Fund share	N/A	5.75%	6.10%	5.93%
Equities share	N/A	2.50%	3.26%	2.88%
Fixed Income share	N/A	1.03%	1.93%	1.48%
Insurance and pension share	N/A	14.15%	8.02%	11.09%
Other	N/A	0.00%	0.00%	0.00%

Table 3.10 – Household portfolios (Latvia)

175. Latvian households tend to hold a very high fraction of their financial wealth in cash investments (see Table 3.10). In fact, the share of cash holdings in the Latvian portfolios is the highest fraction observed in this country survey. Insurance and pension wealth represents the second most important asset and accounts for 8% in 2007 and 14% in 2008. Despite the observed high growth of insurance and pension wealth, this fraction is still considerably lower than the corresponding figure from other countries in our survey. Finally, other asset classes including equities, fixed income securities and mutual funds are far less important.

4.7 Netherlands

176. The information in Table 3.11 is taken from the study conducted by CentER in cooperation with the Central Bank (*De Nederlandsche Bank*), which is provided quarterly for public use.[123] Information on deposits comes from the monetary reports of Dutch banks, while information on securities holdings is obtained from the reports of

[123] For detailed information, *DNB-en quête, De Nederlandsche Bank, 2009*.

Dutch securities depositories. Dutch household wealth accumulation and its asset composition have been stable for many years.[124]

Asset Shares Relative to Total Financial Wealth

	2009	2008	2007	Average
Cash share	26.46%	25.34%	26.02%	25.94%
Mutual Fund share	3.41%	2.72%	4.57%	3.56%
Equities share	1.84%	1.34%	2.69%	1.96%
Fixed Income share	1.78%	2.16%	2.39%	2.11%
Insurance and pension share	66.52%	68.44%	64.33%	66.43%
Other	0.00%	0.00%	0.00%	0.00%

Table 3.11 – Household portfolios (Netherlands)

177. The largest share of financial wealth in the Netherlands is allocated to employer-sponsored savings plans (see Table 3.11). Dutch households exhibit a low degree of risk taking, since only a very small fraction of wealth is held in mutual funds and equities (Hochguertel, 2003). The majority of the remaining financial wealth is held in cash investments.

[124] See Alessie, Hochgürtel, van Soest (2000) or Hochguertel (2003), amongst others.

4.8 Poland

178. The relevant data on the portfolio holdings of Polish households is obtained from the annual reports of the *National Bank of Poland*.[125]

Asset Shares Relative to Total Financial Wealth

	2009	2008	2007	Average
Cash share	55.06%	57.47%	43.09%	51.87%
Mutual Fund share	7.47%	7.59%	17.84%	10.97%
Equities share	5.77%	4.55%	9.10%	6.47%
Fixed Income share	2.04%	2.33%	1.80%	2.06%
Insurance and pension share	29.66%	28.06%	28.17%	28.63%
Other	0.00%	0.00%	0.00%	0.00%

Table 3.12 – Household portfolios (Poland)

179. Table 3.12 shows that Polish investors hold slightly more than half of their gross financial wealth in cash products, while insurance and pension wealth are second, with an average share of 29%. It is also worth noting that the share of cash products increased in 2008 by 14 percentage points (from 43% to 57%), one of the largest increases in any asset class share observed in the sampled countries.

[125] Analizy Online, (2.1.2010), (24.4.2009), (18.2.2008); "Oszczędności gospodarstw domowych " ("Households savings").

Channels for Retail Financial Services[126]

	Market share (percentage of total volume sold)				
	Equities	Funds	Bonds	Insurances	Other
Banks	56.82%	49.30%	61.28%	11.10%	71.00%
Insurance companies	-	5.00%	-	43.03%	-
Independent advisors	-	23.00%	-	-	-
Polish Post Office	-	-	-	3.27%	-
Investment companies	19.00%	16.00%	28.33%	-	19.33%
Brokerage forms	1.87%	-	0.75%	-	9.23%
Financial services companies		-	9.65%	39.35%	0.45%
Investment banks	4.38%	-	-	-	-
Media groups	-	-	-	3.25%	-
Other	-	6.70%	-	3.25%	-

Table 3.13 – Sales channels for retail financial services (Poland)

180. For Poland we also have information on sales channels (see Table 3.13). As shown in the table, banks have market leadership in the distribution of all asset classes except insurance products. In particular, banks distribute 56% of stocks, 50% of mutual funds, 62% of bonds and 71% of other investment products. The table also suggests that Polish financial service companies tend to specialise in insurance products. Their market share for insurances is almost 40%, only 3 percentage points less than the market share of insurance companies. Two other channels, namely media groups and Polish post offices, are also active in the insurance market, albeit their market shares are relatively small with 3.25% and 3.27%, respectively.

[126] The data on sales practices of Polish financial institutions is obtained from the reports of the Warsaw Stock Exchange and the Polish Statistics Office, as well as Muchcinski (2007).

4.9 Romania

181. The data on the aggregated portfolio holdings of Romanian households is gathered from the *National Bank of Rom*ania and various other sources.[127]

Asset Shares Relative to Total Financial Wealth

	2009	2008	2007	Average
Cash share	72.99%	78.88%	65.68%	72.52%
Mutual Fund share	1.98%	0.35%	0.44%	0.92%
Equities share	20.12%	15.07%	29.98%	21.72%
Fixed Income share	0.76%	1.29%	0.85%	0.97%
Insurance and pension share	4.15%	4.41%	3.05%	3.87%
Other	0.00%	0.00%	0.00%	0.00%

Table 3.14 – Household portfolios (Romania)

182. Cash holdings dominate the Romanian household portfolios with a 3-year average of 70.5% (see Table 3.14). This asset class is followed by equities with 21.7%. A key characteristic observed in the Romanian households is the low portfolio share of asset classes such as mutual funds and fixed income securities, as well as insurance and pension products.

[127] For detailed information, see *Bulletin, December 2009, National Bank of Romania (BNR)*; *CEE Households' Wealth and Debt Monitor, January 2010, UniCredit Group CEE Strategic Analysis*, *Asociatia Administratorilor de Fonduri din Romania (www.aaf.ro)*.

4.10 Spain

183. The information on the portfolio holdings of Spanish households is gathered from *Banco de Espana* and *OECD*.[128]

Asset Shares Relative to Total Financial Wealth

	2009	2008	2007	Average
Cash share	48.59%	47.14%	36.93%	44.22%
Mutual Fund share	9.17%	9.24%	11.29%	9.90%
Equities share	24.39%	26.08%	36.01%	28.83%
Fixed Income share	3.12%	2.91%	2.83%	2.95%
Insurance and pension share	14.73%	14.63%	12.94%	14.10%
Other	0.00%	0.00%	0.00%	0.00%

Table 3.15 – Household portfolios (Spain)

184. Table 3.15 shows that cash holdings represent the highest share in Spanish household portfolios with an average of 44%. Although the equity share fell by 12 percentage points from 36% in 2007 to 24% in 2009, this is still one of the highest equity ownership levels across the European countries in the sample. (See, however, our cautionary remarks in Section 3.1). Furthermore, Spanish households invest almost 10% of their financial wealth in mutual funds. Of mutual funds, bond mutual funds have the highest share. Finally, insurances and pensions account for about 14% of total financial wealth. This fraction is relatively low and is almost half of the average share observed across the twelve countries.

4.11 Sweden

185. There are a number of studies investigating the characteristics of Swedish household portfolios.[129] One important reason for this is the availability of rich data provided by

[128] Please see *Banco de Espana, Boletín economic, Evolución de la cartera financiera de los hogares en el contexto de la crisis, 2010*; *OECD Database: Households' financial and non-financial assets and liabilities, 2010*.

[129] For instance, Massa and Simonov (2003) or Calvet, Campbell, Sodini (2008, 2009).

the organisation *Statistics Sweden* (also known as the SCB).[130] The SCB has a parliamentary mandate to collect information at household level. For the following discussion, we also use data provided by the SCB.

Asset Shares Relative to Total Financial Wealth

	2009	2008	2007	Average
Cash share	23.63%	26.37%	21.75%	23.92%
Mutual Fund share	10.01%	9.10%	12.53%	10.55%
Equities share	13.03%	10.46%	14.98%	12.82%
Fixed Income share	4.15%	4.67%	4.29%	4.37%
Insurance and pension share	49.18%	49.40%	46.45%	48.34%
Other	0.00%	0.00%	0.00%	0.00%

Table 3.16 – Household portfolios (Sweden)

186. Insurances and pensions display an upward trend and account for almost half of the aggregated financial wealth in Sweden (see Table 3.16).[131] Cash investments are the second most important asset class with a 3-year average of almost 24%. Further, mutual funds holdings account for 10%, of which 70% is in equity mutual funds.

[130] Sparbarometer, Statistics Sweden (Statistiska Centralbyrån, 2010). For a detailed discussion of the features of the household data collected by the Swedish government, see Calvet, Campbell, Sodini (2008).

[131] As in many other industrialised countries, there is a transition in the Swedish pension system. Similar to the 401(k) plans in the US, Sweden has the so-called Premium Pension System. This is financed through an additional contribution from the employer equal to approximately 2.5% of the employee's gross annual income.

Channels for Retail Financial Services

	Market share (percentage of total volume sold)					
	Funds	Bonds	Traditional insurance	Unit-linked insurance	Deposits	Premium pensions
Banks	79.00%	49.80%	14.60%	51.60%	71.30%	26.70%
Insurance companies	1.90%	0.00%	82.90%	44.70%	6.60%	19.70%
Swedish government	0.00%	36.40%	0.00%	0.00%	0.00%	26.10%
Other	19.10%	13.80%	2.50%	3.70%	22.10%	27.50%

Table 3.17 – Sales channels for retail financial services (Sweden)

187. In Table 3.17 we turn to the sales channels used by Swedish households to buy the respective products.[132] Banks dominate the Swedish retail finance market. In particular, almost 80% of mutual funds, 50% of bonds, 52% of unit-linked insurance products, 72% of deposits, 15% traditional insurance products and 27% of the premium pension products are sold to retail customers by banks.

188. An interesting supply-side player in the Swedish retail market is the Swedish government. In particular, the government actively distributes 36% of bonds and 26% of premium pension funds sold to individual investors. Finally, it is worth mentioning that insurance companies lead the traditional insurance market with a market share of 83% in traditional insurance products.

4.12 United Kingdom

189. Several interesting aspects in the evolution of UK household portfolios stand out. Deregulation in the 80s caused rapid and radical changes in the ownership rates of different financial assets such as stocks and pension plans (Banks and Tanner, 2002). The second key aspect is the government's use of tax incentives to encourage savings

132 The data on sales practices of Swedish financial institutions is gathered from the SEB Saving Barameters report, which is a compilation of statistics from Statistics Sweden, Bank of Sweden, and Swedish Insurance Federation.

among households (Banks and Tanner, 2002). We use data from the *Office for National Statistics (ONS).*[133]

Asset Shares Relative to Total Financial Wealth

	2009	2008	2007	Average
Cash share	30.18%	33.60%	23.56%	29.11%
Mutual Fund share	2.62%	2.20%	4.51%	3.11%
Equities share	11.11%	9.34%	11.51%	10.65%
Fixed Income share	0.62%	1.00%	0.89%	0.84%
Insurance and pension share	55.47%	53.36%	59.53%	56.12%
Other	0.00%	0.00%	0.00%	0.00%

Table 3.18 – Household portfolios (United Kingdom)

190. UK households hold slightly more than half of their financial wealth in insurance and pension contracts (see Table 3.18). This share is almost twice as large as the average share in our country survey (56% vs. 25%). Cash holdings have the second highest share of aggregated household portfolios with a 3-year average of almost 29%. In 2008, the cash share increased by 10 percentage points while the insurance share shrunk by almost 6 percentage points compared to 2007. Accordingly, the fraction of directly-held stocks moved in the same period from 11.5% in 2007 to 9.34% in 2008. Another interesting aspect in the UK is the observed low share of fixed income investments. This share is surprisingly small and far below the average share in the sampled countries.

[133] *Office for National Statistics, Financial Statistics No 573, February 2010*.

Channels for Retail Financial Services[134]

	Market share (percentage of total volume sold)					
	Funds	Bonds	Insurances	Pensions	ISAs	Endowments
Banks and Building Societies	50.00%	50.00%	N/A	4.00%	49.00%	0.00%
Insurance companies	7.00%	7.00%	N/A	20.00%	7.70%	87.00%
Independent advisors and brokers	29.00%	29.00%	N/A	72.00%	24.00%	13.00%
Investment managers	13.20%	13.20%	N/A	1.40%	18.00%	0.00%
Other entities	0.90%	0.90%	N/A	2.20%	0.50%	0.00%

Table 3.19 – Sales channels for retail financial services (United Kingdom)

191. Table 3.19 shows that in the distribution of bonds and mutual funds (including investment and unit trusts), banks and building societies lead the market with a market share of almost 50% in each asset class. Similarly, almost half of the individual saving accounts (ISA) products are distributed by banks and building societies. ISAs are a tax-free scheme launched by the British government to encourage its citizens to save more. Another interesting feature of the British retail finance market is the important role of independent advisors. They have the highest market share in the distribution of pension products and they also have on average the second highest market share (after banks) in the distribution of other asset classes including funds, bonds and ISAs.

5 Remarks on Available Data and Comparability

192. With regard to household portfolios in European countries, different sources of information are available. In the previous section, this report relied on those figures that were, in our view, most comparable, comprehensive and up-to-date. However, other research papers and studies have used different datasets. We illustrate the possible pros

[134] Data on sales practices of UK financial institutions is obtained from Financial Services Authority, British Bankers Association, Investment Management Association and various other sources including the articles from Zeniya and Benham (cf. references for links).

and cons briefly by picking two countries that are particularly well-covered: The UK and the Netherlands.

5.1 The United Kingdom

193. A particularly frequently used source of data in the UK comes from the Financial Research Survey (FRS) which collects information on financial asset holdings and liabilities of almost 4,800 individuals on a monthly basis. We use here the paper by Banks and Smith (2000). Table 3.20 presents the portfolio composition of household portfolios from FRS grouped by wealth quartiles.

	I	II	III	IV	All
Cash	81.90%	84.90%	59.50%	52.00%	69.58%
Saving accounts	79.30%	81.10%	41.40%	25.50%	56.83%
Deposit accounts	2.60%	3.80%	18.10%	26.50%	12.75%
Bonds	13.10%	3.30%	6.10%	13.00%	8.87%
Government bonds	13.00%	3.10%	4.40%	5.50%	6.50%
Other bonds	0.10%	0.20%	1.70%	7.50%	2.38%
Equities	4.20%	10.30%	23.80%	14.20%	13.18%
Investment and unit trusts	0.70%	1.50%	10.50%	20.80%	8.38%

Source: Banks and Smith (2000), page 28.

Table 3.20 – Household portfolios by wealth quartiles (United Kingdom)

194. As Table 3.20 shows, cash investments dominate the financial portfolios of the surveyed UK households with an average share of 70%. Equity investments represent the second most important asset with a share of 13.18%. The share of bonds, which is an aggregate of government and other bonds, accounts for 8.87%. Finally, the shares of investment and unit trusts vary remarkably across different wealth quartiles and account, on average, for 8.38% of the financial wealth of the surveyed households.

195. The portfolio shares that we report and discuss in the previous section of this document do not coincide with these numbers. We employ aggregate statistics provided by the ONS whereas Banks and Smith (2000) use micro-level information from the FRS. As

noted by the authors, the FRS contains limited information on the ownership of financial products such as life insurance and pension policies, both of which, however, represent the most important asset class in our survey for UK households, with an average share of 56.28%. Similarly, FRS does not cover life insurance policies held in association with endowment mortgages. Another difference is that Banks and Smith (2000) only consider households with positive financial wealth. Finally, different observation periods are considered in the two surveys. The portfolio statistics employed in this report originate from 2007, 2008 and 2009, whereas the household data from Banks and Smith (2000) is from 1997 and 1998.

5.2 Household Portfolios in the Netherlands

196. An oft-used source of data for the Netherlands is the Dutch National Bank (DNB) household survey, which is organised by CentERdata. This survey is regarded as representative of the Dutch population with respect to a number of important demographic characteristics (Veld-Merkoulova, 2009). Table 3.21 presents the mean values and shares of assets from the 2004 wave.

	Mean in €	Portfolio shares
Checking accounts	€ 3,047.80	8.35%
Employer-sponsored savings plans	€ 1,918.65	5.26%
Savings or deposit accounts	€ 15,342.80	42.05%
Deposit books	€ 372.10	1.02%
Savings certificates	€ 104.10	0.29%
Single-premium annuity insurance policies	€ 4,372.60	11.98%
Savings or endowment insurance policies	€ 3,299.60	9.04%
Growth funds	€ 813.80	2.23%
Mutual funds	€ 3,572.10	9.79%
Bonds	€ 868.50	2.38%
Stocks	€ 2,708.80	7.42%
Options	€ 67.40	0.18%
Total	€ 36,488.25	100.00%

Table 3.21 – Household portfolios from DNB survey (Netherlands)

197. The reported portfolio shares differ markedly from the numbers that we report in the previous section. However, this discrepancy becomes much smaller once we realise that the DNB survey does not contain information on the cash value of life insurances and of those annuity insurances that are privately bought by households.

6 Illustrative Review of RIS Marketing

198. In this final part of the review, we present an illustrative survey and content analysis of RIS sales and marketing material from eight countries, along with discussion of some specific UK examples that illustrate how marketing material might take advantage of behavioural biases in the type of information supplied and the way it is presented.

6.1 Survey and Review Methodology

199. As with the prior review of secondary data on household finances, native-speaker researchers used publicly available sources (primarily internet search engines) to gather

contemporary examples of RIS marketing in the Czech Republic, France, Germany, Italy, Poland, Romania, Sweden and the UK. In each country, a small number of examples (typically 10-15) were collected and analysed. Wherever possible, the material was collected from a range of RIS providers (e.g. banks, building societies, insurance companies, fund managers, and brokers) and covered a range of retail investment products (e.g. funds, bonds, insurance, structured products) typical in that country. Given the small size of the sample and the difficulty of ensuring a representative and comparable search procedure across the different countries, this survey should be treated as illustrative only. Whilst the broad themes and messages are likely to be a good guide to the European RIS market, the detailed numbers are likely to be unreliable. Furthermore, given the data limitations, we have not broken down the results by product type or by country, as even indicative trends cannot be safely drawn out of such small samples of material.

200. After collating the marketing material, a simple content analysis of each example was conducted, in an attempt to form a quantitative description of the main characteristics of these texts. A coding frame was first created, that categorises the main product and market attributes that might be mentioned, as well as other related concepts. Specifically, this coding frame was used to record the inclusion (or exclusion) of information in eight categories: Risk (e.g. risk to capital, volatility of returns, exchange rate risk); Return (e.g. expected return, maximum return, capital guarantee); Investment (e.g. duration, minimum investment amount, regular payments); Tax; Costs (e.g. set-up fees, management charges, cancellation fees); Reference Points (e.g. past performance, competitor products, net expected AER); Reasons for Investment (e.g. growth, income, tax-efficiency); and Provider Attributes (e.g. expertise, efficiency, low cost). Each piece of marketing material was analysed within this coding frame, to capture the content of the message. In the case of product information, such as web pages and product descriptions, only the "headline" messages were analysed, so that details contained in the small print and requiring detailed reading to discover were excluded from our definition of "marketing".

6.2 Content Analysis

201. In total, 124 examples of RIS marketing materials were analysed, coding for the presence or absence of 40 pieces of information in the eight categories described above,

and the results are summarised in Figure 3.1. The typical marketing material contains nine or ten pieces of information (*M* = 9.4, *SD* = 5.4) covering four to five of the eight categories of information (*M* = 4.4, *SD* = 1.6). The most frequently-mentioned category of information was Reasons for Investment (91% of examples), followed by Provider Attributes (71%). The least frequently mentioned categories of information were Tax (19%), Costs (39%) and Reference Points (46%).

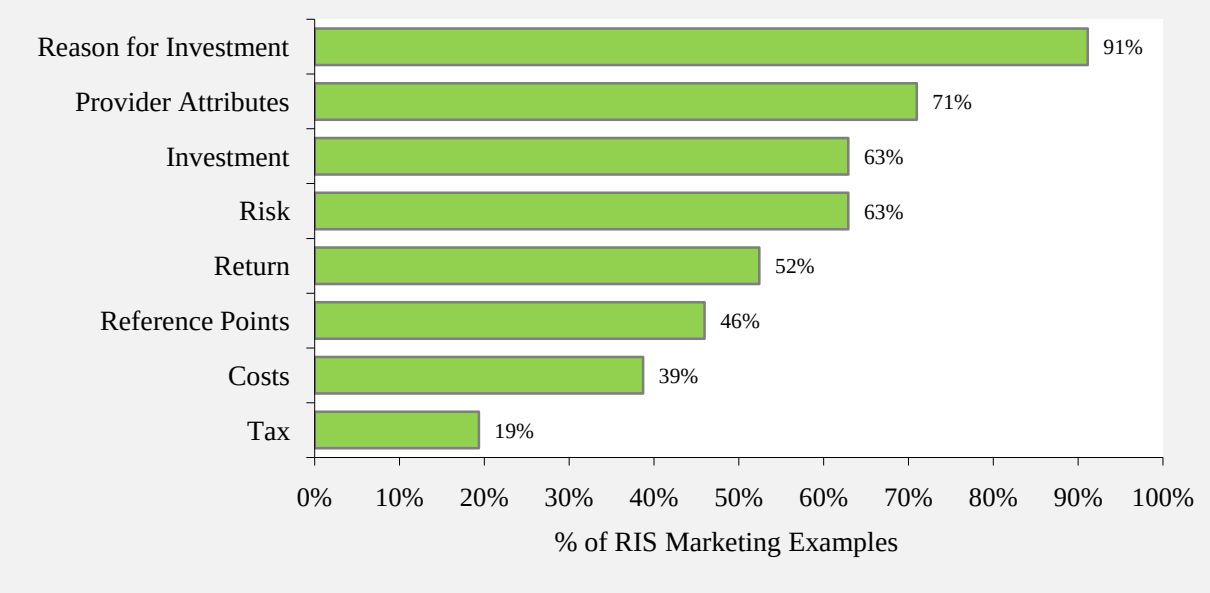


Figure 3.1 – Summary content analysis of RIS marketing materials

202. Within each category, there was substantial variation in the frequency with which different pieces of information were presented to the prospective investor. The following table (Table 3.22) shows the frequency with which each piece of information was found.

Category	Information	Frequency
Reason for Investment	Growth	66%
	Income	40%
	Hassle free / peace of mind	35%
	Retirement	27%
	Tax-efficiency	22%
Provider Attributes	Expertise	43%
	Efficiency	35%
	High returns	33%
	Good service	26%
	Low Costs	19%
	Advice	17%
	Personal service	16%
Investment	Minimum investment	35%
	Regular payments	35%
	Minimum duration	26%
	Fixed duration	24%
	Maximum duration	17%
	Maximum investment	6%
Risk	Volatility in returns	43%
	Capital risk	39%
	Other risks	27%
	Institutional risk	19%
	Foreign exchange risk	13%
Return	Capital guarantee	32%
	Expected return	23%
	Minimum return	21%

Category	Information	Frequency
	Rate guarantee	19%
	Maximum return	13%
	Bonus rates	13%
Reference Points	Past performance	32%
	Expected performance	17%
	Competitors' products	6%
	AER for comparability	6%
	Other product types	6%
Costs	Management charges	20%
	Set-up costs	20%
	Cancellation penalties	18%
	Advice fees	4%
Tax	Income Tax	15%
	Capital Gains Tax	14%

Table 3.22 – Detailed content analysis of RIS marketing materials

203. The most frequently mentioned investment reasons are (naturally) growth and/or income, but the ease of investment is also commonly mentioned. The provider attributes most likely to be mentioned are expertise and efficiency. The investment characteristics mentioned are typically the minimum investment amount and duration, and whether regular (e.g. monthly) amounts can be invested. Risks are primarily described in terms of variable returns, with other sources of risk less frequently mentioned. When returns are mentioned, it is often the minimum return that is stressed (rate guarantee, capital guarantee) rather than the potential for large gains. Reference points are rarely given, and when they are provided they tend to refer to the same investment (past performance, expected performance) rather than giving contextual information (competitor products, net Annual Equivalent Rate). There is little evidence of strong price competition, with management fees and/or set-up fees being mentioned in just 20% of examples.

204. In summary, this illustrative review of RIS marketing material suggests that it primarily serves two purposes: to remind consumers why they might want to make an investment of any kind, and to highlight the positive aspects - especially expertise - of the company. Specific product details tend to focus on the practical aspects of the investment (amount and duration) and any guarantees against downside risk. Returns and costs are very much secondary messages, if mentioned at all, and very little comparative or contextual information is given. These stylised descriptions are consistent with the earlier characterisation of the RIS market as a low-knowledge market in which consumers rely on expertise and advice rather than shopping around and comparing alternatives on price and potential returns. The RIS purchase process is explored and described in detail in Chapter IV.

6.3 Example Marketing Materials

205. Finally, we supplement the previous discussion with some specific examples of RIS marketing material from the UK. These illustrative examples are intended to bring to life the quantitative content analysis, by providing qualitative specimens of the characteristics described above. Furthermore, we discuss how the design of marketing materials might relate to the behavioural biases described in Chapter II.

Example 1: Poster Advertisement

Figure 3.2 – Example RIS poster advertisement

206. As might be expected from a poster advertisement, the example shown in Figure 3.2 is light on detailed information, being more an advert for the provider than for a specific type of investment. Provider characteristics are the main focus: product range ("Retirement, Investments, Insurance") and tailored product offerings ("Give me a good deal"). Whilst the pound signs indicate that money is involved, the message does not indicate whether a "good deal" refers to low costs, high returns, or some aspect of product quality such as service or efficiency. It is not easy to relate the message to any specific aspect of consumer psychology, other than possibly reassurance that the provider can be trusted and can handle the complex decision-making on behalf of the investor.

Example 2: Web Advertisement

Figure 3.3 – Example RIS web advertisement

207. The second example, a web advertisement for a range of investment funds shown in Figure 3.3, contains more detailed information but is also light on specific facts and figures. The principal message is related to reassurance ("easy to swallow", "easy-access", "simple") and the reason for investing ("save for your future"). Although fees are mentioned ("SAVE 5% on up front charges") the actual fee amount is not specified, nor is it entirely clear what the saving is in relation to. The advert suggests a possible investment amount ("Use your £7,200 ISA allowance"), and highlights the possibility for tax-free investing. Finally, provider characteristics are also stressed, namely the product range ("one of our exclusive […] investment plans") and the provider's expertise ("some of the world's best investment managers"). The advertisement employs a number of common framing strategies, such as anchoring (a £7,200 investment is suggested) and describing the up-front fees in terms of a percentage discount relative to a previous higher level rather than in absolute terms. However, similar messages can be found in advertisements in other consumer markets, and the general intention seems to be to reassure and simplify by removing detailed information rather than to bamboozle through complexity.

Example 3: Structured Product Descriptions

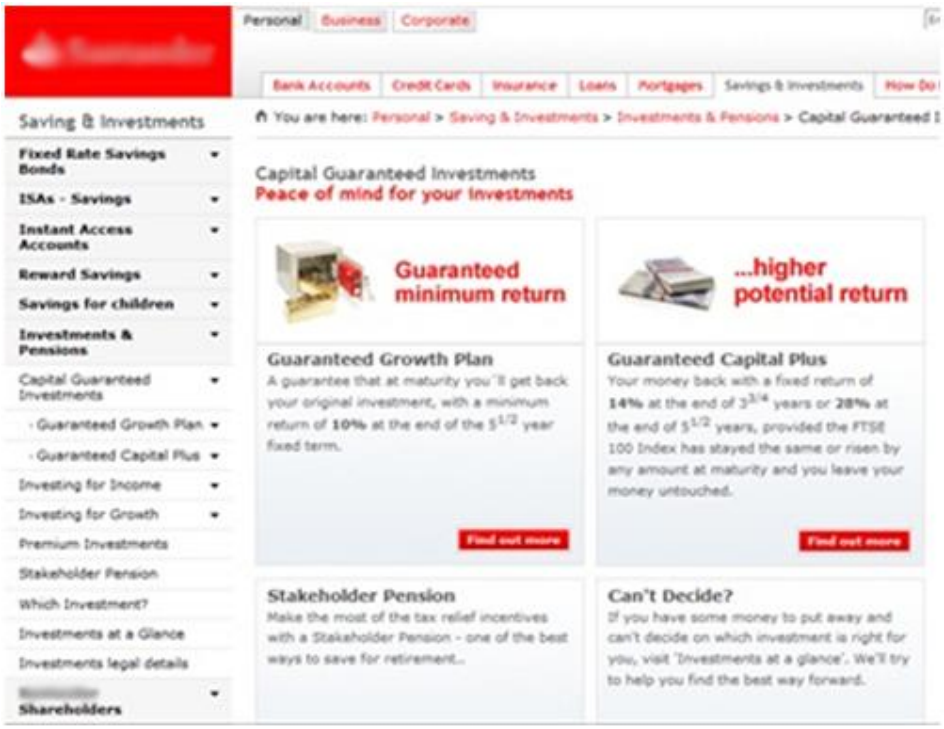


Figure 3.4 – Example RIS product description

208. Finally, in Figure 3.4 we turn to an example of specific product descriptions, found on the website of a bank. While this can still be described as "marketing material", it is not advertising as it is only seen by potential investors actively researching specific investment options. The material relates to two similar structured products, both involving a capital guarantee. Hence the text mentions the reassurance of protection against losses ("peace of mind", "your money back") as well as guaranteed growth (" a minimum return of 10% at the end of the 5 year fixed term") in the case of the first product. This is a clear framing manipulation, using the compounded return rather than the AER, which at under 2% a year would barely keep pace with inflation. The likely or maximum return is not specified, again suggesting that the product is aimed at risk-averse investors who are more concerned with protecting capital than growing their investment.

209. The second product, as with many structured products, is complex and the description is not crystal clear. The emphasis is on higher potential returns, described as "a fixed return" but then later made conditional on the performance of the FTSE 100 share index. Again, the returns are described in compound terms ("28% at the end of 5 years") and the description emphasises that any positive return from the FTSE 100 would qualify, encouraging the investor to compare the product to a scenario where the FTSE 100 rose less than 28% in 5 years. No mention is made of the past performance of the FTSE 100 index, the historical probability of the index not rising in any five year period, or the likely return if the money were instead invested directly in the FTSE 100 index via a passive or tracker fund. Overall, the material is clearly intended to discriminate between the lower and higher risk alternatives, rather than to emphasise why these investments might be better than other types of investment, or similar investments from competing providers.

210. As already stated, the non-representative and illustrative nature of this marketing material survey limits our ability to draw too many emphatic conclusions from the findings. Nonetheless, we do not see strong evidence that misleading sales messages and advertising claims are common, and where framing is employed this is no more prevalent than in other consumer markets. In general, the marketing material often seems primarily intended to draw the customer into discussion with an investment provider, who will then use their expertise to offer the best product, rather than to

promote specific products or to compete on price and performance. As we show in Chapter IV, this is to be expected given the purchase decision process of the typical retail investor, and suggests that advertising and marketing is unlikely to be the best point in that decision process to make regulatory interventions intended to improve the functioning of the RIS market for consumers.

References

Alessie, R., Hochguertel, S. and A. Van Soest. 2000. Household Portfolios in the Netherlands, in Giuso, L., Haliassos, M. and T. Jappelli (eds.). Household Portfolios. Cambridge: MIT Press. pp340-88.

Alessie, R., Hochguertel, S. and A. Van Soest. 2005. Non-take-up of Tax-Favored Savings Plans: Evidence from Dutch Employees, Discussion papers 2005-019, NetSpar-Studies on Pensions, Aging and Retirement.

Alessie, R. and A. Kapteyn. 2001. Savings and Pensions in the Netherlands. Research in Economics 55, 61-82.

Analizy Online 2008. "Oszczędności gospodarstw domowych (grudzień 2007)" ("Household savings - December 2007") http://www.analizy.pl/fundusze/wiadomosci/5524/struktura-oszczednosci-gospodarstw-domowych-%28grudzien-2007%29.html

Analizy Online 2009a. "Oszczędności gospodarstw domowych (grudzień 2008)" ("Household savings - December 2008") http://www.analizy.pl/fundusze/wiadomosci/7005/struktura-oszczednosci-gospodarstw-domowych-%28grudzien-2008%29.html

Analizy Online 2009b. "Oszczędności gospodarstw domowych (grudzień 2008, tabela)" ("Households savings - December 2008, table")

Analizy Online 2010a. "Uczestnicy funduszy emerytalnych (styczen 2010)" ("Members of pension funds - January 2010") http://www.analizy.pl/fundusze/wiadomosci/zalacznik/8237

Analizy Online 2010b. "Oszczędności gospodarstw domowych (wrzesień 2009)" ("Household savings - September 2009") http://www.analizy.pl/fundusze/wiadomosci/8201/struktura-oszczednosci-gospodarstw-domowych-%28wrzesien-2009%29.html

Andreasch, M. 2006. Wertpapierportefeuilles privater Haushalte in Österreich, in Statistiken- Daten & Analysen, Q1/06, OeNB, pp. 63-74.

Asociatia Administratorilor de Fonduri din Romania (www.aaf.ro)

Banco de Espana 2010. Boletín Económico: Evolución de la cartera financiera de los hogares en el contexto de la crisis. http://www.bde.es/webbde/SES/Secciones/Publicaciones/InformesBoletinesRevistas/BoletinEconomico/10/Ene/Fich/art2.pdf

Banco de Espana 2010. Indicadores Económicos. http://www.bde.es/webbde/es/estadis/infoest/e0807.pdf

Bank of Latvia 2008. Monetary Review 4-2008

Bank of Latvia 2009. Monetary Review 2-2009

Banks, J. and S. Smith. 2000. Household Portfolios in the UK. In Guiso L., et al. (Eds). "Household Portfolios". Cambridge, Mass: MIT Press.

Banque de France 2007. Semi-Definitive Accounts , http://www.banque-france.fr/gb/stat_conjoncture/telechar/comptefi/cptanat/SimplifiedSemi-Definitive2007.xls

Banque de France 2008. Provisional Accounts. http://www.banque-france.fr/gb/stat_conjoncture/telechar/comptefi/cptanat/SimplifiedProvisional2008.xls

Banque de France 2009. Quarterly Financial Accounts France. http://www.banque-france.fr/gb/stat_conjoncture/telechar/comptefi/2009_T3_france_tableaux_comptes_financiers-france.pdf

Beer, C., Mooslechner, P., Schürz, M. and K. Wagner. 2006. Austrian Stockholders´ Financial Wealth: An Analysis Based on Microeconomic Data in: Monetary Policy & the Economy, Q2/06, OeNB, pp. 94-110.

Benham, S. UK Life Insurance Distribution, http://www.brighthub.com/office/finance/articles/64103.aspx

British Bankers' Association. Industry Guidance for FSA Banking Conduct of Business Sourcebook, http://www.bba.org.uk/content/1/c6/01/70/36/BCOBS_Industry_Guidance.pdf

Brown, S. and K. Taylor. 2005. Household Debt and Financial Assets: Evidence from Great Britain, Germany and the United States. Discussion Papers in Economics No. 05/05. Dept. of Economics, University of Leicester.

Calvet, L., Campbell J. Y. and P. Sodini. 2006. Down or Out: Assessing the Welfare Costs of Household Investment Mistakes. Les Cahiers de Recherche 832, Groupe HEC.

Calvet L., Campbell J. Y. and P. Sodini. 2008. Fight or Flight? Portfolio Rebalancing by Individual Investors. NBER Working Papers 14177, National Bureau of Economic Research, Inc.

Capital-Chronicle 2009. French Net Household Wealth to Drop for the First Time in 3 Decades, http://www.capital-chronicle.com/2009/03/french-net-household-wealth-to-drop-for.html

Couleaud, N. 2009a. France's National Economic Assets, 1978-2007: 30 Years Shaped by Real Estate and Stock Market Capital Gains, http://www.banque-france.fr/gb/publications/telechar/bulletin/qsa/qsa14etud_2.pdf

Couleaud, N. 2009b. Le patrimoine économique national de 1978 à 2007, http://www.insee.fr/fr/themes/document.asp?reg_id=0&ref_id=ip1229

De Kleijn, J. 1999. Vermogensverdeling 1997, in Sociaal Economische Maandstatistiek, No. 6, pp. 24-27.

European Central Bank 2009. Survey Data on Household Finance and Consumption. Research Summary and Political Use, Occasional Paper Series, No. 100/ January 2009.

Eurostat 2010. Datenbank "Vermögensbilanz", http://epp.eurostat.ec.europa.eu/portal/page/portal/financial_accounts/data/database

Faure, A. 2010. French Banks: Short of Capital, RBS Broker Report

Fessler, P. and M. Schürz. 2008. Stock Holdings in Austria, in Monetary Policy & the Economy, Q2/08, OeNB, pp. 83-100.

Finance and Capital Markets Commission 2010a. http://www.fktk.lv/lv/statistika/jaunumi/

Finance and Capital Markets Commission 2010b. http://www.fktk.lv/lv/tiesibu_akti/vispareja/likumi/

Financial Services Authority 2009a. Regulating Retail Banking Conduct of Business, London, http://www.fsa.gov.uk/pubs/policy/ps09_06.pdf

Financial Services Authority 2009b. Retail Investments Product Sales Data (PSD), http://www.fsa.gov.uk/pubs/other/retail_invest_report_09.pdf

Financial Services Authority 2009c. The Banking Conduct Regime and the Banking Conduct of Business sourcebook, http://www.fsa.gov.uk/Pages/Doing/Regulated/bcobs/index.shtml

Financial Services Authority 2009d. Treating Customers Fairly, http://www.fsa.gov.uk/pages/Doing/Regulated/tcf/index.shtml

Finney, A. and E. Kempson. 2008. Consumer Purchasing and Outcomes Survey 2008, Bristol

Forsal.pl 2009. "Rosną aktywa funduszy kapitałowych" ("Assets of Insurance Funds are Growing") http://forsal.pl/grafika/348892,26363,rosna_aktywa_funduszy_kapitalowych.html

GlobalEconStats 2009. Financial Asset Types Held by Households in France, http://globaleconstats.com/wp/2009/09/15/financial-asset-types-held-by-households-in-france

GPW - Warsaw Stock Exchange 2010. "Lista uczestnikow" ("List of Participants") http://www.gpw.pl/gpw.asp?cel=domy_maklerskie&k=1&i=/lista_dm/lista

Guiso, L. and T. Jappelli. 2000. Household Portfolios in Italy. CSEF Working Paper No. 43, CSEF Working Papers.

Guiso, L. and T. Jappelli. 2006. Information Acquisition and Portfolio Performance. CEPR Discussion Papers 5901, CEPR Discussion Papers.

Guiso, L., Haliassos, M. and T. Jappelli. 2003. Household Stockholding in Europe: Where Do We Stand and Where Do We Go? Economic Policy 18, 123-70.

Hahn, F. and C. Magerl. 2006. Vermögen in Österreich, in WIFo-Monatsberichte 1.

Oanda.com 2010. Historical Exchange Rates, http://www.oanda.com/currency/historical-rates

Hochguertel, S. 2003. Precautionary Motives and Portfolio Decisions.Journal of Applied Econometrics 18, 61-77.

IFSL Research 2010. Banking 2010, London, http://www.ifsl.org.uk/output/ReportItem.aspx?NewsID=29, Call date

Investment Management Association 2009. Retail Investor Trends 2009, http://www.investmentuk.org/press/2009/20091207-01.pdf

Japan Post Bank 2009. Business Overview: Household Financial Assets, 31.03.2009, http://www.jp-bank.japanpost.jp/en/aboutus/pdf/en2009_05.pdf

Jappelli, T. and L. Pistaferri. 2003. Tax Incentives and the Demand for Life Insurance: Evidence from Italy. Journal of Public Economics 87, 1779-99.

Kalamboussis, K. 2009. French Big Picture - Banking, Economic and Capital Market Trends- Autumn 2009, Citigroup Broker Report

Lusardi, A. and O. Mitchell. 2007. Financial Literacy and Retirement Planning: New Evidence from the Rand American Life Panel. Working papers, University of Michigan, Michigan Retirement Research Center.

Marionnet, D. 2006. French Households' Financial Investment: Comparisons with Europe (1995-2004), http://www.banque-france.fr/gb/publications/telechar/bulletin/148etud1.pdf

Muchcinski, E. 2007. "Z bankowego okienka i z Internetu" ("From Bank Window and from the Internet"), http://www.rp.pl/artykul/5,72194.html

National Bank of Poland 2009a. "Podaż pieniądza M3 i czynniki jego kreacji" (M3 Money Demand and its Sources"), http://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_i_bankowa/m3.html

National Bank of Poland 2009b. "Kwartalne rachunki finansowe" ("Quarterly Financial Accounts"), http://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_i_bankowa/krf.html

National Bank of Romania (BNR) 2008. Raport stabilitati financiare, December 2008.

National Bank of Romania (BNR) 2009. Monthly Bulletin, December 2009.

OECD 2009. OECD Annual Statistics on Households' Assets, http://stats.oecd.org/Index.aspx?DataSetCode=7HA

Oesterrechische Nationalbank (OeNB) 2010. Geldvermögen des Privaten Haushaltssektors, http://www.oenb.at/isaweb/report.do?lang=DE&report=8.3.1

Office for National Statistics 2006. Main Results from the Wealth and Assets Survey 2006/08

Office for National Statistics 2009a. United Kingdom Economic Accounts No 68 Q3 2009, London

Office for National Statistics 2009b. United Kingdom National Accounts Blue Book 2009, London

Oxera 2009. Retail Distribution Review Proposals: Impact on Market Structure and Competition, Oxford, http://www.fsa.gov.uk/pubs/other/oxera_rdr.pdf

Portfel.pl 2010. "TFI - Udział w rynku" ("Mutual Investment Funds - Market Share"), http://www.pro-portfel.pl/tfi/tfi_udzial_w_rynku.aspx

SEB 2009. Savings Barometer 2009-12-21

Statistics Sweden 2010. Sparbarometern 2010-02-17, Statistics Sweden

UniCredit Group 2010. CEE Strategic Analysis: CEE Households' Wealth and Debt Monitor, January 2010, pp. 28-29, 41.

Van Rooij, M., Kool, C. and H. Prast. 2007. Risk-Return Preferences in the Pension Domain: Are People Able to Choose? Journal of Public Economics 91, 701-22.

Vandamme, B. 2010. French Banks - Challenges Ahead: How to be Positioned, Deutsche Bank Broker Report

Veld-Merkoulova, Y.V. 2009. Investment Horizon and Portfolio Choice of Private Investors, Mimeo, Stirling Management School, University of Stirling.

World Bank 2009a. Romania - Diagnostic Review of Consumer Protection and Financial Literacy, vol. I, July 2009.

World Bank 2009b. Romania - Diagnostic Review of Consumer Protection and Financial Literacy, vol. II, July 2009.

Ynesta, I. 2008. Households' Wealth Composition across OECD Countries and Financial Risks Borne by Households, http://www.oecd.org/dataoecd/53/48/42143434.pdf

Zeniya, K. 2005. Dynamism in Reforming Financial Product Distribution Channels in the United Kingdom, http://www.nri.co.jp/english/opinion/papers/2005/pdf/np200595.pdf

PART 1: REVIEW

CHAPTER IV

RETAIL INVESTMENT PURCHASE PROCESS SURVEY

Retail Investment Services: Retail Investment Purchase Process Survey[135]

1 Introduction: Objectives and Study Design

1.1 Objectives

211. This survey complements the secondary research of the previous chapter, using original primary data collection to present a unique perspective on the purchase of Retail Investment Services (RIS) from the consumer perspective. A web-based data collection method was used in eight European Union Member States to survey 6,000 consumers, half of whom had purchased RIS within the last five years. The study had two principal objectives:

    i. To understand the decision process of RIS purchasers, from the initial purchase trigger through to the final reason(s) for choosing the selected option and to identify significant differences between Member States or different classes of RIS in the way that advised and non-advised purchases are made. Furthermore, by segmenting investors according to the purchase processes followed, to explore how the various influences discussed in the BE literature review (e.g. financial literacy and numeracy; trust; heuristic decision-making; attitudes to risk) affect the choices of different groups of investors, and consider how those investor groups might be identified.

    ii. To identify the main differences between purchasers and non-purchasers of RIS, in order to determine how much of retail investment behaviour is driven by financial considerations (e.g. balance sheet; income; attitudes to risk) and how much is driven by behavioural biases (e.g. trust; procrastination; financial literacy).

212. These two objectives reflect the two main ways in which regulatory policy might be used to make the RIS market work better for consumers: to ensure existing investors can correctly identify the best alternative or to ensure potential investors are not excluded from the RIS market. The survey results are necessarily descriptive rather than comparing each investor's choices against an objective standard, but nonetheless shed

[135] Primary author(s) of this chapter: Nick Chater

light on the functioning of the European RIS market and consumer attitudes toward RIS providers.

213. RIS were defined as bonds, stocks and shares, personal pensions, funds (e.g. investment funds, mutual funds, ETFs), structured products and life insurance products primarily used for investment purposes. Other deposit products such as current accounts, savings accounts and tax-free savings accounts are excluded from this definition.

1.2 Sampling Strategy and Data Collection

214. In order to address both of the objectives addressed above, survey respondents were classified as RIS purchasers and non-purchasers based on whether or not they had bought one or more retail investment products in the last 5 years. This period was chosen to ensure that the purchasing window extended back before the recent turmoil in global financial markets, which might have caused unusual behaviour by either RIS providers or consumers. In order to allow an estimation of the rate of RIS purchasing in each member state to be made, whilst oversampling RIS purchasers to provide robust sample sizes for subsequent analyses, a two-stage sampling strategy was followed. In the first stage, random and (approximately) nationally-representative sampling was used to survey both purchasers and non-purchasers according to the relative proportions with which the two groups occur in the population. Once 50% of the sample had been filled with non-purchasers via random sampling, a second stage filtered out non-purchasers using screening questions, so that the remaining sample consisted only of RIS purchasers. The final sample was thus evenly split between RIS purchasers and non-purchasers.

215. Eight Member States were chosen for the survey, with a range of large and small economies (including three EC12 accession states) and covering north, south and central Europe: Czech Republic; France; Germany; Italy; Poland; Romania; Sweden and the UK. The sample was split evenly across each of the eight countries to ensure sample sizes in smaller countries were sufficiently large. With a total sample of 6,000 respondents, that equates to a sample of 750 respondents in each country. In the first stage of data collection, 375 non-purchaser respondents were surveyed along with X purchasers, with X being specific to each country. The five-year RIS purchasing rate could then be estimated for each country using the ratio X / 375 after appropriate

weighting. In the second stage of data collection, 375 - X further responses were collected from purchasers. The final sample thus consisted of 3,000 recent RIS purchasers and 3,000 non-purchasers (before cleaning).

216. The survey was conducted using web-based data collection, with respondents recruited via an e-mail that directed them to an internet survey presented in Adobe Flash, embedded in a standard HTML page. Survey respondents were recruited from actively managed and maintained access panels, which all fully comply with ICC/ESOMAR codes and guidelines for conducting research on the internet.[136] Respondents received an appropriate financial incentive for participating in the survey, the amount of which varied by country and survey duration. The online survey was piloted on 36 respondents in the UK in order to test question comprehension and survey completion time, which did not indicate any major issues. Fieldwork in the UK took place from 4th March 2010 to 11th March 2010. Fieldwork took place simultaneously in the other seven countries from 12th March 2010 to 23rd March 2010. Internet penetration and respondent availability varies widely across Member States, making research into specific sub-groups difficult in some countries. In this study - despite using two different panels - it proved impossible to fulfil the sample of recent RIS purchasers in Romania, although 686 of the 750 responses were collected. Additional purchasers were surveyed in the other countries in order to bring the total sample size up to 6,000 responses.

1.3 Questionnaire Design

217. The survey questionnaire comprised three sections, as well as some initial filtering questions to check each respondent met the basic qualification criteria (aged 18 or over and permanent resident in the country of interest) and to identify recent RIS purchasers. The first section - only completed by purchasers - collected details on the type of investment made and the main features of the investment; how the investment was made; and (when relevant) the nature of the interaction with the advisor, broker or salesperson most involved with the investment purchase process. The second section collected socio-demographic information; financial position and attitudes; and trust in

[136] See the ESOMAR website www.esomar.org for more details.

RIS providers. The third and final section consisted of a ten question multiple-choice financial literacy test.

218. The survey was translated from English into each of the seven other languages by a third-party professional translation agency, a member of the Association of Translation Companies, using experienced mother-tongue translators.[137] The translations were proof-read and edited by a second translator to ensure accuracy and clarity. The translations were then passed to independent native speakers and to the EC for a further round of proof-reading and editing. With the exception of two questions requiring a numerical response (household income and total savings), all questions had a fixed set of response options, so no translation of responses back into English was required.

1.4 Data Cleaning and Weighting

219. As with all survey research, especially unattended completion methods such as web-based surveys, not all responses collected were of sufficiently high quality to be included in the subsequent analysis. A number of tests were applied to each respondent's data to check for consistent and thoughtful responses. Firstly, consistency test questions were placed at the start and end of the survey (date of birth compared to age; number of adults and children in household compared to total household size) to remove fictional responses. Secondly, the completion time for each respondent was recorded, and respondents with unusually short completion times were removed. Finally, for questions involving rating of agreement or disagreement with a series of statements on a Likert scale, respondents exhibiting no variance in their choice of response option were also filtered out to ensure only thoughtful responses containing a range of opinions were included. Of the 6,115 surveys conducted, 139 respondents' data (2%) were removed, giving a final sample size of 5,976 respondents.

220. Again in common with all survey research, the representativeness of the results can be reduced by selection and sampling biases. A particular issue for web-based survey research using managed respondent panels is a sampling bias caused by the online

[137] Members of the ATC are carefully vetted before admission into membership, adhere to a strict code of professional conduct, are subject to the rulings of a professional ethics committee and carry full professional indemnity insurance cover to safeguard the interests of the translation purchaser. See www.atc.org.uk for full details.

population differing from the general population (and, possibly, members of the respondent panel differing from other internet users). In countries where internet penetration is high, this sampling bias is small but in countries with low internet penetration it can be significant. Typically, the online population in such countries tends to contain fewer older people then the general population, as well as often being wealthier and better educated. To correct for this sampling bias, the distribution of ages and genders observed in the first stage of sampling (random sampling) within each country was compared to Eurostat data on the general population.[138] Respondent weights were calculated such that the distribution of ages and genders in the random sample matched the general population. The same proportional weights were applied to the additional purchasers from the second stage of sampling (purchasers only), based on the age and gender of each purchaser. Thus the sampling bias was mitigated whilst demographic differences between RIS purchasers and the general population were preserved. All country-level figures presented in this report have been weighted in this way.

221. In addition to country-level results, we have estimated an aggregated EU figure for each question. These EU estimates are simple weighted averages of the individual country results. For questions related to the general population (those asked of RIS purchasers and non-purchasers), the aggregate figure was weighted by the total population in each Member State, taken from the same Eurostat data as the prior respondent-level weighting. For questions related to RIS purchasers only, the aggregate figure was weighted by the approximate relative size of the RIS market in each country (by total number of investors, not total financial value). The market size in each country was estimated using the total population and the 5-year RIS purchasing rate observed in the first stage of sampling, after demographic re-weighting to mitigate for sampling biases. In all cases, the country-level results are presented alongside the EU aggregate to ensure that the degree of variability across Member States can be assessed.

[138] Eurostat data offers population statistics that are consistently collected and defined across European states, so are suitable for weighting cross-country studies. Data on age and gender distributions in each country were taken from table tps00010 and tps00011, which can be found at http://epp.eurostat.ec.europa.eu/portal/page/portal/population/data/main_tables.

222. The rest of this report is structured as follows. We begin by presenting details of the purchase process followed by RIS purchasers in each country, including the types of investment made, the way those investments were selected and purchased, and the typical interaction with advisors, salespeople and brokers. After presenting the typical investment purchase process, we describe four commonly-occurring purchase processes, and describe the main differences between investors following each purchase strategy. Finally, we describe the major differences between RIS purchasers and non-purchasers in each country, in terms of socio-demographics, attitudes and financial literacy.

2 The RIS Purchase Process

2.1 RIS Purchases across the EU

223. In this section of the report we describe the different types of RIS products purchased over the last five years and highlight the major differences between Member States. We also describe the attributes of each product as understood by RIS purchasers, which illustrate that while retail investors understand the broad differences between types of investment, uncertainty and misunderstanding is common. All results in Part 2 of this report are based on the responses of 2,904 recent RIS purchasers.

Member State	**Five Year RIS Purchase Rate**
Czech Republic (CZ)	26%
Germany (DE)	22%
France (FR)	21%
Italy (IT)	25%
Poland (PL)	25%
Romania (RO)	30%
Sweden (SV)	29%
United Kingdom (UK)	19%
European Union (EU)	23%

Table 4.1 – Five year RIS purchase rate

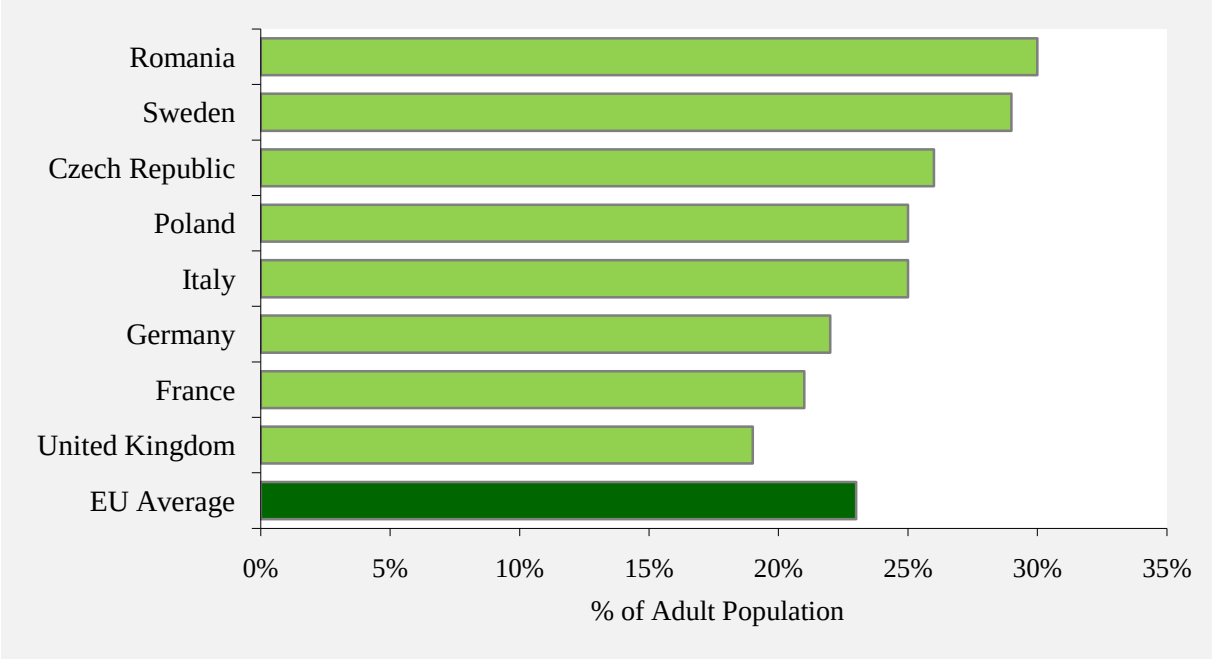


Figure 4.1 – Five year RIS purchase rate

224. Across the European Union, 23% of the adult population has purchased an RIS product in the last five years, with significant variation in purchase rates between Member States (see Table 4.1 and Figure 4.1). About three in every ten adults in Romania and Sweden purchased an RIS product in the last five years, while fewer than two in ten adults in the UK purchased an RIS product in the last five years.

Most Recent RIS Product Purchase	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Stocks and shares	26%	9%	21%	30%	34%	16%	18%	22%	34%
Personal pensions	23%	18%	27%	8%	14%	41%	51%	18%	19%
Life insurance for investment purposes	21%	39%	16%	46%	19%	13%	21%	4%	8%
Funds	19%	24%	32%	9%	21%	19%	5%	44%	8%
Bonds	7%	1%	2%	5%	4%	6%	3%	8%	25%
Structured products	4%	9%	2%	2%	8%	5%	2%	4%	6%

Table 4.2 – Most recent RIS product purchase

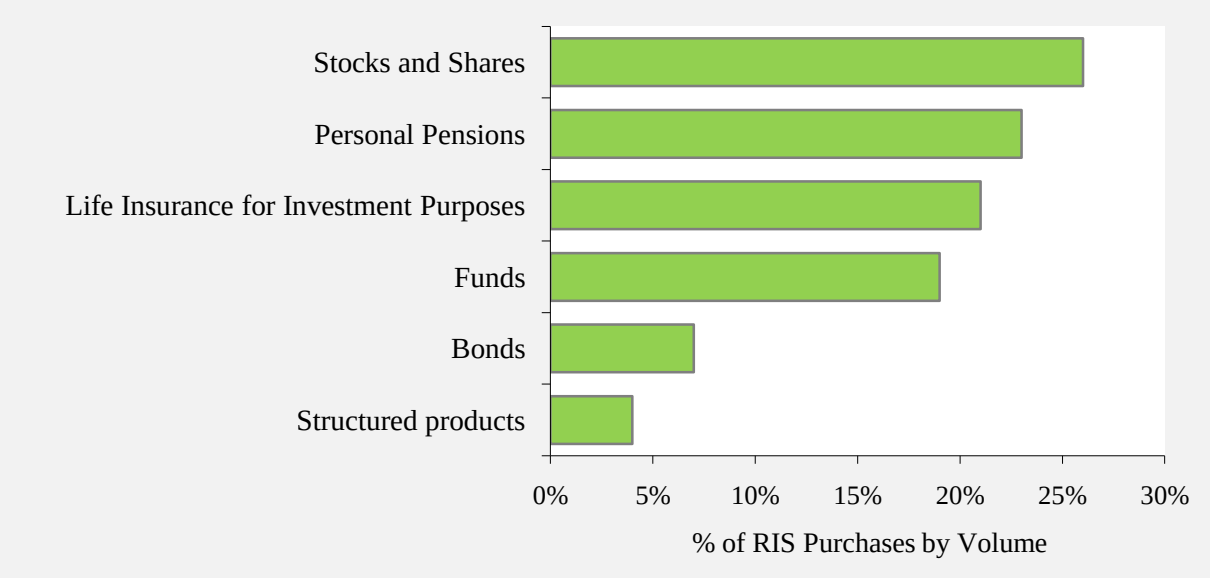


Figure 4.2 – RIS product purchase shares (EU average)

225. Across the EU four types of RIS products made up the majority of investments by volume in the last 5 years: stocks and shares, personal pensions, life insurance, and funds (Figure 4.2). Relatively few investments were made in bonds or structured products. However, there are large differences between member states (Table 4.2). For example, personal pensions made up over half of all RIS purchases in Romania and four in ten RIS purchases in Poland. In contrast, only 8% of RIS purchases in France were personal pensions. These differences likely reflect structural differences in state pension provision: Romanian pension reforms in recent years made private pension contributions compulsory while French citizens enjoy a relatively generous state pension system alongside compulsory membership of industry-wide pension schemes.

RIS Provider	EU	CZ	DE	FR	IT	PL	RO	SV	UK
Bank	57%	33%	59%	70%	68%	56%	42%	70%	38%
Insurance company	19%	35%	26%	14%	17%	21%	28%	6%	8%
Employer	7%	10%	4%	4%	6%	5%	8%	8%	18%
Building society	7%	6%	6%	8%	3%	10%	6%	2%	11%
Pension provider	4%	12%	3%	2%	1%	3%	2%	1%	12%
State	4%	3%	0%	2%	3%	4%	10%	7%	7%
Other	3%	1%	3%	0%	2%	1%	4%	7%	5%

Table 4.3 – RIS product providers

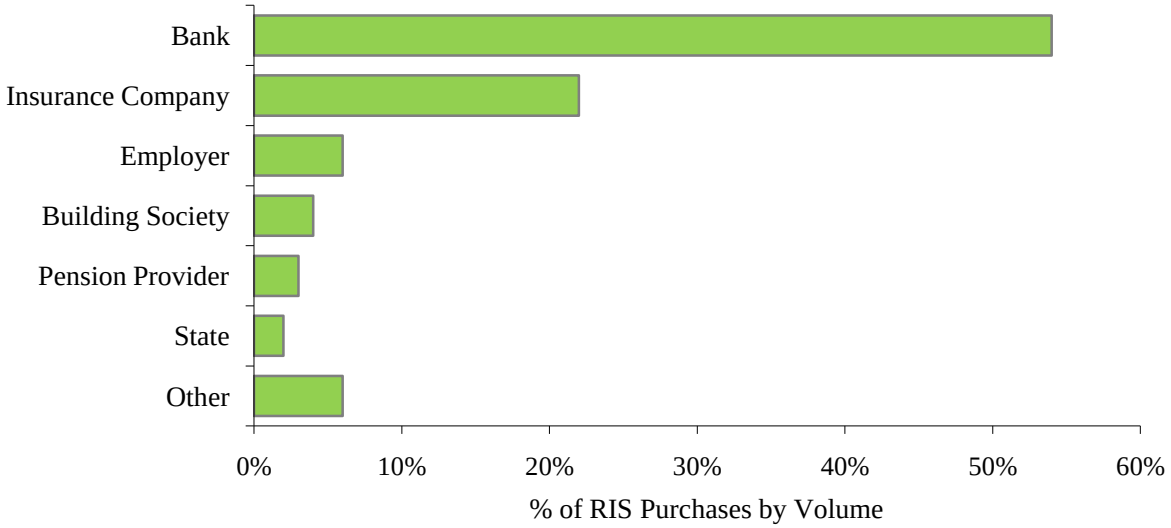


Figure 4.3 – RIS product providers (EU average)

226. RIS sales are dominated by banks and insurance companies, with more than three quarters of investments made in the last five years through these institutions (see Table 4.3 and Figure 4.3). Banks are especially dominant in France, Sweden and Italy. Insurance companies provide the highest share of RIS in the Czech Republic, Romania and Germany. The UK is distinct from the rest of the EU with a far greater share of RIS provided by employers, pension providers and building societies.

RIS Investment Route	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Directly with provider	88%	69%	88%	90%	93%	93%	84%	90%	79%
Through a third party	12%	31%	12%	10%	7%	7%	16%	10%	21%

Table 4.4 – RIS investment route

227. As Table 4.4 shows, across the EU almost nine out of every ten RIS purchases is made directly with the investment provider. Third party intermediaries play the greatest role in the Czech Republic and the UK.

RIS Provider	Stocks & Shares	Personal Pensions	Life Insurance	Funds	Bonds	Structured Products
Bank	68%	37%	39%	73%	54%	69%
Insurance Company	4%	29%	44%	7%	2%	12%
Employer	9%	12%	3%	3%	2%	1%
Building Society	3%	3%	6%	3%	12%	4%
Pension Provider	1%	12%	3%	4%	1%	1%
State	2%	3%	1%	1%	22%	4%
Other	12%	4%	4%	10%	6%	10%

Table 4.5 – RIS provider by product type

RIS Investment Route	Stocks & Shares	Personal Pensions	Life Insurance	Funds	Bonds	Structured Products
Directly with provider	91%	87%	81%	83%	90%	85%
Through a third party	9%	13%	19%	17%	10%	15%

Table 4.6 – RIS investment route by product type

228. Banks are most dominant in the provision of funds, structured products, and stocks and shares. Insurance companies are most involved in the provision of life insurance for investment purposes and personal pensions (Table 4.5). Employers and specialised pension providers are also important for provision of personal pensions, while state investment bodies and building societies are significant providers of bonds. Life

insurance for investment purposes, funds and structured products are the most likely RIS to be purchased through a third-party intermediary (Table 4.6).

2.2 Consumer Understanding of RIS Products

Deposit Structure	Stocks & Shares	Personal Pensions	Life Insurance	Funds	Bonds	Structured Products
One-off payment	51%	8%	17%	38%	71%	67%
Initial payment with the option of further contributions	11%	10%	9%	13%	9%	11%
Can make payments anytime	23%	12%	10%	14%	7%	9%
Regular monthly payments	15%	64%	54%	33%	11%	11%
Regular annual payments	1%	6%	10%	2%	1%	3%

Table 4.7 – Claimed deposit structure by product type

Income Structure	Stocks & Shares	Personal Pensions	Life Insurance	Funds	Bonds	Structured Products
Pays a regular income now	43%	15%	17%	28%	36%	29%
Will pay a regular income in the future	16%	52%	39%	22%	11%	22%
Does not pay a regular income	41%	33%	44%	49%	54%	49%

Table 4.8 – Claimed income structure by product type

229. RIS purchasers' understanding of the deposit and payment structure of the product they had purchased is generally good, although some confusion is evident in Tables 4.7 and 4.8. In particular, some investors stated they had purchased stocks and shares but were making regular monthly payments, suggesting that they had in fact purchased an

investment fund. One third of pension purchasers also stated incorrectly that it would not pay a regular income.

Equities Exposure	Stocks & Shares	Personal Pensions	Life Insurance	Funds	Bonds	Structured Products
Some or all of the investment is in stocks and shares	80%	29%	35%	61%	30%	38%
None of the investment is in stocks and shares	13%	39%	43%	20%	54%	35%
Don't know	8%	32%	22%	19%	16%	27%

Table 4.9 – Claimed equities exposure by product type

230. A significant proportion of RIS purchasers were unsure about their exposure to stocks and shares (Table 4.9), or incorrectly understood the nature of their investment. Of particular concern is the finding that three in ten pension investors do not know whether their pension is invested in stocks and shares, while an (implausibly high) four in ten pension purchasers state that none of their pension is held in stocks and shares. Similarly, 43% of life insurance investors believe that their money is not invested in stocks and shares, while 30% of bond purchasers believe their money is invested in stocks and shares. Uncertainty about equity exposure is greatest for personal pensions and structured products.

Rate of Return	Stocks & Shares	Personal Pensions	Life Insurance	Funds	Bonds	Structured Products
Fixed	14%	22%	21%	12%	43%	21%
Variable	73%	43%	41%	69%	37%	26%
Variable but with a guaranteed minimum	13%	35%	38%	19%	20%	53%

Table 4.10 – Claimed investment return type by product type

231. Again, some confusion is evident in RIS purchasers' understanding of the rate of return on their investment in Table 4.10. One in four investors in stocks and shares believe they receive a fixed rate of return or a guaranteed minimum rate. One in three personal pension purchasers also believes they have a guaranteed minimum rate of return. Whilst the question is somewhat ambiguous (it was not specified whether the rate of return included capital appreciation), the results are inconsistent with well-informed investors who have a clear understanding of the RIS product they have purchased.

Risk to Capital	Stocks & Shares	Personal Pensions	Life Insurance	Funds	Bonds	Structured Products
Could lose some or all of initial investment	63%	30%	27%	61%	18%	23%
Initial investment protected	37%	70%	73%	39%	82%	77%

Table 4.11 – Perceived capital risk by product type

232. Consistent with the prior results, RIS purchasers show a considerable lack of understanding of the risk to the capital they have invested (Table 4.11). More than one third of investors in stocks and shares believe their initial investment is protected, as do more than two-thirds of personal pension purchasers. In general, there appears to be a strong tendency to fail to recognise the risk of losing some, or all, of the initial amount invested.

Perceived Riskiness	Stocks & Shares	Personal Pensions	Life Insurance	Funds	Bonds	Structured Products
Very high	9%	3%	3%	5%	3%	2%
High	20%	6%	7%	15%	6%	7%
Medium	45%	42%	43%	56%	23%	33%
Low	18%	33%	30%	20%	36%	44%
Very low	8%	15%	17%	4%	32%	15%

Table 4.12 – Perceived investment risk by product type

233. Whilst recognising that this measure of perceived riskiness is both subjective and qualitative, it is striking that a large majority of RIS purchasers rate their investment as

medium or low risk and potential return (Table 4.12). Stocks, shares and funds are perceived as riskier than other RIS products, but one quarter of investors believe these are low or very low risk. Bonds and structured products are correctly perceived to be the least risky RIS products.

Minimum Term	Stocks & Shares	Personal Pensions	Life Insurance	Funds	Bonds	Structured Products
Can withdraw any time	63%	19%	24%	59%	36%	26%
At least 1 year	9%	6%	7%	7%	15%	18%
At least 2 years	5%	10%	6%	4%	13%	11%
At least 3-5 years	13%	15%	20%	12%	17%	30%
At least 6-10 years	4%	9%	16%	6%	5%	5%
More than 10 years	1%	8%	10%	3%	3%	3%
Can only withdraw at end of investment	4%	25%	16%	7%	10%	8%
Can never withdraw	1%	7%	3%	2%	0%	0%

Table 4.13 – Claimed minimum term by product type

Maximum Term	Stocks & Shares	Personal Pensions	Life Insurance	Funds	Bonds	Structured Products
Can keep money invested indefinitely	71%	32%	33%	68%	38%	37%
Can keep investment until specific event	7%	36%	23%	7%	7%	4%
1 year or less	3%	2%	1%	2%	10%	3%
1 to 2 years	3%	3%	3%	3%	11%	12%
3 to 5 years	10%	6%	8%	10%	24%	30%
6 to 10 years	3%	6%	10%	4%	8%	10%
More than 10 years	3%	16%	23%	6%	4%	5%

Table 4.14 – Claimed maximum term by product type

234. RIS purchasers' beliefs about the minimum and maximum period they must hold their investment before they can withdraw some or all of their money without being penalized by the investment provider are broadly consistent with the true nature of the products (Tables 4.13 and 4.14). Bonds and structured products are more likely than other products to have a fixed or minimum investment period. The details of the true liquidity of RIS products is likely to be quite variable, with withdrawal penalties or fixed investment periods common, so it is not possible to draw strong conclusions about the accuracy of investor understanding.

Taxed on Returns	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Yes	42%	30%	40%	36%	58%	47%	35%	50%	32%
No	25%	19%	30%	29%	14%	21%	18%	20%	35%
Depends how long held	33%	51%	30%	35%	29%	32%	47%	30%	34%

Table 4.15 – Claimed tax status by country

Taxed on Returns	Stocks & Shares	Personal Pensions	Life Insurance	Funds	Bonds	Structured Products
Yes	56%	28%	30%	51%	45%	38%
No	18%	26%	28%	18%	32%	25%
Depends how long held	26%	47%	42%	31%	22%	37%

Table 4.16 – Claimed tax status by product type

235. Similarly, it is not possible to assess the accuracy of RIS purchasers' beliefs about whether or not any investment income or capital gains are subject to taxation, shown in Tables 4.15 and 4.16. Differences between Member States could be caused by different taxation policies and tax rates, investor preferences for tax-free investments, or differing levels of accuracy in understanding tax liabilities. One in four RIS purchases across the EU is believed to be tax-free, with investors in the UK, Germany and France most likely to make a tax-free investment. Bonds, life insurance for investment purposes, and personal pensions are the products most likely to be perceived as free of tax liabilities.

2.3 Triggers for RIS Purchase

236. There are a multitude of reasons why a consumer might choose to purchase an RIS product, including changes in life circumstances that impact upon their financial position or needs. Alternatively, a purchase may be triggered by an external cause, such as advertising and marketing by RIS providers. In this section we first describe the frequency with which some of these events occur for typical consumers – both purchasers and non-purchasers or RIS products – then assess the relative impact that the occurrence of each event has upon a consumer's likelihood to purchase an RIS product. Table 4.17 shows the estimated annual frequency of external trigger events, such as marketing and advertising.

External Trigger Events	EU	CZ	DE	FR	IT	PL	RO	SV	UK
See TV advert for financial investment	4.9	6.0	3.9	4.5	5.3	6.0	6.6	4.0	4.8
See online advert for financial investment	4.3	5.6	3.1	4.1	4.9	6.1	6.3	2.9	3.9
See press advert for financial investment	4.1	5.2	3.3	3.7	4.4	5.1	5.6	3.6	4.1
See e-mail advert for financial investment	3.7	2.1	2.8	4.2	4.1	4.9	4.6	2.5	3.4
Read newspaper article about investments	3.0	3.1	2.3	2.5	3.0	4.2	5.2	2.7	3.3
Watch TV programme about investments	3.0	3.0	2.3	2.8	2.4	4.1	5.7	2.5	3.2
Conversation about investments with friend	2.7	3.2	2.2	2.2	2.8	3.7	5.1	2.4	2.5
Read online article about investments	2.6	2.9	1.9	2.2	2.5	4.4	5.3	1.7	2.3
Salesperson phones about investments	1.5	1.9	1.1	1.5	1.2	2.2	2.7	1.3	1.7
Employee of investment provider visits home	1.3	1.2	1.3	1.3	1.5	1.5	2.5	0.7	1.0
Salesperson comes to door with investments	0.9	0.7	0.7	0.7	1.0	1.1	1.8	0.4	0.8

Table 4.17 – External RIS purchase trigger events by country

237. Whilst these frequencies should be regarded as rough approximations, due to the difficulty of estimating annual frequencies for rare events, the relative values indicate the events that European consumers experience more or less often. Encountering advertisements for RIS products are the most common events, across a variety of media and all Member States. Less direct triggers, such as newspaper articles and television programs about financial investments, are also relatively common, being encountered every three to four months. Direct contact with RIS providers, through sales contacts or arranged visits, are much less frequent, happening only about once a year. Word-of-mouth is also relatively common, with conversations about investments happening two to three times a year. Romanian, Czech, and Polish consumers claim to experience these

events most often. Swedish and German consumers claim to experience these events least often.

238. Table 4.18 shows the estimated percentage of consumers who experience each of the life events in a typical twelve month period. Again, the absolute numbers should be treated with caution but the relative frequencies are indicative of which events are more or less common for the average European consumer.

Personal Trigger Events	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Refurbish or extend home	23%	34%	29%	21%	15%	33%	37%	22%	13%
Receive a pay rise	21%	21%	14%	17%	13%	42%	40%	33%	22%
Change job or start first job	17%	15%	14%	16%	11%	26%	35%	13%	20%
Receive a bonus from work	17%	16%	9%	15%	12%	40%	38%	9%	16%
Move house	16%	11%	15%	19%	13%	17%	20%	16%	14%
Made redundant	11%	11%	11%	10%	12%	16%	15%	7%	10%
Switch current account	9%	6%	9%	7%	8%	16%	11%	3%	7%
Win or inherit some money	7%	4%	8%	6%	5%	6%	9%	9%	7%
Move into first home	7%	4%	4%	11%	6%	10%	12%	2%	7%
Have a child	6%	6%	3%	12%	4%	8%	10%	2%	3%
Get married	6%	3%	3%	14%	5%	7%	9%	1%	4%
Get divorced	3%	2%	3%	5%	2%	3%	2%	1%	2%

Table 4.18 – Personal RIS purchase trigger events by country

239. After home refurbishment, life events that might impact upon income are relatively common, with events such as pay rises, changes of job, and receiving a bonus occurring for one in every five or six consumers in a typical year. Landmark life events such as births and marriage occur much less frequently. Whilst the estimated frequencies of these events differ across Member States, the ordering of more and less common events is very similar.

240. By comparing the frequency with which all these potential trigger events occur for a typical consumer with the frequency with which the same events occur in the three

months prior to an RIS purchase being made, it is possible to estimate the impact of each event upon the likelihood of making an RIS purchase. Events that happen much more often just prior to consumers deciding to make an RIS purchase are the most likely to have triggered that purchase. A binary logistic regression model was fitted to event frequency data for both purchasers and non-purchasers of RIS products, comparing the last three months against the three months prior to purchase.[139] This model was then used to estimate the percentage change in purchase likelihood when an event occurs once compared to when it does not happen, holding the frequency of all other events unchanged.

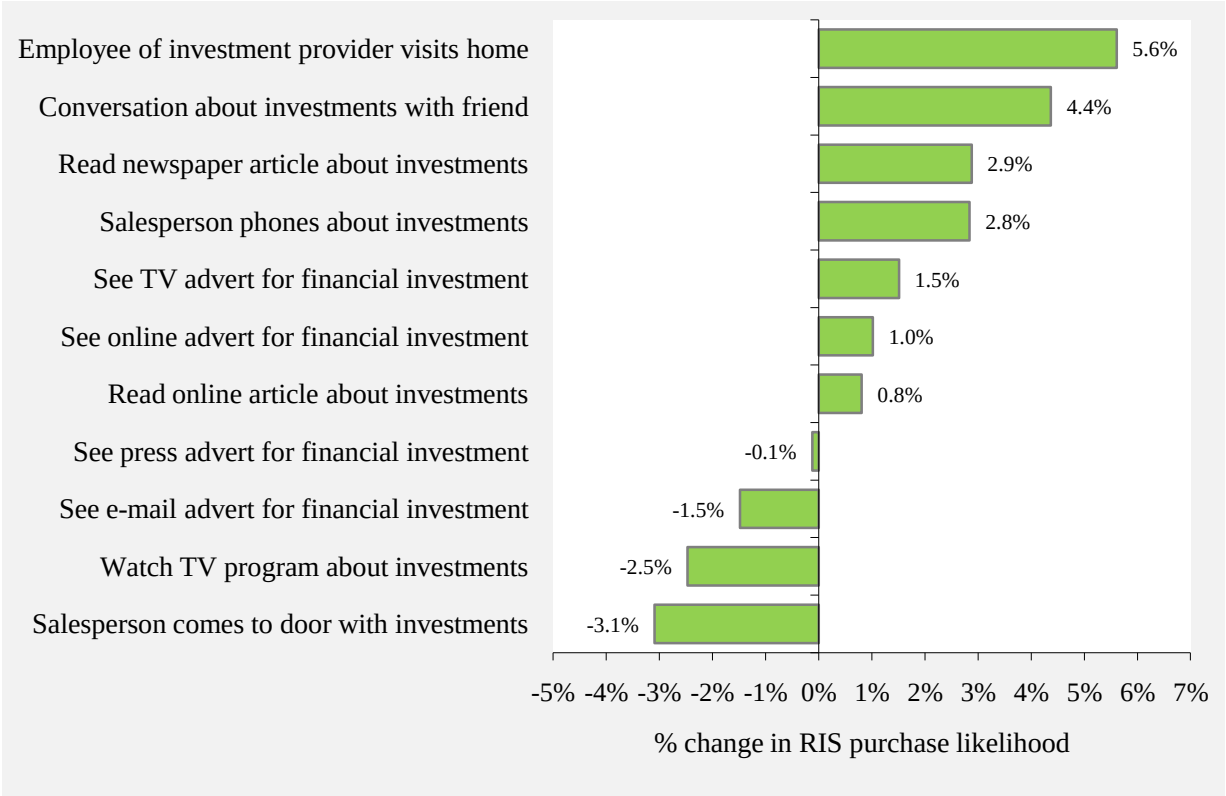


Figure 4.4 – Impact of external triggers on RIS purchase likelihood (EU average)

[139] The binary logistic regression model has a correct classification rate of 86% and a Cox and Snell R^2 of 0.37. Examination of the Wald statistic shows that all but 2 of the 23 variables are individually significant at 95%.

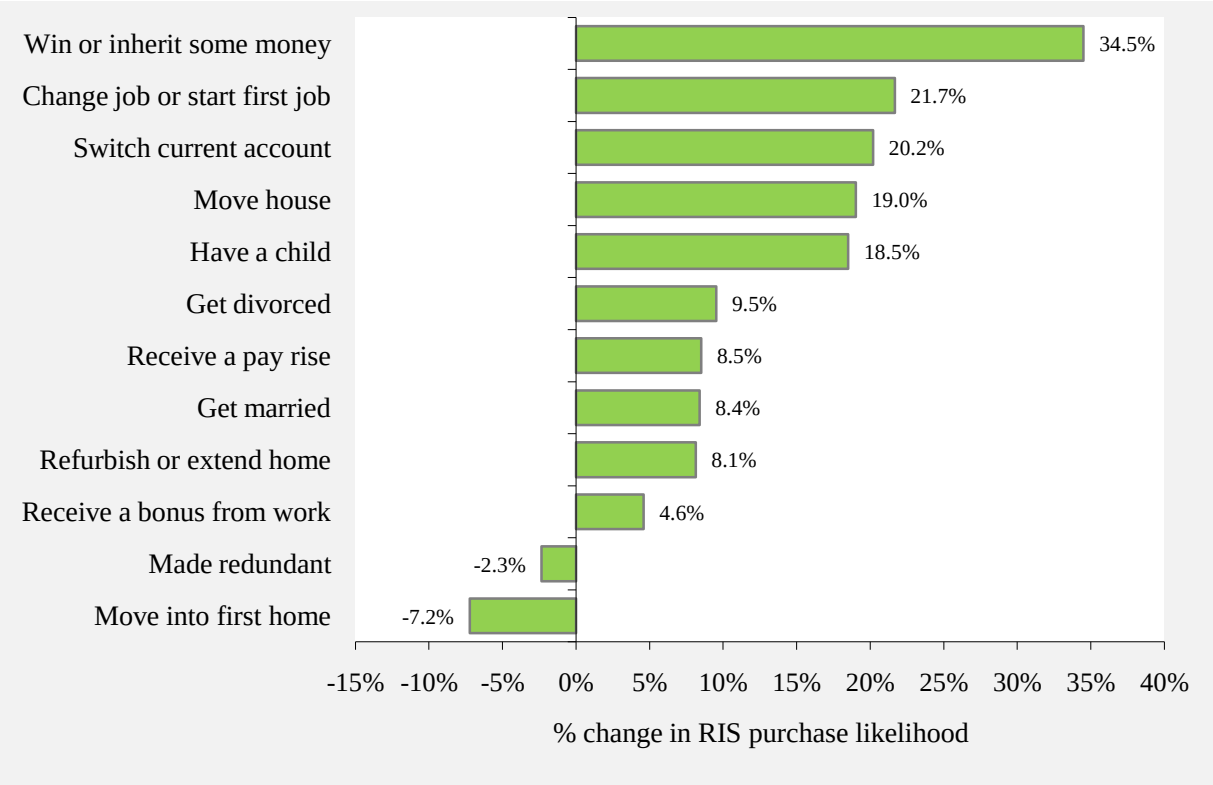


Figure 4.5 – Impact of personal triggers on RIS purchase likelihood (EU average)

241. Although external trigger events, such as advertising and media stories, occur much more frequently than life events, they have a much smaller impact upon the likelihood of making an RIS purchase (see Figures 4.4 and 4.5). The highest impact external event is a visit by an employee of the consumer's bank, insurance company or other financial institution, presumably because this is often at the request of the consumer. Even this is only associated with a five to six percent increase in RIS purchase likelihood. The most frequent advertising events have a negligible impact, with effects that are only a few percentage points in magnitude. In contrast, certain life events have a very large and significant impact upon the likelihood of RIS purchase. Winning or inheriting money – perhaps unsurprisingly – is the event most likely to trigger a consumer to make an RIS purchase, being associated with a 35% increase in purchase likelihood. Other high impact events include changing job, switching current account provider, moving house, and having a child or discovering you are going to have a child. The only two events which significantly suppress RIS purchase likelihood are redundancy and moving into your first home (probably because this is both costly and tends to occur at a young age).

242. Although association between events does not prove causality, the highest impact events are those most likely to be associated with a significant change in income or financial needs. In order to corroborate these findings, we also asked RIS purchasers directly the main reason why they decided to make their investment. The results are summarised in Table 4.19 and Figure 4.6.

Stated Purchase Reason	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Way to save for the future	39%	36%	38%	41%	31%	49%	51%	43%	35%
Effective place to put excess income	18%	14%	20%	13%	32%	14%	7%	13%	15%
Suggested by financial advisor	9%	18%	8%	13%	9%	5%	8%	9%	9%
Offered by bank	7%	7%	8%	9%	12%	3%	2%	9%	1%
Suggested by friend or relative	6%	8%	4%	3%	4%	9%	6%	6%	13%
Opportunity for relatively certain gain	5%	2%	5%	7%	6%	4%	5%	6%	3%
Offered by employer	5%	6%	4%	5%	2%	5%	7%	2%	8%
Visited by bank employee	2%	2%	6%	1%	1%	3%	3%	1%	0%
Salesperson came to door	2%	2%	1%	0%	0%	3%	1%	0%	10%
Saw an advert	2%	0%	1%	1%	0%	2%	2%	2%	6%
Other	4%	5%	5%	8%	3%	3%	7%	9%	0%

Table 4.19 – Stated RIS purchase reason by country

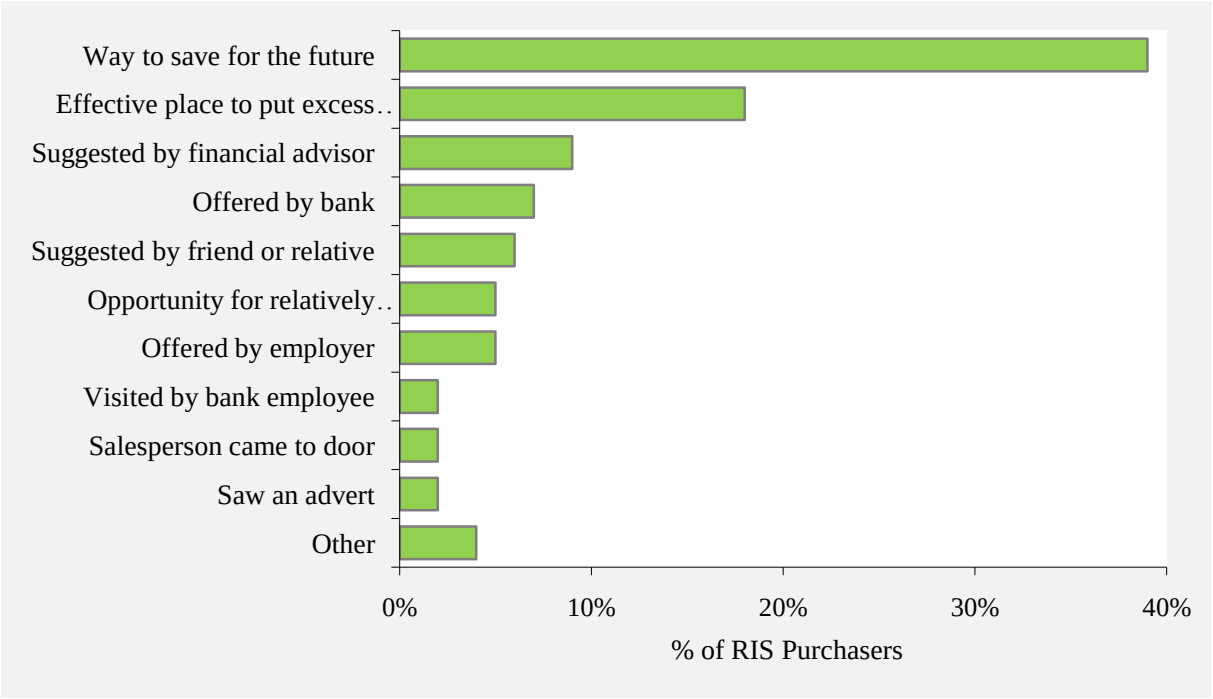


Figure 4.6 – Stated RIS purchase reason (EU average)

243. When asked directly why they initially considered their RIS purchase, a majority of purchasers give rational reasons such as wanting to save for the future (especially in Romania and Poland) or to make effective use of excess income (especially in Italy and Germany). However, one third of RIS purchasers indicate that their purchase was triggered by a suggestion from a third-party, such as a bank, financial advisor, friend, or advertisement. This is especially true in the Czech Republic, where financial advisors trigger nearly one in five RIS purchases, and in the UK, where friends and relatives, door-to-door salespeople, and financial advisors also trigger many purchases.

2.4 Knowledge and Information Search

244. With literally thousands of possible options for RIS purchasers, once a purchase has been triggered, it is impossible for a consumer to assess and compare in detail every available alternative. Thus, we assume that retail investors followed a purchase process in which they identified and selected the RIS product that they finally purchased. The purchase process has three main stages: information search, consideration and choice. In the first stage, the purchaser gathers general information about the types of option available and the relevant attributes to consider. In the second stage, the consumer uses simple heuristics (rules-of-thumb) to filter out options, often based on a single attribute

and without making in-depth assessments of each option, in order to limit the alternatives down to a small "consideration set". In the final stage, a more detailed comparison of the remaining options is made and one of the alternatives is selected.

245. Clearly this framework will be a more accurate description of the purchase process for some RIS purchasers than for others. In some cases the entire process may be compressed into a single decision, for example when the purchase is triggered by the approach of a salesperson offering a single product, and the consumer must decide whether or not to accept the offered product. In other cases there may be little or no search for alternative options, or the search may be "out-sourced" to a third-party advisor. Later in this report we segment the surveyed RIS purchasers according to the process followed, and describe the key differences between investors who made their purchase in different ways. However, we begin by outlining the typical purchase process followed and – where relevant – the experience of obtaining advice.

Level of Prior Knowledge	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Very well informed	13%	16%	19%	11%	13%	4%	17%	9%	13%
Quite well informed	35%	51%	48%	39%	21%	22%	33%	35%	36%
Somewhat informed	35%	26%	23%	35%	47%	42%	37%	31%	38%
Poorly informed	12%	5%	8%	9%	14%	25%	12%	18%	9%
Not at all informed	4%	2%	2%	6%	6%	7%	1%	7%	4%

Table 4.20 – Knowledge prior to RIS purchase by country

246. Table 4.20 shows that prior to considering their RIS purchase, investors believed they were reasonably well informed about financial products, with only 16% claiming to be poorly informed or not at all informed. Purchasers in the Czech Republic and Germany feel most confident about their prior knowledge, while Polish purchasers were least confident.

Sources of Prior Knowledge	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Financial websites	33%	31%	24%	29%	31%	54%	43%	19%	34%
RIS provider staff or salespeople	32%	21%	42%	42%	36%	23%	26%	29%	14%
Newspapers or magazines	32%	26%	32%	21%	38%	34%	30%	33%	34%
Friends and family	29%	28%	29%	26%	27%	31%	35%	33%	28%
Financial professionals	25%	32%	22%	26%	27%	15%	31%	13%	30%
Television	19%	13%	20%	5%	19%	35%	37%	17%	14%
Formal study	9%	19%	10%	6%	5%	12%	16%	6%	7%
Consumer advice organisations	8%	5%	10%	7%	10%	5%	13%	3%	7%
Employed in financial industry	4%	11%	2%	4%	6%	5%	6%	5%	3%

Table 4.21 – Sources of prior knowledge by country

247. Across the EU, the main sources of prior knowledge concerning financial products are financial websites (although a web-based survey probably over-estimates the true figure), staff and salespeople from banks and other financial companies, and newspapers or magazines (Table 4.21). Neither formal study, such as a course in Economics, nor consumer advice organisations play a large educational role for European RIS purchasers. Staff and salespeople play the greatest educational role in Germany and France, while newspapers and magazines are particularly important in Italy, Poland, and the UK.

Sources of Product Research	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Financial websites	37%	41%	28%	30%	36%	57%	53%	23%	37%
RIS provider staff or salespeople	33%	29%	40%	41%	37%	31%	27%	32%	14%
Newspapers or magazines	29%	22%	26%	23%	36%	30%	26%	26%	33%
Friends and family	27%	29%	23%	25%	25%	32%	36%	27%	25%
Financial professionals	25%	36%	20%	20%	31%	16%	33%	16%	31%
Television	16%	14%	13%	7%	18%	26%	33%	10%	10%
Formal study	8%	15%	8%	5%	7%	12%	14%	4%	4%
Consumer advice organisations	7%	7%	9%	7%	7%	5%	11%	1%	5%
Employed in financial industry	4%	11%	3%	4%	8%	2%	5%	3%	2%
Did not search for information	7%	7%	5%	11%	6%	2%	3%	12%	10%

Table 4.22 – Sources of RIS product research by country

248. The same sources of information are used for searching for available investment options, with financial websites, staff and salespeople from banks and other financial companies, and newspapers or magazines again being the most common (Table 4.22). Only 7% of RIS purchasers claim to have not searched for any information before choosing their investment. Compared to the sources of prior financial knowledge, financial websites and staff and salespeople from banks and other financial companies are relatively more likely to be consulted. Consumer advice organisations, television and formal study are more likely to be used for background financial knowledge than searching for available investment options. Again, staff and salespeople play the greatest informational role in France and Germany, while newspapers and magazines play an important role in Italy, the UK and Poland.

249. RIS purchasers were also asked to rate their agreement with a series of statements describing any research they may have done when arranging or making their investment. The following table shows the percentage of purchasers who strongly agree or agree with each statement, being the top two options on a seven-point response scale.

Information Search	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
I sought advice from friends, relatives or colleagues on which company or provider to invest my money with	22%	21%	19%	19%	14%	31%	43%	21%	22%
I sought advice from friends, relatives or colleagues on the type of product to invest in	23%	24%	19%	20%	18%	31%	41%	20%	21%
I sought advice from salespeople on the specific product to invest in	26%	28%	32%	25%	24%	24%	40%	19%	15%
I sought advice from a financial advisor on the specific product to invest in	34%	40%	38%	40%	33%	31%	48%	25%	16%
I read online reviews before making my choice	21%	27%	13%	14%	16%	46%	38%	12%	19%
I read reviews in papers or magazines before making my choice	20%	17%	17%	12%	16%	37%	33%	13%	17%
I visited financial price comparison websites before making my choice	25%	27%	25%	12%	18%	39%	42%	15%	30%
I put a lot of effort into deciding which investment was the best for me	31%	16%	43%	15%	41%	37%	50%	18%	6%
I was in a hurry to set up the investment, so didn't have time to consider the alternatives	12%	8%	7%	9%	8%	10%	19%	7%	25%
I looked around a lot to find what investments were on offer	32%	27%	36%	14%	36%	39%	46%	22%	33%
I compared investments from more than one company or investment provider	34%	36%	38%	20%	29%	53%	47%	19%	29%
I compared different investment options available from one company or investment provider	31%	30%	39%	24%	31%	41%	47%	17%	14%
I had no idea which investment was best for me	21%	16%	20%	22%	19%	20%	27%	16%	24%

Information Search	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
I knew a lot about the different types of investments available	32%	29%	30%	33%	29%	32%	41%	23%	34%
I read through all the information available about the investments I considered	33%	34%	34%	27%	34%	45%	48%	20%	21%
I found all the different types of investments very confusing	21%	16%	27%	20%	15%	24%	20%	26%	17%
I didn't understand all the different jargon describing the investments	20%	11%	16%	18%	17%	17%	24%	22%	30%
I found it easy to work out exactly what type of investment I needed	32%	26%	30%	28%	36%	33%	43%	19%	32%
I was able to work out which investment would give me the best return	33%	29%	28%	29%	25%	44%	51%	20%	39%
I fully understood the information available about the investments I considered	40%	44%	44%	38%	37%	46%	50%	35%	28%

Table 4.23 – Information search during RIS purchase by country

250. We see in Table 4.23 that many RIS purchasers do not appear to do a lot of research, with only three in ten claiming to have put a lot of effort into their decision or to have looked around a lot to find out what investment options were offered. Only a third of purchasers stated that they researched investments from more than one provider, compared more than one product from a single provider, or even read through all the information available for the investments they were researching. The claimed levels of information search are highest in Romania and Germany, and relatively low in the UK and Sweden.

251. The most used source of advice is a financial advisor, with one in three RIS purchasers stating that they consulted a financial advisor about the specific product to choose. Investors in Romania, the Czech Republic, and France are the most likely to consult a financial advisor. Salespeople and financial comparison websites are also consulted by a

quarter of purchasers. Romanian, Polish, and Czech purchasers are the most likely to seek advice from one or more sources. Swedish, British, French, and Italian purchasers are the least likely to seek advice.

252. Consumers clearly struggle with understanding investments, with only one in three investors feeling able to identify which type of investment met their needs or which investment would give the best return. One in five purchasers appear to particularly struggle, claiming that they were confused by the different types of investment, that they didn't understand the jargon used to describe the investments, and that they had no idea which investment was best for them. Only four in ten RIS purchasers feel that they fully understood all the information available about the investments they were researching. Again, these problems were relatively greater for consumers in the UK and Sweden.

2.5 Consideration of Alternatives

253. After searching for information, consumers must decide which options to consider and evaluate in more depth. As in the previous section, Table 4.24 shows the percentage of purchasers who strongly agree or agree with each statement, being the top two options on a seven-point response scale.

Consideration of Alternatives	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
I did not seriously consider any other investments	22%	28%	25%	21%	22%	17%	21%	23%	20%
I seriously considered a small number of different investments	22%	19%	31%	16%	21%	21%	28%	19%	16%
I seriously considered a large number of different investments	22%	15%	27%	15%	18%	27%	34%	11%	17%
I only considered investments from one company	20%	26%	22%	23%	20%	15%	28%	20%	13%
I seriously considered investments from a small number of different companies	21%	16%	30%	11%	18%	19%	33%	16%	16%
I seriously considered investments from a large number of different companies	20%	16%	23%	13%	13%	26%	35%	13%	18%
I only considered investments from companies I had previously heard of	31%	34%	38%	23%	28%	31%	45%	29%	26%
I only considered types of investment I had previously heard of	28%	28%	35%	21%	26%	29%	42%	26%	19%
I only considered investments from companies that I had been recommended	25%	32%	30%	21%	21%	23%	45%	19%	19%
I only considered types of investment that I had been recommended	27%	33%	31%	27%	23%	21%	44%	24%	22%
I spent a long time looking around for options	22%	13%	28%	12%	14%	37%	37%	13%	17%
I looked in lots of different places for options	23%	19%	30%	11%	17%	34%	47%	10%	19%
I shopped around to find the best deal (once I chose a specific type of product)	27%	32%	39%	19%	18%	22%	45%	15%	26%

Table 4.24 – Consideration of alternatives during RIS purchase by country

254. A significant minority of RIS purchasers claim to have only considered a single provider or investment, with only one in five claiming to have seriously considered a large number of alternatives. Consistent with this, less than a quarter of investors said that they spent a long time looking for options or that they looked in lots of different places. Only 27% of purchasers said that they shopped around to find the best deal once they had chosen a specific type of investment. Romanian and German investors are the most likely to have shopped around, while Swedish and Italian investors are the least likely to have shopped around. There is also evidence that many RIS purchasers use simple heuristics to identify the investment alternatives they will consider in more depth. Around three in ten purchasers stated that they used a "recognition heuristic", only considering providers or products that they were familiar with. Around one in four purchasers stated that they relied on recommendations to choose which providers and products to consider. Consistent with much of the Behavioural Economics (BE) literature, RIS purchasers are employing simple strategies to limit the time and cognitive demands of searching for and comparing alternatives.

2.6 Product Choice and Purchase

255. After evaluating and comparing the considered alternatives in more depth, the RIS purchaser must then select their preferred option and purchase the investment. Purchasers were asked to indicate the main reason they chose their investment, and any other reasons that influenced their final selection.

Main Reason for Choice	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
It seemed to me the safest out of all those available	35%	26%	42%	31%	38%	30%	37%	23%	30%
It was the option that offered the highest return	13%	9%	11%	15%	9%	17%	11%	10%	17%
It was the option recommended by a financial advisor	12%	26%	9%	12%	12%	6%	12%	11%	18%
It was the option I was most familiar with	12%	10%	13%	13%	13%	7%	12%	15%	11%
It was the option recommended by my bank or other financial company	9%	7%	11%	12%	10%	7%	4%	12%	3%
It was the option recommended by a family member of friend	6%	8%	4%	4%	6%	10%	4%	9%	7%
It was the first option I looked at	4%	1%	2%	6%	4%	7%	4%	4%	2%
It was the option recommended by my employer	3%	5%	2%	2%	1%	3%	4%	3%	5%
It was the option recommended in a report I read or saw in the media	2%	1%	2%	0%	0%	4%	4%	5%	3%
It was the option recommended by a salesperson	2%	3%	3%	1%	2%	4%	4%	1%	0%
Other	4%	5%	2%	3%	4%	5%	5%	8%	5%

Table 4.25 – Main reason for choosing RIS product by country

256. RIS purchasers appear to be more concerned with risk than return, with one third of investors citing this as the main reason for choosing the investment they selected in Table 4.25. German, Italian, and Romanian investors are the most likely to use risk as their primary selection criterion. Investors in the Czech Republic and the UK are particularly likely to cite a recommendation from a financial advisor as their main reason for choice.

Reasons for Choice	**1st**	**2nd**	**3rd**	**Any**
It seemed to me the safest out of all those available	35%	15%	13%	62%
It was the option that offered the highest return	13%	16%	13%	41%
It was the option recommended by a financial advisor	12%	10%	9%	31%
It was the option I was most familiar with	12%	16%	9%	37%
It was the option recommended by my bank or other financial company	9%	9%	9%	26%
It was the option recommended by a family member of friend	6%	8%	6%	19%
It was the first option I looked at	4%	5%	6%	16%
It was the option recommended by my employer	3%	2%	3%	7%
It was the option recommended in a report I read or saw in the media	2%	4%	5%	11%
It was the option recommended by a salesperson	2%	2%	3%	7%
Other	4%	2%	6%	12%

Table 4.26 – All reasons for choosing RIS product by country

257. Across the top three reasons for choosing an investment, risk and return are again the most-cited factors (see Table 4.26). Familiarity with the chosen option is the third most-cited reason, followed by recommendations from financial advisors (31%) and banks or other financial companies (26%). Only 7% of respondents claim to have been strongly influenced by the recommendation of a salesperson, but – as we shall see later – they may not distinguish between sales and advice from the staff of banks and insurance companies. These findings also rely on the ability of survey respondents to accurately introspect the motivations for their own behaviour, which prior research indicates is often poor. Self-reported measures tend to be biased towards more "socially acceptable"

or rational answers. Nonetheless, risk aversion and familiarity appear to play a key role in RIS purchasers' decision-making.

Decision-Making Responsibility	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
My choice based entirely on the information I had gathered	42%	27%	36%	36%	43%	43%	42%	52%	53%
My choice with a small amount of guidance/reassurance from an advisor	21%	17%	24%	24%	20%	21%	26%	17%	15%
My choice assisted by the input of an advisor	20%	36%	25%	15%	18%	25%	15%	17%	14%
Mostly based on what I was told by an advisor	11%	15%	10%	15%	11%	9%	11%	6%	12%
Entirely based on what I was told by an advisor	6%	5%	5%	10%	7%	2%	5%	7%	6%

Table 4.27 – Decision-making responsibility for RIS purchase by country

258. Nearly six out of ten RIS purchasers state that their final choice of investment was influenced by an advisor in some way, with one in six purchasers stating that their choice was mostly or entirely based on what they had been told by an advisor (Table 4.27). Investors in the Czech Republic, Germany and France are the most likely to be guided by a financial advisor in their choice. Investors in the UK and Sweden are the most likely to claim that their choice was based entirely on the information that they had gathered.

Purchase Channel	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Over the phone	4%	0%	4%	2%	2%	2%	3%	6%	14%
On the internet	18%	7%	18%	12%	13%	27%	10%	35%	27%
With an advisor or salesperson at their office	58%	57%	57%	73%	65%	50%	62%	53%	40%
With an advisor or salesperson at your home/office	20%	37%	22%	13%	20%	21%	26%	7%	19%

Table 4.28 – RIS purchase channel by country

259. Across the EU, nearly four out of five RIS purchases are made in a face-to-face setting, although this varies significantly across Member States (see Table 4.28). In the Czech Republic 93% of RIS purchases were made face-to-face with a salesperson or advisor, often in the purchaser's own home or office. Purchases in Romania, France and Italy also tend to be made in the presence of an advisor or salesperson. Investors in Sweden and the UK are the most likely to purchase an RIS product through a remote channel, with telephone sales being much more common in the UK than in other countries. We return to the purchasers' experiences with advisors and salespeople in more detail shortly, but first we look at the purchase experience and post-purchase satisfaction.

Tied vs. Independent Purchases	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
A financial professional who could only offer products from the company or institution that they work for	46%	48%	38%	56%	56%	42%	56%	35%	38%
A financial professional who was able to offer products from multiple companies or institutions	37%	41%	49%	34%	32%	33%	30%	33%	35%
A website or telephone service offering products from a single company or institution	8%	6%	5%	7%	7%	11%	8%	17%	14%
A website or telephone service offering products from multiple companies or institutions	8%	5%	8%	3%	5%	14%	6%	15%	14%

Table 4.29 – Type of RIS provider by country

260. Table 4.29 shows that more than half of RIS purchases are made from a tied advisor or salesperson, who can only offer products from one provider. German investors are the least likely to buy from a tied advisor or salesperson, with higher than average use of independent advisors. Romanian, Italian, and French investors are the most likely to purchase an RIS product from a tied advisor or salesperson. As above, investors in Sweden and the UK are the most likely to make their purchase through a remote channel.

Cooling-Off Period	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Not available	23%	25%	28%	14%	23%	23%	37%	24%	15%
Offered but not required	12%	10%	11%	12%	10%	15%	15%	6%	16%
Available	41%	31%	40%	48%	41%	38%	24%	27%	51%
Don't know	24%	35%	21%	25%	25%	25%	24%	44%	18%

Table 4.30 – Availability and use of cooling-off period by country

261. European contract law differs across Member States, products, and sales channels, but purchasers of some RIS products in some countries may be offered a "cooling-off period" in which to cancel their purchase without penalty and without giving any reason. For example, the 2002 EC Directive on Distance Marketing of Financial Services states that consumers should have the right to withdraw from the contract within 14 calendar days of receiving the contractual terms and conditions, although life insurance and personal pensions are covered by a different directive which stipulates a 30-day cooling off period, and the right of withdrawal does not apply to financial services whose price depends on fluctuations in the financial market, such as stocks and shares, unit trusts, and other funds. Because of the inconsistency of legislation in this area, it is difficult to conclude whether differences between Member States are caused by differences in legislation or in how effectively providers disclose the right of cancellation.

262. Around a quarter of RIS purchasers were unsure whether or not a cooling-off period was available to them (Table 4.30). In Sweden, 44% of investors were unsure about their cancellation rights, while only 18% of investors in the UK were unsure. Over half of RIS purchasers stated that a cooling-off period was available. Cooling-off periods were most commonly reported by RIS purchasers in the UK (67%) and in France (60%). Cooling-off periods were least commonly reported by RIS purchasers in Sweden (33%) and in Romania (39%).

Perceived Suitability	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Suitable	73%	74%	75%	72%	75%	67%	62%	58%	80%
Not suitable	8%	6%	9%	8%	8%	13%	9%	7%	4%
Don't know	19%	19%	16%	20%	17%	21%	29%	34%	16%

Table 4.31 – Perceived suitability of purchased RIS product by country

263. Table 4.31 shows that, typically, RIS purchasers feel that they chose the right investment, with only 8% feeling that they purchased the wrong product. However, one in five purchasers is unsure of the suitability of their investment. Investors in the UK are the most likely to feel they chose a suitable investment, while investors in Poland are the least likely. Uncertainty about the suitability of RIS purchases is highest in Sweden and Romania.

Post-Purchase Satisfaction	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Very satisfied	30%	23%	35%	29%	25%	22%	28%	31%	41%
Quite satisfied	45%	55%	42%	47%	43%	49%	52%	44%	40%
No opinion	15%	15%	12%	15%	24%	13%	7%	19%	14%
Slight regret	6%	6%	6%	6%	6%	11%	9%	4%	3%
Strong regret	3%	2%	4%	3%	2%	5%	4%	2%	2%

Table 4.32 – Post-purchase satisfaction by country

264. Ratings of post-purchase satisfaction show a similar pattern in Table 4.32. Three quarters of RIS purchasers state that they are very satisfied or quite satisfied with their investment. Satisfaction is highest in the UK, where 81% of RIS purchasers are satisfied with their choice and only 4% of RIS purchasers are dissatisfied with their choice. Satisfaction is lowest in Poland, where 71% of RIS purchasers are satisfied with their choice and 16% of RIS purchasers are dissatisfied with their choice.

Post-Purchase Knowledge	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Yes, I know how well my investment is currently performing	58%	62%	59%	61%	57%	56%	53%	50%	63%
I don't know but I can find out if I need to	36%	36%	34%	35%	39%	39%	40%	45%	31%
I don't know and I'm not sure how / unable to find out	6%	2%	7%	5%	4%	5%	7%	5%	6%

Table 4.33 – Knowledge of post-purchase RIS performance by country

265. Although only six out of ten RIS purchasers know how their investment is performing, the majority of the remainder state in Table 4.33 that they would know how to find out if they needed to. Knowledge of current performance is greatest for investors in the UK, the Czech Republic, and France. The 58% of purchasers who stated that they knew how well their investment is currently performing were also asked to evaluate that performance against their expectations.

Performance Evaluation	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Much better than expected	8%	4%	9%	6%	9%	3%	10%	13%	10%
Slightly better than expected	13%	5%	18%	6%	13%	8%	13%	16%	20%
As expected	49%	61%	49%	46%	54%	42%	49%	44%	50%
Slightly worse than expected	18%	18%	17%	25%	14%	22%	17%	18%	14%
Much worse than expected	10%	10%	6%	16%	10%	22%	9%	6%	5%
No opinion	2%	1%	2%	1%	1%	3%	2%	3%	1%

Table 4.34 – Evaluation of RIS performance by country

266. Amongst RIS purchasers who know the current performance of their investment, the performance is generally good: seven out of ten purchasers state that the performance meets or exceeds their prior expectations (see Table 4.34). Performance evaluations are most positive in the UK, Germany, and Italy. Performance evaluations are least positive in Poland, where 44% of investments are rated as performing below expectations, and in France, where 40% of investments are rated as performing below expectations.

Post-Purchase Understanding	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
I understand all aspects	42%	40%	46%	39%	36%	46%	38%	32%	45%
A few things are unclear	43%	45%	42%	43%	48%	41%	45%	44%	39%
Mostly unclear	11%	11%	7%	14%	14%	10%	14%	18%	10%
I don't understand how it works	4%	4%	5%	5%	2%	3%	3%	6%	5%

Table 4.35 – Post-purchase understanding of RIS product by country

267. The majority of RIS purchasers feel that they understand how their investment works, with 85% stating they understand all or most aspects of the product in Table 4.35. Post-purchase understanding is high across most Member States, with only Sweden lagging slightly behind: 24% of Swedish RIS purchasers are mostly or totally unclear about how their investment works after purchasing it.

3 RIS Advisor Experiences

3.1 Role of Advisor

Advisors Consulted	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Employee of an investment provider	48%	34%	50%	58%	53%	48%	45%	46%	30%
Financial advisor	27%	44%	21%	28%	19%	32%	34%	11%	33%
Insurance broker	11%	8%	16%	6%	7%	8%	32%	5%	4%
Investment broker	9%	6%	2%	3%	18%	10%	16%	2%	9%
Doorstep or telephone salesperson	5%	10%	8%	1%	1%	10%	7%	2%	1%
Accountant	4%	3%	2%	4%	2%	6%	11%	2%	3%
Any other financial professional	6%	7%	5%	4%	6%	9%	11%	4%	5%
Friends and relatives	25%	27%	28%	20%	19%	35%	29%	22%	25%
No direct contact	14%	9%	13%	10%	13%	12%	5%	27%	25%

Table 4.36 – Type(s) of advisor consulted by country

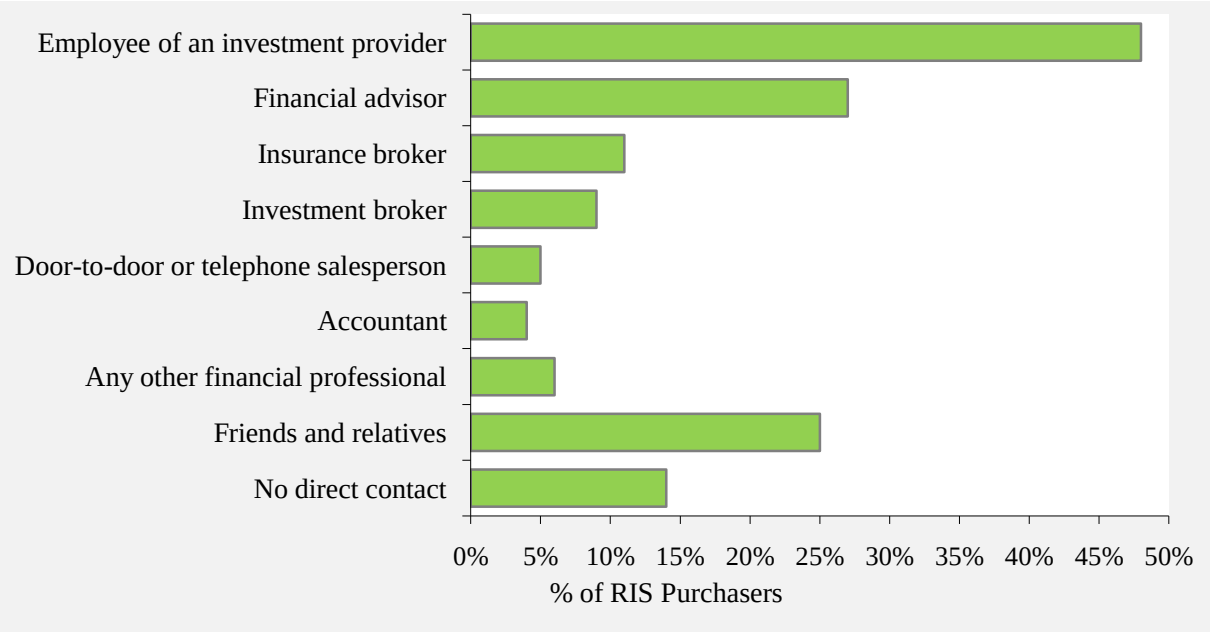


Figure 4.7 – Type(s) of advisor consulted (EU average)

268. The large majority of RIS purchasers consult an advisor at some point in the purchase process, for information, advice, or to open the investment (see Table 4.36 and Figure 4.7). Only 14% of investors have no direct contact with an advisor at any point, although this figure rises to 27% in Sweden and 25% in the UK. The most commonly-consulted individuals are the staff of banks, insurance companies and other investment providers, with almost half of all RIS purchasers having some contact with them for advice or information. Employees of investment providers play the largest role in France and Germany. Financial advisors are also commonly consulted, and are the main source of advice and information in the Czech Republic and in the UK. Brokers are only consulted by around one in ten RIS purchasers, but insurance brokers are relatively important in Romania and Italy, while investment brokers are relatively important in Italy and Romania. Few RIS purchasers have contact with doorstep or telephone salespeople, suggesting that RIS providers rely on advertising or other forms of direct marketing to generate sales. Word-of-mouth and recommendations also play a large role in the RIS market, with one quarter of all investors consulting friends or relatives for advice or information. Friends and relatives are most frequently consulted in Poland, and least frequently consulted in Italy.

Number of Advisors Consulted	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Consulted one or more financial professionals	79%	87%	79%	85%	80%	79%	90%	62%	65%
Average number of financial professionals consulted	1.4	1.3	1.3	1.2	1.3	1.6	1.7	1.2	1.3

Table 4.37 – Number of advisors consulted by country

269. We see in Table 4.37 that four fifths of RIS purchasers consult at least one financial professional for advice, information or to open an investment. Romanian and Czech investors are the most likely to consult at least one financial professional. Swedish and British investors are the least likely to consult a financial professional, consistent with the higher levels of distance selling observed in these two countries. Of those RIS purchasers who do have contact with financial professionals, this is typically just one or two types of advisor. Investors in Romania and Poland consult with the widest range of types of advisor, but this figure is fairly consistent across Member States.

Main Professional Advisor	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Employee of an investment provider	51%	34%	55%	61%	55%	45%	36%	73%	38%
Financial advisor	25%	42%	17%	27%	15%	29%	23%	12%	44%
Insurance broker	9%	7%	16%	5%	5%	4%	22%	6%	4%
Investment broker	7%	3%	2%	2%	16%	7%	9%	2%	10%
Doorstep or telephone salesperson	3%	8%	6%	1%	1%	7%	3%	2%	0%
Accountant	2%	1%	2%	1%	2%	3%	3%	1%	1%
Any other financial professional	4%	5%	3%	3%	4%	4%	5%	3%	4%

Table 4.38 – Main professional advisor consulted by country

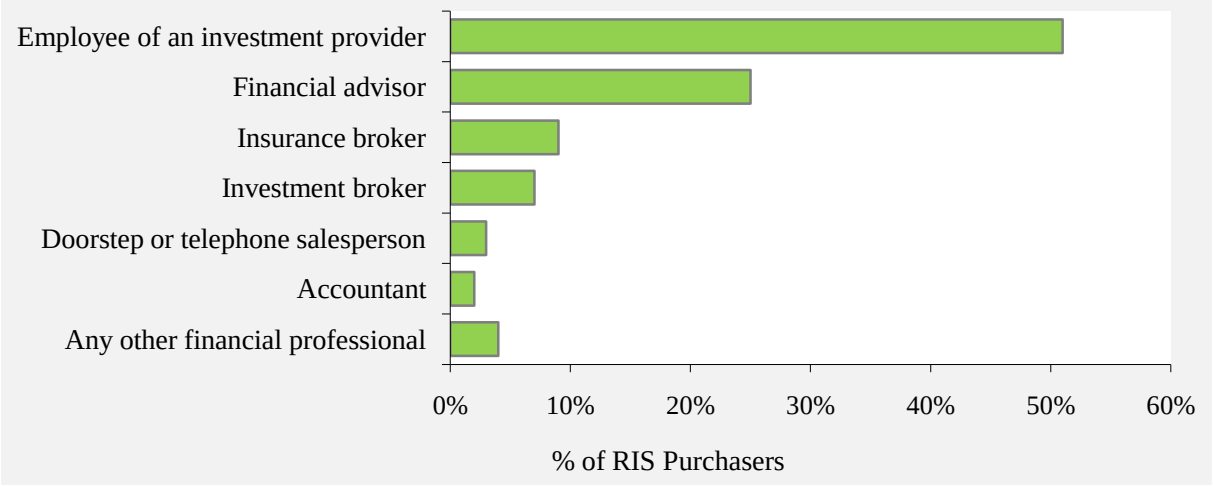


Figure 4.8 – Main professional advisor consulted (EU average)

270. Of those RIS purchasers who did come into contact with one or more financial professionals, around half of them spent the most time with an employee of a bank, insurance company, or other investment provider (see Table 4.38 and Figure 4.8). Another quarter had most contact with a financial advisor. These figures vary widely between Member States: only 34% of Czech investors have most contact with an employee of the investment provider, in contrast to 73% of Swedish investors. Again, we see that financial investors are particularly important in the RIS market in the UK and the Czech Republic, where advisors represent an important sales channel for RIS providers. The low prevalence of doorstep or telephone sales suggests that RIS products are typically proactively bought by consumers, although financial advisors and investment providers could be using existing relationships to cross-sell RIS products to their customers.

Advisor Involvement	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
The first person to suggest making an investment	25%	18%	19%	24%	16%
One of the first people I went to for information or advice	22%	23%	28%	18%	20%
Consulted as part of exploring the available options	26%	28%	26%	27%	35%
Helped me make my final decision	14%	14%	11%	15%	15%
Involved in all stages of opening the investment	13%	17%	15%	16%	14%

Table 4.39 – Advisor's involvement in RIS purchase

271. This suggestion is supported by the observation that, as we see in Table 4.39, when an employee of the RIS provider played the largest role in the purchase process, they initiated the purchase on at least a quarter of occasions, a similar proportion to doorstep and telephone salespeople. Financial advisors are more involved later in the purchase process, typically being consulted as part of exploring the available options. In the majority of cases, the role of the financial professional consulted was to provide information and advice but not to help make the final choice. Table 4.40 shows that, in most cases, the financial professional who played the greatest role in the RIS purchase process also executed the purchase by opening or arranging the investment. Financial advisors clearly play sales and execution roles, as well as their primary role of providing information and advice.

Executed Investment	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Yes	83%	81%	76%	85%	57%
No	17%	19%	24%	15%	43%

Table 4.40 – Execution of RIS purchase

3.2 Advice Process

Information and Advice Provided	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Gave factual information about a single investment	26%	20%	24%	31%	22%
Gave factual information about a number of different investments	54%	56%	54%	44%	47%
Gave information on the rates and costs of specific investments	37%	37%	28%	32%	39%
Explained the technical terms and conditions of investment(s)	32%	34%	29%	35%	36%
Explained the differences in benefits and risks of different investment types	40%	43%	37%	36%	36%
Suggested the type of investment that was best for the average person	19%	22%	18%	18%	26%
Suggested a specific investment product that was best for the average person	12%	11%	17%	16%	12%
Recommended type of investment best suited to me considering my personal situation	31%	43%	29%	26%	27%
Recommended the specific product I should invest in given my personal situation	19%	27%	18%	12%	19%

Table 4.41 – Information and advice provided

272. The principal types of information and advice given by the main financial professional involved in an RIS purchase are factual information about a number of different types of investment, and an explanation of the risks and benefits of different types of investment (see Table 4.41). Where recommendations are made, they tend to be tailored to the personal situation of the RIS purchaser, and are more likely to be recommendations for types of investments rather than a specific product. Employees of banks, insurance companies and other investment providers (who could be trained advisors or salespeople) provide similar advice and information to that provided by financial advisors, although they are more likely to give information about just a single investment, and they are less likely to make a personalized recommendation.

Asked About Objectives	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Asked verbally	68%	64%	58%	63%	55%
Filled out a form	28%	40%	41%	29%	42%
No	12%	7%	10%	13%	14%

Table 4.42 – How purchaser was asked about investment objectives

273. We see in Table 4.42 that, in most cases, the main financial professional involved in the RIS purchase process ascertained the purchaser's objectives for their investment. In many cases this was only done verbally, with financial advisors and brokers the most likely to gather the information in a written format.

Asked About Financial Situation	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Asked verbally	59%	62%	55%	68%	56%
Filled out a form	24%	40%	42%	18%	35%
No	22%	9%	12%	17%	15%

Table 4.43 – How purchaser was asked about financial situation

274. The main financial professional involved in the RIS purchase process is less likely to ascertain the details of the purchaser's current financial situation, although this still happens in most cases (Table 4.43). Employees of banks, insurance companies and

other investment providers are least likely to ascertain this information, while financial advisors are the most likely to ascertain this information. Again, financial advisors and brokers are the most likely to gather the information in a written format.

Asked About Knowledge/Experience	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Asked verbally	58%	66%	55%	61%	64%
Filled out a form	20%	28%	33%	22%	27%
No	28%	16%	19%	25%	18%

Table 4.44 – How purchaser was asked about financial knowledge

275. The main financial professional involved in the RIS purchase process is least likely to ascertain the purchaser's knowledge and experience of financial products, although this happens in many cases (Table 4.44). Employees of banks, insurance companies and other investment providers are least likely to ascertain this information, while financial advisors are the most likely to ascertain this information. Once more, financial advisors and brokers are the most likely to gather the information in a written format.

Advice Format	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Verbal information or advice	71%	62%	60%	76%	61%
Written information or advice about investment products	44%	46%	52%	44%	45%
Written report about personal needs and circumstances	14%	29%	15%	14%	19%

Table 4.45 –Format in which advice was provided

276. Table 4.45 shows that the information and advice provided by the main financial professional involved in the RIS purchase process is often in both verbal and written formats. Employees of banks, insurance companies and other investment providers, and doorstep and telephone salespeople tend to give more information verbally than brokers and financial advisors do. Financial advisors are twice as likely as most other financial

professionals to provide a written report with advice tailored to the RIS purchaser's personal needs and circumstances.

Delay in Acting on Advice Received	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Acted on it immediately	44%	27%	24%	26%	18%
Waited 1 or 2 days before acting	24%	22%	30%	23%	29%
Waited 1 to 2 weeks before acting	20%	31%	30%	36%	28%
Waited more than 2 weeks before acting	9%	17%	15%	14%	19%
Chose not to act on this particular advice	2%	2%	1%	0%	6%

Table 4.46 – Delay in acting on advice received

277. In general, RIS purchasers tend to act within a few days of receiving information or advice from the main financial professional involved in the purchase process (see Table 4.46). Purchasers are much more likely to immediately act upon information or advice received from employees of banks, insurance companies or other investment providers than information or advice received from other types of financial professional.

3.3 Trust in Advisors

278. Given that so many RIS purchasers consult financial professionals for advice or information, and given that the majority of those who do tend to act upon the information received within a few days, it would be surprising if there were high levels of mistrust in advisors. It is perhaps of more interest to ask whether or not investors are aware of potential conflicts of interest, such as biases introduced by the commission payments received by an advisor. In this section we look at the degree of trust RIS purchasers have in the advice they received, and whether they felt the advisor was biased in any way.

Trust in Advice	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Completely	34%	34%	26%	21%	25%
Mostly	52%	53%	54%	60%	55%
Somewhat	12%	11%	18%	14%	16%
Very little	1%	1%	2%	3%	1%
Not at all	1%	1%	0%	2%	3%

Table 4.47 –Degree of trust in advice received

279. As expected, Table 4.47 shows that RIS purchasers who had contact with a financial professional tend to mostly or completely trust the information or advice received from the main financial professional involved in the purchase process. Employees of banks, insurance companies and other investment providers are as trusted as financial advisors, and both groups are slightly more trusted than doorstep and telephone salespeople, and brokers.

Perceived Bias	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Gave completely independent advice or information	52%	53%	41%	36%	55%
Slightly biased towards particular companies or investments	29%	33%	37%	36%	28%
Openly biased towards particular companies or investments	14%	9%	15%	14%	10%
Only interested in promoting particular companies / investments	5%	5%	6%	15%	7%

Table 4.48 – Perceived bias in advisor

280. In Table 4.48 we see that RIS purchasers who had contact with a financial professional often perceive some bias in the information or advice received from the main financial professional involved in the purchase process. Financial advisors are seen as most

independent and least biased towards particular providers or investments, although 47% of RIS purchasers still perceived at least a slight bias. Doorstep and telephone salespeople are seen as the most biased towards particular providers or investments, with three in ten purchasers perceiving an open or over-riding bias in the information or advice provided. The fact that more than half of RIS purchasers who had most contact with an employee of a bank, insurance company or other investment provider perceived the individual to be completely independent and unbiased suggests some considerable naïvety on the part of these investors, given that employees of an investment provider can usually only offer investments from their own product range.

281. In Table 4.49 below, we show the percentage of RIS purchasers who strongly agree or agree with each statement, being the top two options on a seven-point response scale.

Sales Pressure	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
The advisor or salesperson was happy to give me time to consider my decision	67%	68%	56%	56%	66%
The advisor or salesperson did not push me to into anything I did not want	60%	61%	52%	48%	59%
I felt under pressure to follow the advice of the advisor or salesperson	4%	6%	7%	6%	6%
The advisor or salesperson's technique was aggressive	3%	5%	9%	8%	7%
The advisor or salesperson would not take no for an answer	6%	7%	10%	10%	11%

Table 4.49 – Perceived sales pressure from advisor

282. RIS purchasers who had contact with a financial professional sometimes feel under pressure to make a purchase from the main financial professional involved in the

purchase process, although they are more likely to feel hurried than pressured. Doorstep and telephone salespeople and brokers are the most likely type of financial professional to be perceived as hurrying the RIS purchaser, or to be perceived as overly-persistent or aggressive. Nearly one in ten RIS purchasers felt that these individuals would not take no for an answer or employed aggressive sales techniques.

Advisor Commission	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Paid a fee for providing advice or information	3%	6%	5%	3%	6%
Paid a fee to arrange or set-up the investment	4%	5%	8%	8%	5%
Received a commission or bonus for selling investment	16%	38%	34%	36%	22%
Will receive a commission or bonus in the future if investment performs well	8%	11%	10%	10%	10%
Did not receive any money that they would not otherwise have received	32%	19%	23%	12%	32%
Don't know	37%	22%	20%	31%	24%

Table 4.50 – Advisor remuneration

283. There is obvious uncertainty and confusion in RIS purchasers' knowledge of the way the main financial professional involved in the purchase process is incentivised (Table 4.50). While a significant proportion of purchasers recognise that financial advisors, brokers, and doorstep and telephone salespeople earn a commission on sales (and that the commission is usually not contingent on the future performance of the investment),

more than four in ten purchasers either do not know about the financial incentives of their advisor, or believe that the advisor has no financial incentive to encourage purchase. This uncertainty and confusion is much higher when the main contact is with an employee of a bank, insurance company or other investment provider. 37% of these RIS purchasers did not know about the financial incentives of their advisor, and another 32% thought (probably erroneously in many cases) that the advisor had no financial incentive to encourage them to make a purchase. It is relatively uncommon for any type of financial professional to receive a direct payment in return for advice or execution of an RIS purchase.

Incentive Disclosure	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Saw/received written information	15%	21%	17%	10%	26%
Told verbally	15%	23%	27%	14%	16%
Did not receive any information	43%	35%	37%	52%	31%
Don't remember	27%	21%	20%	23%	27%

Table 4.51 – Disclosure of advisor incentives

284. The frequency with which financial incentives are disclosed to RIS purchasers varies significantly depending upon the type of financial professional they had the most contact with as part of the purchase process (see Table 4.51). When incentives are disclosed, it tends to be verbally rather than in a written format. Incentive disclosure is most common for financial advisors and brokers. Doorstep and telephone salespeople are the least likely to disclose incentives, with only one quarter of RIS purchasers recalling receiving any information about how the salesperson was paid. Similarly, only three out of every ten RIS purchasers recall receiving information on how the employee of a bank, insurance company or other investment provider was paid. Levels of recall are also quite low, with around one in four RIS purchasers unable to remember whether or not they received this information, suggesting it was not a high priority in their decision-making process.

Influenced by Incentives	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Didn't think about it	36%	28%	28%	36%	29%
No	51%	52%	53%	45%	55%
Slightly	8%	12%	14%	10%	9%
Yes	4%	7%	5%	8%	7%

Table 4.52 – Perceived impact of incentives on advisor

285. Table 4.52 shows that around of half of RIS purchasers state that the way the main financial professional involved in the purchase process was paid did not influence their confidence in the information or advice received. Interestingly, RIS purchasers who had the most contact with a financial advisor or broker were more likely to say they were influenced by knowledge of incentives than RIS purchasers who had the most contact with an employee of a bank, insurance company or other investment provider. This perhaps suggests that the higher levels of disclosure caused investors to pay more attention to the possible influence of advisor incentives.

Recommend or Use Again	Provider's Staff	Financial Advisor	Broker	Salesperson	Other
Yes	75%	78%	66%	63%	72%
No	9%	7%	15%	16%	8%
Don't know	16%	14%	19%	21%	20%

Table 4.53 – Satisfaction with advisor

286. Despite concerns about bias, sales techniques, and financial incentives, the majority of RIS purchasers would recommend the main financial professional involved in the purchase process to a friend or would make another purchase from them (see Table 4.53). Satisfaction is highest for financial advisors and employees of banks, insurance companies and other investment providers. Satisfaction with doorstep and telephone salespeople is lowest, with one in six RIS purchasers unwilling to recommend or use them again. Overall, there is little evidence that RIS purchasers perceive bias in the financial professionals who sell them investments, although it is an open question

whether this trust is misplaced due to a naïve understanding of advisor incentives and sales techniques.

4 Common RIS Purchasing Processes

4.1 Characterising Purchase Processes

287. The previous two sections of this report described the typical purchase process for European RIS purchasers and their typical experience with advisors and salespeople. In this section we progress from considering a representative RIS purchaser onto exploring the heterogeneity in the RIS purchasing population. We consider whether there are similarities between the way individual RIS purchasers made their decision, and segment RIS purchasers according to the purchasing process they followed. We begin by returning to the purchase process stages of Information Search and Consideration. Although survey respondents rated their agreement with 33 different statements describing their purchase process, many of these responses are highly correlated. Factor analysis was therefore used to distil the statement responses into seven measures that describe the Information Search and Consideration process followed by each RIS purchaser:[140] The seven factors are summarised in Table 4.54.

[140] Separate factor analyses were conducted on statements related to Information Search and to Consideration, using maximum likelihood extraction and a non-orthogonal Promax rotation. Parallel analysis and inspection of eigenvalues were used to select the appropriate number of factors in each case. Factor scores are standardised to have zero mean and unit variance. The extracted factor solutions explain 50% and 46% of variance respectively.

Stage	Factor	Representative Statement
Information Search	*Research*	"I visited financial price comparison websites before making my choice"
	Informal Advice	"I sought advice from friends, relatives or colleagues on the type of product to invest in"
	Formal Advice	"I sought advice from a financial advisor on the specific product to invest in"
	Knowledge	"I found it easy to work out exactly what type of investment I needed"
	Uninformed	"I was in a hurry to set up the investment, so didn't have time to consider the alternatives"
Consideration	*Shopped Around*	"I spent a long time looking around for options"
	Recognition Heuristic	"I only considered investments from companies that I had been recommended"

Table 4.54 – Factor analysis of purchase process descriptions

288. Cluster analysis was then used to segment survey respondents into groups containing RIS purchasers who made their purchase in a similar fashion to each other.[141] This analysis revealed four types of RIS purchase process, described below. It should be borne in mind that the RIS purchasers in each group did not all buy their RIS product in exactly the same way. Rather, their purchase processes were only more similar to other members of their segment than to the purchase processes of other segments. Nonetheless, the segmentation serves to illustrate the most important ways in which RIS purchase process heterogeneity is expressed.

289. The four types of purchase process in the European RIS market are:

> **Confused Mainstream (CM)**: This purchase process represents the "middle-of-the-road" strategy, not being extreme on any measure except Uninformed. A moderate amount of effort went into searching for information and an average number of options were considered. Purchasers following this process are

[141] Two-step cluster analysis with a log-likelihood distance measure was employed, using the Akaike Information Criterion (AIC) as the clustering criterion to select the number of clusters.

relatively more likely to agree with statements like "I had no idea which investment was best for me" and "I didn't understand all the jargon describing the investments".

Self-Sufficient (SS): This segment is characterised by high scores on Knowledge and low scores on Uninformed and Informal Advice. These purchasers shopped around more than average and were willing to consider unfamiliar RIS providers or products. They also relied on their own knowledge more than recommendations from friends and family. Purchasers following this process are relatively more likely to agree with statements like "I knew a lot about the different types of investments available" and "I fully understood the information available about the investments I considered".

Advice Sought (AS): This segment is characterised by a very in-depth purchase process, with high scores on Research, Informal Advice, Formal Advice and Shopped Around. These purchasers are also the most likely to only consider RIS providers and products they were familiar with and had been recommended, probably because they only score moderately on Knowledge. Purchasers following this process are relatively more likely to agree with statements like "I looked around a lot to find what investments were on offer" and "I sought advice from friends, relatives or colleagues on the type of product to invest in".

Limited Search (LS): In contrast to Advice Sought purchasers, this segment is characterised by low involvement and effort, scoring very low on Shopped Around, Research, and Knowledge. These purchasers are also very unlikely to obtain advice from either formal or informal sources, although they were willing to consider unfamiliar RIS providers or products. Purchasers following this process are relatively more likely to agree with statements like "I did not seriously consider any other investments" and "I only considered investments from one company".

290. The seven purchase process measures are plotted below in Figure 4.9 for each segment. The scores are normalized, so a score of zero implies an average level of agreement with related statements, and a score of +1 implies agreement ratings that are one standard deviation above average.

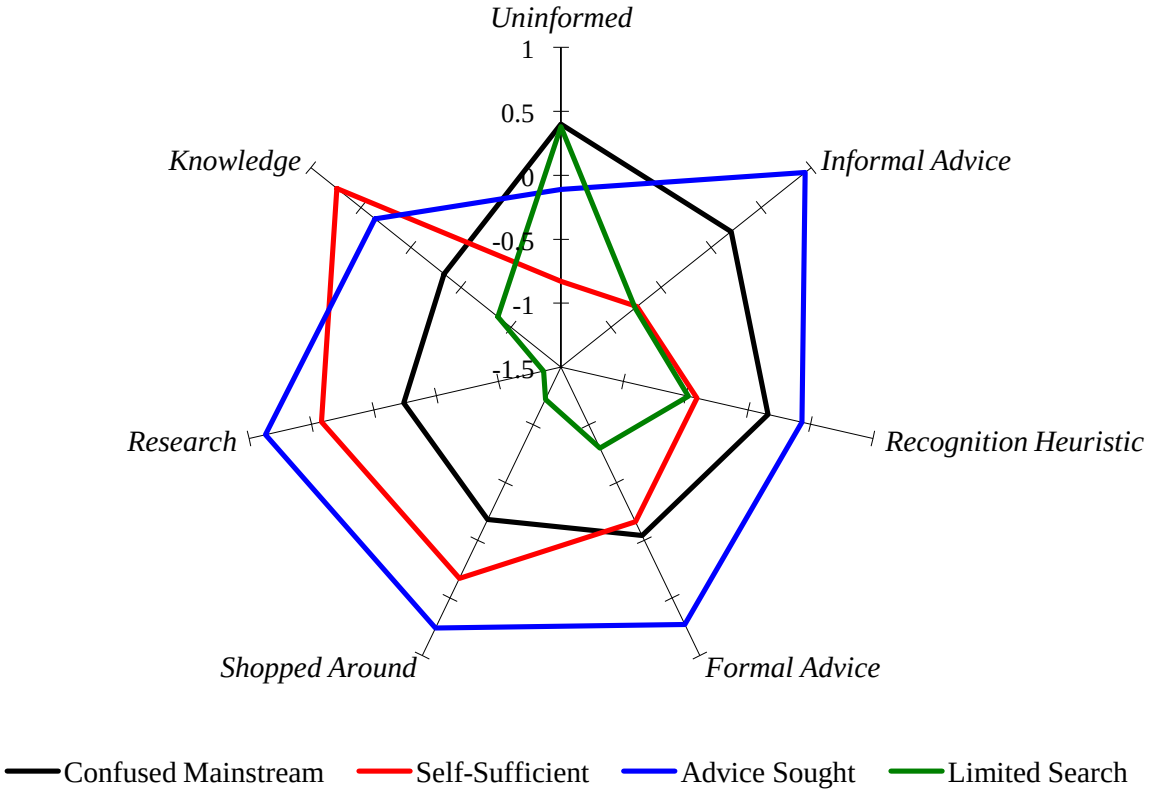


Figure 4.9 – Characterisation of RIS purchase process segments

4.2 Distribution of Purchase Processes

RIS Purchase Process	EU	CZ	DE	FR	IT	PL	RO	SV	UK
Confused Mainstream	34%	37%	27%	34%	31%	27%	26%	33%	61%
Self-Sufficient	22%	28%	26%	23%	31%	24%	11%	21%	7%
Advice Sought	27%	18%	30%	18%	25%	42%	55%	13%	18%
Limited Search	17%	17%	17%	25%	14%	8%	8%	33%	15%

Table 4.55 – Size of RIS purchase process segments by country

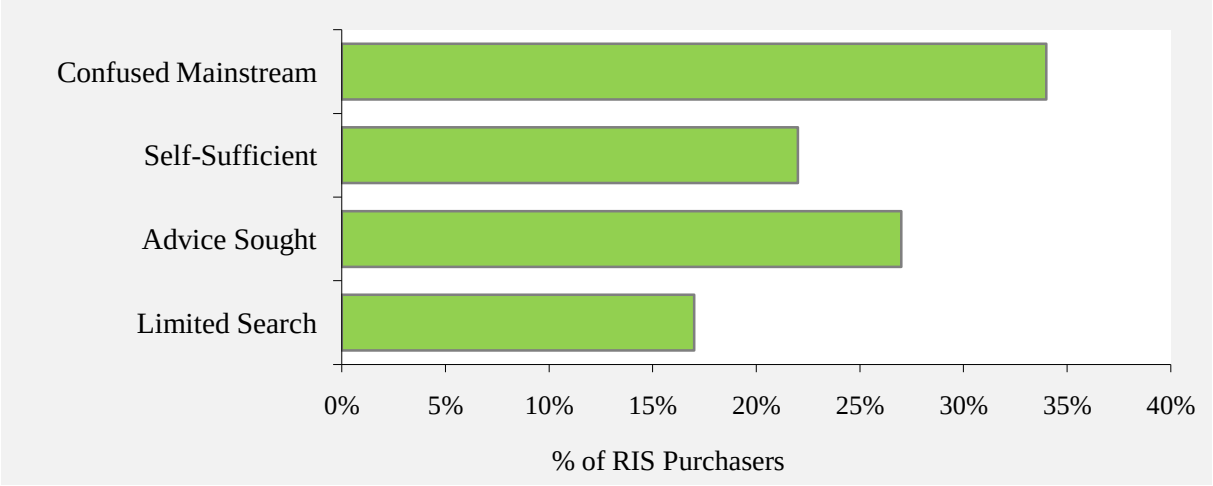


Figure 4.10 – Size of RIS purchase process segments (EU average)

291. The most commonly-observed RIS purchase process is the Confused Mainstream process, which is followed by one in three RIS purchasers (see Table 4.55 and Figure 4.10). The next most common is the Advice Sought process, which is followed by 27% of RIS purchasers. The least common purchase process is that followed by Limited Search purchasers, who comprise only 17% of all RIS purchasers. A significant proportion of investors in all Member States follow the CM purchase process, although the UK has a disproportionately high number of CM purchasers at 61% of all RIS purchasers. The number of SS purchasers is highest in Italy, the Czech Republic, and Germany, while only 7% of British investors follow an SS purchase process. More than half of all Romanian RIS purchasers follow an AS purchase process, which is also common in Poland and Germany. Although relatively few RIS purchases follow an LS process across Europe, one in three investors in Sweden and one in four investors in France follow this process when choosing an RIS product.

Most Recent RIS Product Purchase	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Stocks and shares	28%	33%	22%	22%
Personal pension	21%	15%	31%	21%
Life insurance for investment purposes	18%	22%	22%	23%
Funds	18%	23%	16%	22%
Bonds	10%	4%	6%	6%
Structured products	5%	3%	4%	6%

Table 4.56 – Most recent RIS product purchased by segment

292. Table 4.56 shows that the RIS products bought by purchasers following a Confused Mainstream process are typical of the average purchaser, with a slightly higher tendency to purchase bonds or structured products. Purchasers following a Self-Sufficient process tend to make riskier investments, with a higher-than-average propensity to purchase funds, stocks and shares, and a lower-than-average propensity to purchase personal pensions, bonds, and structured products. Conversely, purchasers following an Advice Sought process have a higher-than-average propensity to purchase a personal pension, while purchasers following a Limited Search process have a higher-than-average propensity to purchase structured products, funds, and life insurance for investment purposes.

RIS Product Holding	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Stocks and shares	41%	52%	35%	35%
Personal pension	35%	28%	40%	28%
Life insurance for investment purposes	30%	35%	35%	28%
Funds	30%	42%	26%	34%
Bonds	16%	18%	15%	12%
Structured products	10%	11%	9%	8%
Number of RIS product types held	1.6	1.9	1.6	1.5

Table 4.57 –RIS products held by segment

293. Across all RIS products held, consumers following a Self-Sufficient purchase process tend to hold the widest range of RIS products and consumers following a Limited Search purchase process hold the fewest types of RIS products (see Table 4.57). Survey respondents only indicated whether or not they held each type of RIS product, without giving detail of the number of products held or the amounts invested. Nonetheless, this figure also indicates that SS purchasers probably hold the highest number of investments and LS purchasers probably hold the lowest number of investments.

RIS Provider	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Bank	55%	67%	53%	58%
Insurance company	18%	17%	23%	14%
Employer	7%	5%	6%	9%
Building society	4%	2%	5%	3%
Pension provider	4%	3%	4%	3%
State	3%	1%	3%	3%
Other	8%	5%	5%	9%

Table 4.58 – RIS product provider by segment

RIS Investment Route	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Directly with provider	83%	89%	88%	85%
Through a third party	17%	11%	12%	15%

Table 4.59 – RIS investment route by segment

294. Self-Sufficient purchasers are relatively more likely to purchase an RIS product from banks, while Advice Sought purchasers are relatively more likely to purchase from insurance companies (Table 4.58). These differences are likely caused by the product preferences described above, with banks more likely to offer funds and insurance companies more likely to offer personal pensions. Confused Mainstream and Limited Search purchasers are relatively more likely to purchase from a third party, but the

majority of purchases are made direct with the provider for all purchase process segments (Table 4.59).

Level of Prior Knowledge	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Very well informed	7%	23%	16%	10%
Quite well informed	30%	45%	43%	20%
Somewhat informed	46%	27%	31%	31%
Poorly informed	13%	4%	8%	26%
Not at all informed	4%	1%	2%	13%

Table 4.60 – Level of prior knowledge by segment

Sources of Prior Knowledge	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Financial websites	28%	45%	37%	15%
RIS provider staff or salespeople	30%	32%	30%	41%
Newspapers or magazines	27%	41%	35%	24%
Friends and family	33%	7%	43%	27%
Financial professionals	23%	24%	32%	18%
Television	14%	16%	29%	16%
Formal study	5%	17%	9%	5%
Consumer advice organisations	7%	10%	10%	5%
Employed in financial industry	2%	10%	3%	4%

Table 4.61 – Sources of prior knowledge by segment

295. Prior to making their most recent RIS purchase, Self-Sufficient purchasers felt the most well informed about financial products, with more than two-thirds of purchasers claiming to be very well or quite well informed (Table 4.60). Interestingly, despite their high propensity to seek advice during the RIS purchase process, a large proportion (59%) of Advice Sought purchasers also felt well informed about financial products prior to purchase. Limited Search purchasers felt the least well informed, with only

three in ten LS purchasers claiming to be very well or quite well informed. The degree of prior knowledge is consistent with the number and type of sources of prior knowledge consulted by each purchaser type (Table 4.61).

4.3 Triggers for RIS Purchase

296. Given the low frequency with which some of the personal trigger events (e.g. births, marriage, divorce) occur, it is not possible to test to see whether trigger events have differential impact on RIS purchasers following each type of process. However, the stated reasons for considering an RIS purchase give some indication of the different triggers and motivations of purchasers in each process segment.

Stated Purchase Reason	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Way to save for the future	38%	35%	48%	31%
Effective place to put excess income	16%	29%	18%	12%
Suggested by financial advisor	12%	6%	7%	10%
Offered by bank	8%	7%	3%	15%
Suggested by friend or relative	7%	2%	8%	6%
Opportunity for relatively certain gain	3%	9%	6%	3%
Offered by employer	4%	3%	3%	9%
Visited by bank employee	2%	2%	2%	3%
Salesperson came to door	3%	1%	1%	3%
Saw an advert	3%	1%	2%	%
Other	4%	5%	3%	8%

Table 4.62 – RIS purchase triggers by segment

297. The most commonly stated reason for purchasing an RIS product – wanting a way to save for the future – is the same for all purchasing segments, as shown in Table 4.62. Self-Sufficient purchasers are relatively much more likely to say they wanted an effective place to put excess income or that they spotted an opportunity for a relatively certain gain because the market was down. SS purchasers are relatively less likely to say

that their RIS purchase was triggered by a suggestion from an advisor, a provider, or a friend or relative. Limited Search purchasers are relatively more likely to say that their RIS purchase was triggered by an offer from their bank or their employer. LS purchasers are relatively less likely to give pro-active reasons such as wanting to save for the future or looking for an effective place to put excess income.

4.4 Information Search

298. The degree to which RIS purchasers research their options and search for alternatives was used to define the four purchase process segments, so we already know that this will vary between the four groups of investors. However, we begin by looking at the sources of product research employed by purchasers following each purchase process.

Sources of Product Research	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Financial Websites	32%	50%	42%	14%
RIS provider staff or salespeople	33%	35%	33%	33%
Newspapers or magazines	25%	38%	34%	18%
Friends and family	32%	6%	41%	18%
Financial professionals	26%	22%	34%	12%
Television	13%	12%	25%	8%
Formal study	4%	15%	9%	3%
Consumer advice organisations	5%	10%	10%	3%
Employed in financial industry	1%	12%	2%	4%
Did not search for information	7%	2%	1%	24%

Table 4.63 – Sources of RIS product research by segment

299. There are significant differences in the number and types of information sources used by purchasers following each process, although Table 4.63 shows that all segments consult employees of banks, insurance companies and other financial institutions equally often. Self-Sufficient and Advice Sought purchasers do much more research than the other two segments. SS purchasers make use of sources such as financial websites, newspapers and magazines, as well as relying upon formal study or their

employment experience in the financial services industry. SS purchasers are very unlikely to consult family or friends for information. AS purchasers also read financial websites, newspapers and magazines, but also consult friends, family, and financial professionals. Limited Search purchasers do little research – one in four LS purchasers claim to do no research at all – beyond consulting employees of banks, insurance companies and other financial institutions.

Information Search	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
I sought advice from friends, relatives or colleagues on which company or provider to invest my money with	18%	2%	51%	7%
I sought advice from friends, relatives or colleagues on the type of product to invest in	20%	2%	52%	7%
I sought advice from salespeople on the specific product to invest in	19%	20%	46%	15%
I sought advice from a financial advisor on the specific product to invest in	26%	28%	54%	23%
I read online reviews before making my choice	10%	28%	37%	3%
I read reviews in papers or magazines before making my choice	8%	23%	39%	3%
I visited financial price comparison websites before making my choice	13%	34%	43%	4%
I put a lot of effort into deciding which investment was the best for me	11%	49%	56%	5%
I was in a hurry to set up the investment, so didn't have time to consider the alternatives	11%	4%	16%	13%
I looked around a lot to find what investments were on offer	16%	46%	57%	3%

Information Search	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
I compared investments from more than one company or investment provider	15%	50%	60%	3%
I compared different investment options available from one company or investment provider	11%	50%	57%	4%
I had no idea which investment was best for me	20%	4%	25%	37%
I knew a lot about the different types of investments available	13%	58%	45%	11%
I read through all the information available about the investments I considered	11%	53%	58%	7%
I found all the different types of investments very confusing	18%	10%	28%	27%
I didn't understand all the different jargon describing the investments	20%	7%	25%	27%
I found it easy to work out exactly what type of investment I needed	16%	50%	47%	16%
I was able to work out which investment would give me the best return	16%	46%	51%	14%
I fully understood the information available about the investments I considered	18%	68%	57%	17%

Table 4.64 – Information search by segment

300. As described previously, there is considerable heterogeneity in the degree to which RIS purchasers search for information and choose which options to consider in more depth (see Table 4.64 above). Confused Mainstream purchasers put a moderate amount of effort into searching for information and consider an average number of options. Self-Satisfied purchasers shop around more than average and rely on their own knowledge

more than recommendations from friends and family. Advice Sought purchasers have a very in-depth information search process, seeking out alternative options from many different providers and different product types. In contrast, Limited Search purchasers' information search processes exhibit low involvement and effort, being very unlikely to obtain advice from either formal or informal sources, despite struggling to understand the product options they are faced with.

4.5 Consideration of Alternatives

301. As with the Information Search process, the number and range of options that RIS purchasers seriously consider and compare are used to define the four purchase process segments, so we already know that these will vary between the four groups of investors. Here we summarise the strength of agreement with statements related to the Consideration decision stage.

Consideration of Alternatives	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
I did not seriously consider any other investments	17%	16%	20%	43%
I seriously considered a small number of different investments	12%	30%	37%	8%
I seriously considered a large number of different investments	7%	33%	41%	2%
I only considered investments from one company	16%	14%	21%	37%
I seriously considered investments from a small number of different companies	12%	26%	34%	7%
I seriously considered investments from a large number of different companies	6%	28%	38%	3%
I only considered investments from companies I had previously heard of	25%	30%	45%	22%

Consideration of Alternatives	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
I only considered types of investment I had previously heard of	19%	27%	43%	21%
I only considered investments from companies that I had been recommended	21%	15%	40%	21%
I only considered types of investment that I had been recommended	20%	17%	43%	30%
I spent a long time looking around for options	8%	31%	42%	0%
I looked in lots of different places for options	7%	34%	48%	1%
I shopped around to find the best deal (once I chose a specific type of product)	11%	39%	51%	4%

Table 4.65 – Consideration of alternatives by segment

302. As described previously, Confused Mainstream purchasers are not extreme in any aspect of their Consideration decision stage, although they are relatively less likely to employ heuristics such as recognition or recommendation to decide which providers and product types to seriously consider (see Table 4.65). Self-Sufficient purchasers consider a relatively high number of providers and product types, and are more likely to employ a recognition heuristic than to use recommendations when deciding which options to seriously consider. Advice Sought purchasers consider the largest number of providers and product types, expending lots of time and effort in the process, using both recognition and recommendations to decide which options to seriously consider. Limited Search purchasers often only consider a single option, based on a recommendation, and put no time or effort into comparing alternatives.

4.6 Product Choice and Purchase

Main Reason for Choice	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
It seemed to me the safest out of all those available	29%	39%	43%	27%
It was the option that offered the highest return	11%	17%	14%	8%
It was the option recommended by a financial advisor	16%	9%	8%	15%
It was the option I was most familiar with	11%	15%	12%	9%
It was the option recommended by my bank or other financial company	10%	7%	6%	14%
It was the option recommended by a family member of friend	7%	0%	6%	8%
It was the first option I looked at	4%	3%	3%	5%
It was the option recommended by my employer	3%	1%	1%	5%
It was the option recommended in a report I read or saw in the media	3%	2%	2%	0%
It was the option recommended by a salesperson	2%	1%	2%	2%
Other	4%	5%	2%	6%

Table 4.66 – Main reason for investment choice by segment

303. Table 4.66 shows that minimizing perceived risk is the most common choice reason given by all types of RIS purchaser, especially Confused Mainstream and Self-Sufficient purchasers. Maximising return is also relatively more important to CM and SS purchasers. Recommendation from a financial advisor is relatively more important in the final choice of Advice Sought and Limited Search purchasers, and LS purchasers are also relatively more influenced by the recommendation of the employee of a bank, insurance company or other investment provider. CM purchasers are the most likely segment to choose the option they were most familiar with.

Decision-Making Responsibility	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
My choice based entirely on the information I had gathered	35%	57%	39%	38%
My choice with a small amount of guidance/reassurance from an advisor	23%	18%	26%	14%
My choice assisted by the input of an advisor	21%	15%	25%	13%
Mostly based on what I was told by an advisor	14%	7%	7%	19%
Entirely based on what I was told by an advisor	7%	3%	3%	15%

Table 4.67 – Decision-making responsibility by segment

304. Confused Mainstream and Advice Sought purchasers typically make their final choice with guidance and input from an advisor of some description, while Self-Sufficient purchasers are more likely to make their final choice independently (see Table 4.67). A significant proportion of Limited Search purchasers make their final decision based mostly or entirely on what they have been told by an advisor.

Purchase Channel	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Over the phone	5%	3%	3%	6%
On the internet	16%	24%	20%	11%
With an advisor or salesperson at their office	57%	58%	55%	66%
With an advisor or salesperson at your home/office	21%	16%	22%	17%

Table 4.68 – RIS purchase channel by segment

305. All purchase process segments tended to purchase their RIS product in a face-to-face setting, primarily in the workplace of the advisor or salesperson (Table 4.68). Self-Sufficient and Advice Sought purchasers are the most likely to use a remote channel,

especially buying on the internet. Confused Mainstream and AS purchasers are relatively more likely to make the purchase in their own home or workplace.

Tied vs. Independent Purchases	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
A financial professional who could only offer products from the company or institution that they work for	48%	38%	42%	63%
A financial professional who was able to offer products from multiple companies or institutions	35%	41%	45%	23%
A website or telephone service offering products from a single company or institution	9%	8%	8%	7%
A website or telephone service offering products from multiple companies or institutions	7%	14%	5%	7%

Table 4.69 – Type of provider by segment

306. When purchasing directly from a financial professional, Confused Mainstream and Limited Search purchasers are more likely to purchase from a tied advisor or salesperson, while Self-Sufficient and Advice Sought purchasers are more likely to purchase from an independent advisor or salesperson (see Table 4.69). SS purchasers are twice as likely as the other segments to purchase remotely from an independent website or telephone service.

Perceived Suitability	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Suitable	66%	88%	80%	56%
Not suitable	8%	3%	6%	15%
Don't know	26%	8%	14%	28%

Table 4.70 – Perceived post-purchase suitability by segment

307. Table 4.70 shows that, after purchase, Self-Sufficient and Advice Sought purchasers are much more confident that they chose the right investment. Limited Search purchasers are the most likely to feel that they bought an unsuitable investment.

Post-Purchase Satisfaction	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Very satisfied	25%	37%	37%	23%
Quite satisfied	44%	50%	48%	34%
No opinion	21%	9%	9%	25%
Slight regret	7%	4%	5%	9%
Strong regret	3%	1%	1%	9%

Table 4.71 – Post-purchase satisfaction by segment

308. As a consequence, Self-Sufficient and Advice Sought purchasers are much more satisfied with the RIS product that they purchased (Table 4.71). Nearly one in five Limited Search purchasers expressed slight or strong regret about their choice, twice as many as in the Confused Mainstream purchase segment.

Post-Purchase Understanding	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
I understand all aspects	31%	67%	40%	32%
A few things are unclear	48%	31%	51%	38%
Mostly unclear	18%	2%	7%	19%
I don't understand how it works	4%	0%	3%	11%

Table 4.72 – Post-purchase product understanding by segment

309. Similar differences occur in the degree to which purchasers understand the investment they made: almost all Self-Sufficient and Advice Sought purchasers feel they understand all or most aspects of the RIS product they bought (see Table 4.72). Three in ten Limited Search purchasers are mostly or completely unclear about how their investment works.

4.7 Use of Advisors

Advisors Consulted	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Employee of an investment provider	45%	47%	50%	50%
Financial advisor	23%	26%	38%	13%
Insurance broker	10%	6%	16%	6%
Investment broker	8%	8%	13%	4%
Doorstep or telephone salesperson	2%	2%	9%	4%
Accountant	2%	2%	9%	1%
Any other financial professional	5%	5%	9%	3%
Friends and relatives	28%	9%	39%	16%
No direct contact	12%	24%	6%	18%

Table 4.73 – Type(s) of advisor consulted by segment

310. Most purchasers have some contact with an advisor of some description during their RIS purchase process, ranging from 94% of Advice Sought purchasers to 76% of Self-Sufficient purchasers (Table 4.73). Employees of banks, insurance companies and other investment providers are the most commonly consulted source of information or advice by RIS purchasers following all types of purchase process. Confused Mainstream purchasers also frequently consult friends and relatives, and financial advisors. Self-Sufficient purchasers rarely consult with anyone else except a financial advisor. Advice Sought purchasers also consult with friends and relatives, financial advisors, and insurance or investment brokers. Limited Search purchasers are the least likely to consult with anyone else, but they do occasionally consult friends and relatives or a financial advisor.

Number of Advisors Consulted	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Consulted one or more financial professionals	77%	72%	88%	73%
Average number of financial professionals consulted	1.2	1.4	1.6	1.1

Table 4.74 – Number of advisors consulted by segment

311. As expected, Table 4.74 shows that a higher proportion of Advice Sought purchasers consulted one or more financial professionals during the purchase process than the other purchase process segments (many of the remaining AS purchasers consulted friends or relatives). Self-Sufficient and Limited Search purchasers are the least likely to have consulted a financial professional for information or advice, although nearly three quarters of them do so. Of those purchasers who consulted at least one financial professional, Limited Search and Confused Mainstream purchasers had contact with the lowest number of financial professionals, typically just one.

Main Professional Advisor	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Employee of an investment provider	51%	56%	42%	64%
Financial advisor	23%	27%	27%	15%
Insurance broker	11%	5%	10%	7%
Investment broker	8%	6%	9%	5%
Doorstep or telephone salesperson	2%	1%	5%	5%
Accountant	1%	2%	3%	1%
Any other financial professional	4%	4%	4%	3%

Table 4.75 – Main professional advisor by segment

312. Limited Search purchasers are the most likely to have their main contact with an employee of a bank, insurance company or other financial institution, and the least likely to consult a financial advisor for information and advice (see Table 4.75). Confused Mainstream and Advice Sought purchasers are most likely to have had their main contact with a broker.

Advisor Involvement	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
The first person to suggest making an investment	21%	12%	19%	33%
One of the first people I went to for information or advice	26%	19%	28%	16%
Consulted as part of exploring the available options	26%	41%	31%	14%
Helped me make my final decision	13%	16%	12%	16%
Involved in all stages of opening the investment	14%	12%	10%	21%

Table 4.76 – Advisor's involvement in decision by segment

313. As we see in Table 4.76, Limited Search purchasers are the most likely to have had the RIS purchase process triggered by a suggestion from a financial professional, while Self-Sufficient purchasers are the least likely. SS purchasers are most likely to consult a financial professional for information and advice rather than involving them more extensively in the decision-making process.

Executed Investment	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Yes	85%	81%	76%	90%
No	15%	19%	24%	10%

Table 4.77 – Execution of investment purchase by segment

314. Table 4.77 shows that while the financial professional who the purchaser had the most contact with during the purchase process was also the person who executed the investment in the majority of cases for all purchase process segments, Advice Sought and Self-Sufficient purchasers are more likely to have obtained advice and information from an advisor who did not also execute the purchase (i.e. played a pure advice role rather than a mixed advice and sales role) than the other two purchase process segments.

Trust in Advice	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Completely	28%	31%	28%	38%
Mostly	52%	55%	60%	43%
Somewhat	17%	13%	11%	15%
Very little	2%	1%	1%	1%
Not at all	0%	0%	0%	4%

Table 4.78 – Trust in advice received by segment

315. Although Limited Search purchasers are the most likely to say they completely trust the information or advice they received from a financial professional, there are no big differences in level of trust in advice between the four purchase process segments (Table 4.78).

Perceived Bias	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Gave completely independent advice or information	42%	55%	52%	49%
Slightly biased towards particular companies or investments	33%	28%	37%	20%
Openly biased towards particular companies or investments	18%	13%	8%	20%
Only interested in promoting particular companies / investments	6%	4%	3%	11%

Table 4.79 – Perceived bias of advisor by segment

316. Table 4.79 shows that Limited Search purchasers are the most likely to perceive that the financial professional whom they had the most contact with during the purchase process had an open or over-riding bias towards particular providers or products, perhaps due to the types of financial professional these purchasers tend to have had the most contact with. Advice Sought purchasers are the least likely to perceive a bias in the financial professional who they had the most contact with during the purchase process.

Influenced by Incentives	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Didn't think about it	31%	25%	26%	45%
No	55%	59%	50%	48%
Slightly	9%	8%	16%	5%
Yes	5%	7%	9%	1%

Table 4.80 – Perceived impact of advisor incentives by segment

317. Limited Search and Confused Mainstream purchasers are the least likely to have thought about a possible bias in the advisor or salesperson that they had the most contact with, while Advice Sought purchasers are the most likely to be concerned about a possible bias (see Table 4.80).

4.8 Demographic Profile

Demographics	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
% Male	62%	72%	59%	60%
Age	48.2	50.2	42.7	50.0
Household income	€ 59,800	€ 68,600	€ 80,500	€ 113,200
Household Size	2.3	2.7	2.9	2.5
Employed full-time	38%	41%	45%	41%
Employed part-time	10%	4%	9%	8%
Self-employed or company owner	8%	15%	10%	7%
Retired	24%	27%	15%	26%
Unemployed	6%	4%	6%	6%
Student	5%	3%	6%	3%
Homemaker	4%	2%	4%	4%
Unpaid carer	0%	0%	0%	0%
Disabled or incapacitated	2%	3%	2%	3%
Other	2%	1%	1%	2%
Worked in financial services	13%	23%	14%	13%

Table 4.81 – Socio-demographic profile by segment

318. Beyond the large apparent differences in household income – which should be treated with caution, as respondents were free to enter any numerical figure they wanted and these also had to be converted into Euros – there is no strong demographic signature for the purchase process segments (see Table 4.81). Self-Sufficient purchasers are more likely to be male, to be self-employed or to own their own company, and to have experience of working in the financial services industry. Advice Sought purchasers are slightly younger and are the most likely to be employed full-time. Overall, differences in the RIS purchase process followed do not appear to be closely related to the demographic background of the purchaser.

4.9 Financial Position, Attitudes and Literacy

Financial Position	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Total savings	€ 35,400	€ 92,600	€ 49,000	€ 43,000
% Pension	42%	45%	53%	37%
% Homeowner	64%	71%	61%	59%
# Financial products	5.2	5.5	4.7	5.0

Table 4.82 – Current financial position by segment

319. Table 4.82 shows that the stated total amount held in savings and investments (excluding pension savings) is highest for Self-Sufficient purchasers, who also hold the widest range of financial products, suggesting they may be more experienced from making previous RIS purchase decisions. Advice Sought purchasers are the most likely to be contributing to a pension, while Limited Search purchasers are the least likely.

Financial Attitudes	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
I believe that you have to take some risks with your money if you want to get ahead	14%	28%	33%	20%
I want my savings to be completely safe, even if it means they're less profitable	37%	41%	60%	48%
I am willing to try anything once	11%	22%	28%	11%
I avoid dangerous financial situations	46%	55%	63%	60%
I try to avoid getting into debt at all cost	48%	58%	59%	56%
I would rather go without than get into debt	51%	60%	61%	57%

Financial Attitudes	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
I don't see taking out credit cards or loans to pay for things as irresponsible	23%	37%	40%	27%
I pay close attention to the conditions of an investment	33%	71%	67%	35%
I like to gather lots of detailed information about each option before making a choice	30%	67%	69%	21%
In general, I always make quick decisions on what to purchase	17%	30%	35%	32%
My finances are healthy enough for me not to have to worry	23%	38%	37%	22%
I am plagued by financial worries	9%	7%	17%	14%
I am in control of my finances	45%	77%	64%	53%
I'd definitely switch savings accounts to get a better interest rate	30%	49%	49%	29%
I leave my finances as they are unless there's a very strong reason for changing them	30%	44%	48%	43%

Table 4.83 – Financial attitudes by segment

320. RIS purchasers who follow each of the different purchase processes do not show big differences in their attitudes to risk or debt. Self-Sufficient and Advice Sought purchasers tend to be more hands-on in managing their money and making purchases, and are more comfortable with the state of their personal finances (Table 4.83).

Risk Preferences	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Take substantial financial risks expecting to earn substantial returns	4%	6%	7%	2%
Take above average financial risks expecting to earn above average returns	12%	17%	18%	11%
Take average financial risks expecting to earn average returns	53%	50%	49%	37%
Not willing to take any financial risks	32%	26%	26%	49%

Table 4.84 – Risk attitudes by segment

321. Limited Search and Confused Mainstream purchasers are the least comfortable with taking financial risks, although all purchase process segments are quite risk-averse (see Table 4.84). Only one in four Self-Sufficient and Advice Sought purchasers are willing to take above-average or substantial financial risks to get higher returns on their investments.

Confidence in Long-Term Finances	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Very confident	11%	20%	16%	14%
Reasonably confident	38%	48%	40%	34%
Not sure	27%	16%	23%	22%
Worry a little	16%	12%	14%	19%
Worry a lot	7%	4%	7%	11%

Table 4.85 – Confidence in long-term finances by segment

322. Table 4.85 shows that Self-Sufficient purchasers are the least worried about the long-term health of their finances, with 68% being reasonably or very confident. Limited Search purchasers are the most concerned about the long-term health of their finances, with three in ten worrying a little or a lot about their financial situation.

Relative Financial Situation	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
A much better situation than most	7%	11%	7%	8%
A slightly better situation than most	35%	38%	32%	36%
The same situation as most people	45%	38%	41%	40%
Slightly worse situation than most	10%	11%	15%	12%
Much worse situation than most	2%	2%	5%	4%

Table 4.86 – Perceived relative financial situation by segment

323. Most RIS purchasers feel they are in a better or similar financial situation to other people in their country, with no big difference in attitudes between the purchase process segments (Table 4.86). Advice Sought purchasers are the most likely to consider their financial situation to be slightly worse or much worse than other people's.

Education and Financial Literacy	Confused Mainstream	Self-Sufficient	Advice Sought	Limited Search
Age left education	20.2	21.4	21.0	20.6
Economics education: A lot	10%	21%	20%	8%
Economics education: Some	21%	23%	33%	17%
Economics education: Little	29%	28%	27%	23%
Economics education: Hardly at all	20%	15%	13%	24%
Economics education: None	20%	13%	7%	29%
Mathematics education: A lot	24%	28%	29%	22%
Mathematics education: Some	43%	46%	46%	45%
Mathematics education: Little	23%	16%	17%	18%
Mathematics education: Hardly at all	6%	5%	6%	8%
Mathematics education: None	4%	4%	2%	7%
Financial Literacy (0-10)	7.3	8.2	7.1	7.5

Table 4.87 – Education by segment

324. RIS purchasers following each type of purchase process are educated to a similar level, although Self-Sufficient and Advice Sought purchasers left full-time education at a slightly later age on average (Table 4.87). SS and AS purchasers are also much more likely to state that a lot or some of their education was devoted to economics, and slightly more likely to state that a lot or some of their education was devoted to mathematics. Limited Search purchasers are the least likely to be well-educated in financial and numerate subjects, yet their applied financial literacy is as high as the other purchase process segments. Their mean score of 7.5 from 10 multiple-choice questions related to applied financial products and concepts was the second highest, with SS purchasers being the most financially literate group, scoring 8.2 out of 10.

5 RIS Purchasers and Non-Purchasers

5.1 Demographic Differences

325. By comparing RIS purchasers (P) to non-purchasers (NP), we can begin to explore whether non-purchasers choose not to invest in RIS products because of their financial situation and needs, or because they are excluded from the RIS market in some way. We begin by considering demographic differences between the two groups.

	% Male		*Age*		*Household Income*		*Household size*	
	NP	*P*	*NP*	*P*	*NP*	*P*	*NP*	*P*
CZ	48%	41%	44.4	42.6	€ 12,500	€ 19,200	2.8	2.8
DE	53%	62%	47.2	47.2	€ 26,900	€ 41,800	1.9	2.3
FR	49%	67%	45.3	50.0	€ 33,400	€ 44,600	2.1	2.4
IT	55%	69%	45.9	49.1	€ 41,500	€ 47,500	2.8	3.0
PL	53%	59%	42.5	37.1	€ 12,300	€ 16,000	2.6	3.0
RO	49%	53%	33.5	36.8	€ 6,400	€ 10,300	3.0	3.0
SV	40%	50%	47.3	47.0	€ 40,600	€ 55,500	1.5	2.2
UK	47%	67%	43.6	51.1	€ 30,900	€ 39,900	2.6	2.0
EU	51%	63%	44.5	46.8	€ 28,400	€ 37,900	2.4	2.5

Table 4.88 – Socio-demographics of RIS purchasers and non-purchasers

326. We see in Table 4.88 that there is a clear tendency for RIS purchasers to be male, with the proportion of males being significantly higher amongst purchasers than amongst non-purchasers in every country except the Czech Republic. Overall, about 63% of purchasers are male. There is also a slight tendency for purchasers to be older than non-purchasers, although this only holds in half of the countries surveyed and the difference is small with a mean age of 45 years for non-purchasers and 47 years for purchasers. The household income figures are somewhat unreliable, as respondents were free to enter any numerical figure they wanted and these also had to be converted into Euros, but there is a clear tendency for purchasers to have a higher household income, with this difference being significant in every country surveyed. Overall, the typical non-purchaser has a household income of €28,400 compared to €37,900 for purchasers. There is no significant difference in household size between non-purchasers and purchasers, and no consistent pattern across Member States.

Employment Index (% Purchaser / % Non-Purchaser)	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Self-employed or company owner	1.8	1.0	2.6	2.1	1.3	1.9	1.9	1.4	0.9
Retired	1.7	0.5	0.8	1.5	1.0	0.4	3.8	1.0	4.0
Employed full-time	1.2	1.4	1.7	1.0	1.2	1.3	1.0	1.2	0.9
Employed part-time	0.9	0.8	0.8	0.8	1.0	1.1	0.9	0.8	0.8
Other	0.7	1.1	0.4	0.6	1.1	0.3	0.8	1.4	1.2
Disabled or incapacitated	0.7	0.3	1.8	0.5	-	0.5	0.7	0.8	0.3
Student	0.7	0.4	0.6	0.4	0.5	1.1	0.3	0.9	1.1
Homemaker	0.7	0.8	0.5	0.6	0.7	0.8	0.3	1.3	0.8
Unemployed	0.6	0.9	0.4	0.6	0.6	0.8	0.7	0.6	0.5
Unpaid carer	0.4	0.7	0.6	0.0	-	-	-	-	1.0

Table 4.89 – Employment (RIS purchasers vs. non-purchasers)

327. RIS purchasers are much more likely than non-purchasers to be self-employed or to own their own company, a pattern that is consistent across all countries surveyed except the UK (Table 4.89). Overall, purchasers are also more likely than non-purchasers to be retired, although this varies widely by Member State. RIS purchasers are much less

likely than non-purchasers to be an unpaid carer, unemployed, a homemaker, studying, disabled or incapacitated through illness. The size of some of these categories is small, so country-level differences should be treated with caution, but the overall trend is consistent with the household income differences observed.

Worked in Financial Services	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Non-purchasers	10%	16%	9%	9%	9%	12%	14%	6%	10%
Purchasers	16%	27%	10%	19%	14%	17%	26%	7%	16%

Table 4.90 – Financial services work (purchasers and non-purchasers by country)

328. Finally, Table 4.90 shows that RIS purchasers are 60% more likely than non-purchasers to work in the financial services industry or to have been employed in this industry in the past. In totality, the demographic differences paint a picture of RIS purchasers who have higher-than-average incomes, are typically employed or run their own business, tend to be slightly older and male, and a significant proportion of them have experience in the financial services industry.

5.2 Financial Differences

	Total Savings		*% Pension*		*% Homeowner*		*# Financial Products*	
	NP	*P*	*NP*	*P*	*NP*	*P*	*NP*	*P*
CZ	€ 2,800	€ 6,500	57%	76%	65%	69%	3.7	5.1
DE	€ 3,300	€ 56,600	23%	45%	30%	44%	3.0	5.8
FR	€ 5,400	€ 45,300	26%	23%	50%	67%	3.6	6.3
IT	€ 6,600	€ 33,900	12%	34%	63%	76%	2.7	5.0
PL	€ 1,000	€ 12,800	51%	75%	53%	60%	3.2	3.9
RO	€ 1,900	€ 3,000	68%	82%	48%	71%	2.2	4.4
SV	€ 9,900	€ 20,500	54%	57%	38%	53%	3.5	5.3
UK	€ 5,400	€ 46,600	30%	38%	48%	76%	3.3	6.6
EU	€ 4,400	€ 38,234	31%	45%	48%	64%	3.1	5.6

Table 4.91 – Financial position (purchasers and non-purchasers by country)

329. The financial position of RIS purchasers and non-purchasers is strikingly different (see Table 4.91 above). Whilst the estimated total savings and investments (excluding pension savings) figures are accompanied by the same caveats as the household income figures, they nonetheless suggest that RIS purchasers have far more financial assets. Whilst the gap between purchaser and non-purchaser varies between Member States, in all cases recent RIS purchasers have far more in savings and investments than non-purchasers. Purchasers are also much more likely to have a pension (except in France), and to own their own home (with or without a mortgage). Across all financial holdings (transactional, savings, secured and unsecured credit, and investments), recent RIS purchasers have significantly more products than non-purchasers. A typical recent purchaser has 5.6 financial products while a typical non-purchaser has only 3.1 financial products.

	Transactional and savings products		*Unsecured credit products*		*Mortgage*		*Insurance*	
	NP	*P*	*NP*	*P*	*NP*	*P*	*NP*	*P*
CZ	1.5	1.6	1.1	1.1	17%	21%	61%	73%
DE	1.5	1.7	0.7	1.0	10%	15%	44%	70%
FR	1.6	2.1	1.1	1.3	19%	22%	47%	67%
IT	1.0	1.3	1.1	1.2	17%	19%	29%	41%
PL	1.3	1.6	1.1	1.1	8%	13%	46%	54%
RO	1.0	1.3	0.9	1.1	6%	14%	32%	55%
SV	0.7	0.9	1.4	1.6	16%	26%	53%	64%
UK	1.7	2.4	0.7	1.1	12%	15%	40%	63%
EU	1.4	1.8	0.9	1.2	13%	17%	41%	61%

Table 4.92 – Financial product holding (purchasers and non-purchasers by country)

Non-RIS Product Holding Index (% Purchaser / % Non-Purchaser)	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Current Account	1.1	1.0	1.0	1.1	1.1	1.0	1.2	1.2	1.1
Credit Card	1.3	0.9	1.4	1.2	1.1	1.1	1.3	1.1	1.5
Charge Card	2.0	1.7	3.4	1.5	1.3	1.2	0.8	1.4	2.3
Saving Account	1.6	1.4	1.2	1.7	2.1	1.5	1.4	1.3	1.5
Tax Free Saving Account	2.2	1.8	2.6	1.5	1.8	2.5	1.6	1.6	2.7
Business Current Account	1.9	0.9	3.1	1.2	1.5	2.2	2.5	1.1	1.3
Business Credit Card	3.0	0.9	4.9	1.4	3.8	2.2	4.7	1.1	1.6
Home Loan or Mortgage Bond	1.4	1.2	1.5	1.2	1.2	1.6	2.2	1.6	1.2
Personal Loan	1.1	0.9	1.4	0.9	0.9	0.9	1.3	1.0	1.0
Insurance	1.5	1.2	1.6	1.4	1.4	1.2	1.7	1.2	1.6

Table 4.93 – Non-RIS product holding (purchasers vs. non-purchasers by country)

330. RIS purchasers hold a greater number of transactional and savings products (e.g. current accounts, deposit accounts) and unsecured credit products (e.g. credit cards, personal loans) than non-purchasers, although the amount of outstanding debt was not recorded (Table 4.92). Purchasers are also more likely than non-purchasers to have a mortgage and to have at least one insurance product. In particular, RIS purchasers are more than twice as likely as non-purchasers to have a tax-free savings account, 50% more likely to hold insurance, and 30% more likely to have a credit card (Table 4.93). Overall, the level of engagement with other financial services and products appears to be higher for RIS purchasers than for non-purchasers.

RIS Product Holding Index (% Purchaser / % Non-Purchaser)	EU	CZ	DE	FR	IT	PL	RO	SV	UK
Stocks and shares	7.4	2.7	11.3	5.8	7.4	7.7	10.7	3.2	4.1
Personal pensions	4.1	3.1	4.5	3.2	5.2	3.0	10.6	1.7	2.4
Life insurance for investment purposes	6.5	3.4	6.3	5.9	6.2	5.8	23.1	2.9	3.3
Funds	12.9	9.2	6.4	4.4	8.2	52.3	17.9	2.7	10.9
Bonds	13.6	4.8	11.9	8.2	16.3	16.0	11.2	8.8	20.5
Structured products	9.5	37.5	-	6.9	14.2	-	23.5	37.3	12.2

Table 4.94 – RIS product holding (purchasers vs. non-purchasers by country)

331. As might be expected, Table 4.94 shows that consumers who have purchased an RIS product within the last five years are also more likely to hold other RIS products, compared to consumers who have not purchased an RIS product within the last five years. This is particularly true for the less-commonly purchased RIS products such as funds, bonds and structured products.

5.3 Financial Attitudes and Literacy Differences

332. Finally for this section of the report, we compare the financial attitudes of recent RIS purchasers to non-purchasers, including risk preferences and trust in different types of financial institution. We also compare the education, numeracy and applied financial literacy of purchasers and non-purchasers. The following table shows the percentage of survey respondents who strongly agree or agree with each statement, being the top two options on a seven-point response scale.

Financial Attitudes	NP	P
I believe that you have to take some risks with your money if you want to get ahead	18%	23%
I want my savings to be completely safe, even if it means they're less profitable	54%	46%
I am willing to try anything once	20%	18%
I avoid dangerous financial situations	65%	55%
I try to avoid getting into debt at all cost	58%	55%
I would rather go without than get into debt	60%	57%
I don't see taking out credit cards or loans to pay for things as irresponsible	30%	31%
I pay close attention to the conditions of an investment	53%	51%
I like to gather lots of detailed information about each option before making a choice	56%	47%
In general, I always make quick decisions on what to purchase	27%	27%
My finances are healthy enough for me not to have to worry	17%	30%
I am plagued by financial worries	25%	11%
I am in control of my finances	53%	58%
I'd definitely switch savings accounts to get a better interest rate	37%	40%
I leave my finances as they are unless there's a very strong reason for changing them	43%	39%

Table 4.95 – Financial attitudes of RIS purchasers and non-purchasers

333. In Tabl4 4.95 we see that recent RIS purchasers are less risk-averse and less debt averse than non-purchasers. Purchasers feel much more in control of their finances and less concerned about their financial position. Interestingly, RIS purchasers are slightly less concerned with paying close attention to the conditions of investments or with gathering detailed information before making a choice, indicating that they may have a lower tendency to procrastinate about financial decisions. Purchasers are also more hands-on with their finances, being more willing to switch accounts to get a better rate.

Risk Preferences	NP	P
Take substantial financial risks expecting to earn substantial returns	3%	5%
Take above average financial risks expecting to earn above average returns	6%	15%
Take average financial risks expecting to earn average returns	28%	49%
Not willing to take any financial risks	63%	32%

Table 4.96 – Risk preferences of RIS purchasers and non-purchasers

334. Although recent RIS purchasers and non-purchasers are both typically risk-averse, purchasers have a greater appetite for risk than non-purchasers (Table 4.96). Purchasers are twice as likely to say that they are willing to take substantial or above-average financial risks with their investments. Non-purchasers are twice as likely to say that they are not willing to take any financial risks. These large differences suggest that risk aversion is a potentially significant barrier to RIS purchase for many consumers.

Confidence in Long-Term Finances	NP	P
Very confident	8%	15%
Reasonably confident	24%	40%
Not sure	25%	23%
Worry a little	22%	15%
Worry a lot	21%	7%

Table 4.97 – Confidence in long-term finances for RIS purchasers and non-purchasers

335. Recent RIS purchasers are much more confident than non-purchasers about their long-term financial situation, with 55% of purchasers being very confident or reasonably confident, compared to 32% of non-purchasers (see Table 4.97). In contrast, 43% of non-purchasers worry a little or worry a lot about their long-term financial situation, compared to 22% of purchasers. There is no evidence that many consumers choose not to purchase RIS products because they feel that their financial future is already secure.

Relative Financial Situation	NP	P
A much better situation than most	4%	8%
A slightly better situation than most	22%	35%
The same situation as most people	48%	41%
Slightly worse situation than most	18%	12%
Much worse situation than most	8%	3%

Table 4.98 – Perceived relative financial situation for purchasers and non-purchasers

336. When asked to compare their personal financial situation with other people in their country, recent RIS purchasers feel that they are relatively better off compared to non-purchasers (Table 4.98). 43% of purchasers feel that they are in a slightly better or much better situation than most, while only 26% of non-purchasers feel the same.

Trust in Financial Institutions (% Agree)	Bank/ Building Society	Insurance Company	Pension Provider	Broker	Financial Advisor	Accountant
Their marketing techniques are aggressive	26%	35%	22%	31%	28%	13%
My rights as a consumer are adequately protected in relation to them	18%	14%	13%	10%	12%	15%
I expect them to give me advice	40%	36%	33%	36%	42%	37%
I usually trust the advice given by them	18%	12%	11%	11%	14%	20%
They suggest financial products that are unsuitable just to make a sale	29%	34%	25%	34%	31%	18%
They have a lot of knowledge about finance and I trust their judgement	19%	13%	12%	13%	17%	21%

Table 4.99 – Trust in financial institutions (all respondents)

Trust Index (% Purchaser / % Non-Purchaser)	Bank/ Building Society	Insurance Company	Pension Provider	Broker	Financial Advisor	Accountant
Their marketing techniques are aggressive	0.7	0.8	0.7	0.9	0.9	0.6
My rights as a consumer are adequately protected in relation to them	1.2	1.3	1.2	1.4	1.6	1.1
I expect them to give me advice	1.1	1.1	1.1	1.2	1.2	0.9
I usually trust the advice given by them	1.2	1.2	1.2	1.6	1.6	0.9
They suggest financial products that are unsuitable just to make a sale	0.8	0.8	0.8	0.8	0.8	0.7
They have a lot of knowledge about finance and I trust their judgement	1.3	1.4	1.3	1.7	1.7	1.0

Table 4.100 – Trust in financial institutions (purchasers vs. non-purchasers)

337. The first of the two tables (Table 4.99) above shows the percentage of survey respondents who strongly agree or agree with each statement, being the top two options on a seven-point response scale. This strength of agreement is for the average EU consumer, including recent-purchasers of RIS products and also non-purchasers. The second of the two tables (Table 4.100) shows the relative strength of agreement by purchasers in comparison to non-purchasers. From the first table it is clear that overall levels of trust in financial institutions is low, with consumers having concerns about aggressive marketing techniques, inadequate legal protection, and unsuitable product suggestions. Banks and building societies appear to be slightly more trusted than other institutions. From the second table we can see that recent RIS purchasers are generally more trusting of financial institutions. In particular, recent RIS purchasers are significantly more trusting of the information and advice provided by financial advisors and brokers.

Education and Financial Literacy	Non-Purchasers	Purchasers
Age left education	20.1	20.7
Economics education: A lot	11%	15%
Economics education: Some	22%	24%
Economics education: Little	25%	27%
Economics education: Hardly at all	21%	18%
Economics education: None	22%	17%
Mathematics education: A lot	22%	26%
Mathematics education: Some	40%	45%
Mathematics education: Little	23%	19%
Mathematics education: Hardly at all	9%	6%
Mathematics education: None	5%	4%
Financial Literacy (0-10)	6.6	7.5

Table 4.101 – Education of purchasers and non-purchasers

338. Table 4.101 shows that although recent purchasers of RIS products do not appear to be more educated than non-purchasers, a slightly larger proportion of their education was devoted to economics and mathematics, suggesting that purchasers tend to be more numerate and financially literate even before making their purchase (i.e. it is not just the experience of making an RIS purchase that improves financial literacy). Purchasers also score higher than non-purchasers in a test of applied financial literacy, with an average of 7.5 out of 10, compared to 6.6 out of 10 for non-purchasers.[142] Thus it appears that RIS purchasers are more financially literate than non-purchasers, and at least some of that difference existed prior to the RIS purchase being made.

[142] Due to a mis-translation in one of the questions, Swedish respondents are score out of 9 not 10, and their scores have been adjusted to be comparable to other Member States.

Financial Literacy (0-10)	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Non-purchasers	6.6	7.6	6.6	6.2	6.6	6.7	6.6	6.5	6.8
Purchasers	7.5	8.0	7.5	7.1	7.5	7.6	6.9	7.5	8.0

Table 4.102 – Applied financial literacy of purchasers and non-purchasers by country

339. Table 4.102 suggests that average levels of applied financial literacy do not vary significantly between Member States, although recent RIS purchasers are more financially literate than non-purchasers in every country. The biggest financial literacy difference between purchasers and non-purchasers is in the UK, while the smallest difference is in the Czech Republic.

5.4 Consideration by Non-Purchasers

Consideration (Non-Purchasers)	**EU**	**CZ**	**DE**	**FR**	**IT**	**PL**	**RO**	**SV**	**UK**
Did not consider making an investment	52%	49%	69%	50%	48%	44%	4%	56%	60%
Did not have enough spare money to make investment worthwhile	15%	22%	11%	22%	12%	15%	6%	10%	17%
Never had the time to arrange it	9%	4%	4%	7%	12%	14%	27%	8%	7%
Did not see any benefit of doing so	6%	7%	4%	7%	11%	5%	10%	5%	4%
Didn't trust the information given by advisors or salespeople	5%	4%	5%	4%	7%	9%	8%	4%	2%
Found it all too confusing	5%	6%	2%	5%	3%	6%	12%	8%	4%
All the options seem too risky	4%	4%	3%	3%	5%	4%	8%	3%	4%
Put off by the high fees charged by advisors and salespeople	3%	4%	1%	2%	0%	4%	25%	5%	2%

Table 4.103 – Reasons for not investing (non-purchasers by country)

340. Survey respondents who had not purchased an RIS product in the last five years were asked whether or not they had considered making an investment in that period, and why they had chosen not to (see Table 4.103). Two thirds of non-purchasers did not consider

an investment or did not have sufficient spare money to invest. One in ten non-purchasers stated that they did not have time to arrange it (perhaps indicating a procrastination bias), but trust in advice and lack of understanding only account for 5% of non-purchase reasons each. The only country where barriers such as lack of understanding or high fees appear to be large is Romania.

6 Summary and Conclusions

341. Across Europe, RIS purchasing rates vary significantly between Member States, but there are many consistencies in the way RIS products are purchased in different countries. Consumers tend to buy stocks, shares, personal pensions, life insurance for investment purposes, and funds. The main purchase route is direct from the provider, who is typically a bank or insurance company. Although consumers show reasonable understanding of the difference between types of RIS product, some confusion is evident, with some indication that consumers under-estimate the risks associated with their investment. Investment providers rely on advertising rather than direct sales approaches to generate sales, although purchase is more likely to be triggered by a change in life circumstances in many cases. Information search is not that in-depth, typically involving financial websites, newspapers and magazines, and consulting the staff of banks, insurance companies and other financial institutions. Often, consumers do not consider many options in depth or shop around for the best deal, and many exclude providers and products that they are unfamiliar with. The main factors determining the final choice of investment are perceived risk and return, and recommendations from advisors or salespeople. Post-purchase satisfaction is generally high, although consumers often remain unclear about how some aspects of their investment work.

342. Advice and personal interactions are ubiquitous in RIS purchases, with eight out of ten purchases being made in a face-to-face context and 79% of all purchasers obtaining information or advice from a financial professional. The most commonly-consulted financial professionals are employees of banks, insurance companies and other financial institutions, followed by financial advisors and brokers. These financial professionals often fulfil a number of roles, from triggering the purchase through to providing personally-tailored advice, as well as typically executing the purchase and opening the investment. Trust in advisors is high and purchasers do not feel under pressure from

aggressive selling techniques. However, purchasers are often unaware of the incentives of their advisor, such as commission payments, and are often unaware of potential biases in the advice they receive.

343. There are four main types of purchase process followed. Confused Mainstream purchasers put a moderate amount of effort went into searching for information and consider an average number of options, although sometimes struggle to understand financial information or jargon. Self-Sufficient purchasers shop around more than average and are willing to consider unfamiliar RIS providers or products. They rely on their own knowledge much more than on recommendations from friends and family. Advice Sought purchasers have a very in-depth purchase process, involving lots of research, advice, and shopping around. They are the most likely to only consider RIS providers and products they are familiar with and have been recommended. In contrast, Limited Search purchasers do little or no searching for information and are very unlikely to obtain advice from either formal or informal sources. For full details of the major differences in how each group purchases RIS products, and differences in their backgrounds and personal situations, please refer to Section 4.

344. Purchasers of RIS products are more likely to be male, older than average, and with a relatively high household income. They tend to be self-employed or a company owner, retired, or employed full-time and they are 60% more likely than non-purchasers to have worked in the financial services industry. RIS purchasers also have more non-RIS financial products and a much larger amount of money in savings and investments. They are less averse to risk and more confident in their financial situation, as well as being more numerate and financially literate. Purchasers are also more trusting in financial institutions, although levels of trust are low amongst purchasers and non-purchasers. Banks and building societies are the most trusted financial institutions. Two-thirds of non-purchasers had not considered a purchase in the last five years or had not had enough spare income to make it worthwhile. Of the remainder, procrastination, lack of understanding, and mistrust are all potential barriers to making an RIS purchase.

PART 1: REVIEW

CHAPTER V

POLICY OPTIONS AND EXPERIMENT PRIORITIES

Retail Investment Services: Policy Options and Experiment Priorities

1 Introduction: Behavioural Economics and Regulatory Policy

345. As outlined at the beginning of this report, one key objective of this research study was not simply to identify behavioural biases that may hinder the decision-making of retail investors, but to determine the extent to which policy interventions can overcome those biases and improve the market for consumers through the use of Behavioural Economics (BE) experiments. In this chapter we first discuss the broad policy issues pertinent to regulation of the Retail Investment Services (RIS) market, then describe the current EU regulatory regime as it applies to the sale of RIS. We then lay out a range of policy options that might enhance or extend the existing regulations, and relate those to features of the RIS market, particular products, and particular behavioural biases. Finally, we attempt to prioritise the behavioural biases and corresponding policy options that this review phase has identified as the key levers in this market, and outline the programme of behavioural experiments with which we have tested these issues in the second phase of the project. Thus, BE has played a dual role in this study: firstly, prior BE findings and theoretical frameworks have been used to identify the key biases in the RIS market; secondly, BE methodologies have been applied to test the hypothesised effects and potential remedies through experimental research.

2 Discussion of Policy Issues

346. There are a variety of key policy dimensions important to the regulation of a well-functioning retail investment market in the EU. Before turning to the specifics of policy options currently employed or potentially available in the RIS market, we first briefly discuss each issue in turn, with reference to relevant findings from our review.

2.1 Savings Rates and Pension Provision

347. Perhaps the most fundamental challenge in many EU countries is ensuring that savings rates are sufficient for people to properly provide for their old age. This issue is particularly acute in the light of a demographic shift with two components. First, life expectancy in Europe has increased by about ten years in just the last half century. Second, fertility rates in many European countries are below the replacement rate of two children per adult - often substantially so - implying that the number of people in work

will reduce while the ageing population grows. Given this substantial demographic shift towards an older population across the majority of Member States, coupled with the increasing cost of social and medical care for the elderly (which may exceed the limits of state provision in many cases), a major policy priority is likely to be ensuring that the retail investment market encourages sufficiently high levels of saving. In the UK, savings rates are especially low but there is a great deal of inter-country variation, with Germany, for example, having a relatively high rate of savings (see Chapter III, Section 2.2). Furthermore, the majority of non-purchasers of RIS in our survey lacked the financial resources to make investments, with behavioural barriers to entry such as trust or procrastination being secondary factors (see Chapter IV, Section 5). Therefore we would suggest that the priority of the current study should be improving the decision-making of existing and future retail investors, rather than increasing overall participation in the retail investment market, which should be a matter for national policy in the light of cultural differences and the level of state retirement provision.

2.2 Availability and Affordability of Good Quality Advice

348. Relatively few people buy retail investment products without seeking advice, or being actively sought out by a sales person. Our survey of investment purchase processes (Chapter IV) showed that about 80% of such purchases are made in the light of contact with a financial professional, typically face-to-face. Thus many of the key psychological factors underlying investment decisions are likely to concern the advice and sales process. As a result, we propose that understanding the advice process should be the focus of two out of the three experiments we will conduct in the second phase of this research. We note too, however, that face-to-face advice is expensive. People are typically unwilling to pay for such advice, and for low income citizens the costs of such advice may be simply uneconomically high. A major challenge for the industry and regulators is to provide the conditions such that it is commercially viable to provide the required level of financial advice for retail investment products, across a broad demographic. While having other potential benefits, greater transparency concerning fees paid to advisors may operate against the widespread take-up of financial advice. Similarly, improving the quality and independence of advice, while clearly desirable, may simultaneously make the provision of such advice more expensive. On the other hand, standardisation of products or more directive regulation of certain products or

product classes (via, for example, approved "standards") might reduce the need for expensive advice. Moreover, the increasing use of alternative channels, such as telephone or internet, may allow advice and sales to be provided more cheaply and might broaden the demographic coverage of financial advice in this sector.

349. Increasing the quality and availability of advice is likely to be particularly important in the light of the many cognitive barriers that potentially stand in the way of people making appropriate purchases, including the fact that people often have ill-defined or unstable preferences, tend to procrastinate, and are easily overloaded by excessive numbers of choices. Thus, whilst the primary aim of this study will be to improve the quality of investor decisions, we shall be wary of unintended consequences such as raising barriers to entry through imposing additional costs for advice (whether real or perceived) on consumers.

2.3 Limiting Sales Methods and Product Offerings

350. There is widespread concern that high-pressure sales techniques, perhaps coupled with a lack of transparency concerning advisor/salesperson incentives, may lead to mis-selling of consumer financial services. Product lock-ins may potentially act against consumer interests and so-called "teaser rates" may be used to entice people to invest in a product, yet providers may anticipate that consumers will not switch products later, when the product becomes much less competitive (see Chapter II, Section 2.5). An important objective for regulators is to establish which practices do indeed operate against the interests of consumers, and to reduce the likelihood that this will occur. Yet this regulatory objective must be balanced against the need for the financial services industry to be able to find effective sales methods and attractive product features. This will lead to sufficiently high take-up levels of retail investment products, so that consumers are providing for their financial futures appropriately (see Section 2.1 above). That is, in regulating the *quality* of sales in this sector, it may be important to guard against an inadvertent reduction in the *quantity* of such sales, particularly in Member States in which savings rates are low. The critical point is that just because a commercial practice leads consumers to take a decision they would not have otherwise made, that is not *per se* evidence that the practice is acting against the consumer's long-

term best interest.[143] Adopting a behavioural perspective means accepting that consumers' preferences cannot always be inferred from observing their choices, even when the consumer is fully informed. One of the biggest challenges in applying BE to policy questions is the need to find a robust way to determine what consumers' long-term preferences and interests are as a yardstick against which policy options can be measured.

2.4 Investor Heterogeneity

351. Any debate about the proper nature of regulation in this sector must take full account of the fact that there is a variety of purchase processes for retail investment products. Any regulatory changes may have somewhat different impacts on the different groups of purchasers identified in Chapter IV, and mentioned above. For example, it is unlikely that the provision of additional consumer information, or improved regulation of advice, will have a substantial direct impact on *Limited Search* purchasers, who do not seek information or advice. However, regulatory policy - especially at a European level - cannot easily be targeted at specific population sub-groups. Thus, we propose concentrating on aspects of the investment purchase process common to the majority of investors, such as obtaining and using advice, while noting that the best policy might combine a number of elements to improve market functioning for as many consumers as possible.

2.5 Financial Literacy and Financial Capability

352. How far is it reasonable to expect individuals to make appropriate long-term savings provision, without some form of advice and assistance, given the substantial uncertainties involved? For example, people face considerable uncertainties concerning (among other things) the performance of different kinds of assets; their own future life circumstances, including marriage, divorce, costs associated with children and other dependents; unemployment; their future health status and life expectancy; and the

[143] Note here that our argument appears to directly contradict Article 6 of the Unfair Commercial Practices Directive (discussed later), which refers to actions "that cause [the average consumer] to take a transactional decision that he would not have taken otherwise". This contradiction could be resolved by assuming that the intended meaning of the last part of the Article is "...would not have taken otherwise, *if fully-informed and able to reflect adequately on his long-term interests*". Nonetheless, our argument is that observed behaviour - including behaviour that *would* have been observed in the absence of an action - may not always be indicative of a consumer's long-term preferences or best interests.

possibility of future changes in government welfare provision. Levels of financial literacy and financial capability are variable within Member States and across Member States, and appear to be associated with the purchase of retail investment products (typically purchasers have higher levels of financial literacy), although the causal direction of such an association is not clear. But even with high levels of financial literacy it could be argued that the challenge of determining the amount to invest, and the appropriate risk profile for that investment, is very substantial. This consideration seems to favour either fairly directed government policy (e.g. providing default pension or savings schemes so that individual financial literacy is less relevant) or aiming to target any financial literacy education engaging with the advice process, enabling consumers to seek and use financial advice more effectively (rather than attempting to educate people to become their own expert financial advisor). Nonetheless, programmes aiming to improve individual financial literacy activity have typically been found to have relatively short-lived effects (see Chapter II, Section 3.1). One objective of this study should be to further explore whether consumers can be empowered to make better use of information and advice (e.g. to appropriately discount advice when conflicts of interest are disclosed), and whether that aim can be best achieved by improving financial literacy or by making consumers aware of potential biases in their decision-making process.

3 Current EC Policy

353. The financial services sector is governed by several regulations, at both a European and national level, which govern almost every aspect of the provision, sale and operation of RIS. In this section we concentrate primarily on those aspects of regulation that are directly pertinent to the consumers' purchase decision process, such as regulations concerning sales and marketing practices, conflicts of interest, or investment advice. In order to promote a level playing-field and hence to encourage cross-border competition, the European Commission (EC) has attempted over recent years to harmonise market regulations across Member States by issuing policy directives that are then translated into domestic law by respective national governments. Thus we discuss only the relevant European regulations here, without reference to any differences between regulatory regimes at a national level. Furthermore, the regulatory regime is under constant review, for example with on-going work considering the market for Packaged

Retail Investment Products (PRIPs) and the work of the Committee of European Securities Regulators (CESR) concerning the disclosure of investment risk. Here we limit ourselves to describing the regulations as currently agreed and enacted across the EU, and which are directly relevant to the purchase of retail investment products and services by consumers. We also briefly discuss non-regulatory aspects of EC consumer policy such as consumer education.

3.1 Marketing and Sales Practices

354. Consistent with previous chapters, we structure our description of the current regulations around the different stages of the consumer purchase decision process. For many retail investors, the first contact they have with RIS providers is in the form of advertising or marketing activities by those providers or by third-party intermediaries who sell on investment products. Such activities are primarily regulated by the Unfair Commercial Practices (UCP) Directive (2005/29/EC), which concerns business-to-consumer commercial practices in the internal European market. This Directive differentiates between "misleading" commercial practices (both actions and omissions), which "by deceiving the consumer prevent him from making an informed and thus efficient choice", and "aggressive" commercial practices, which "significantly impair the consumer's freedom of choice […] using harassment, coercion, […] physical force and undue influence". The Directive takes as a benchmark the "average consumer", who is described as "reasonably well-informed and reasonably observable and circumspect".

355. There are two aspects of the UCP Directive which warrant particular consideration in the context of a behavioural analysis of retail investment choices. Firstly, the regulations concerning "misleading" commercial practices are clearly motivated by a belief that many misleading practices arise from deliberate misrepresentation or omission of pertinent information, and that the most appropriate remedy is to mandate full and frank information disclosure. For example, an omission is defined as misleading if "it omits material information that the average consumer needs, according to the context, to take an informed transactional decision". Given the discussion in Chapter II about consumers' limited attention, cognitive capabilities and financial literacy, as well as the complexity of the products and pricing in the RIS market, it could be argued that full disclosure of all pertinent information is likely to lead to choice and information overload rather than to improve the quality of investor decisions. The UCP Directive

does, however, recognise that the average consumer is cognitively limited, by defining an action as misleading if it "deceives or is likely to deceive the average consumer, *even if the information is factually correct*".

356. The second interesting aspect of the UCP Directive is the use of a "blacklist" of specific practices which are explicitly banned in all circumstances. None of the practices listed are likely to apply to the RIS market to a greater extent than other markets, but the approach is consistent with a behavioural perspective on marketing regulation. As soon as one deviates from the idea that fully-informed consumers are always capable of making fully rational decisions in their own best interests, then it quickly becomes difficult to define blanket definitions of what commercial practices might or might not be misleading or unfair. Rather, specific practices in the context of specific product markets must be tested - perhaps through the use of behavioural experiments - to determine if, how, and which behavioural biases materially impact upon consumer choices. Whilst such a blacklist is unlikely to ever be exhaustive (and firms can potentially innovate new practices which exploit the same biases), the UCP Directive does provide a model for a more micro-level role for behavioural evidence to shape regulatory policy.

357. Sales and marketing practices in the RIS market are also mentioned in a number of other Directives, related to specific product markets. For example, in Article 19 of the Directive on Markets in Financial Instruments (MiFID; 2004/39/EC), it is specified that "All information, including marketing communications, […] shall be fair, clear and not misleading". However, the test of what constitutes fairness and clarity are not specified, nor are specific examples given or specific practices blacklisted. Similarly, Article 14 of the Directive related to Undertakings for Collective Investment in Transferable Securities (UCITS; 2009/65/EC) states that the management company must ensure that it "acts honestly and fairly in conducting its business activities in the best interests of the UCITS it manages and the integrity of the market", and furthermore that it "acts with due skill, care and diligence". The appropriate criteria for meeting these requirements will be defined in a subsequent set of implementing measures in 2010. Finally, Article 10 of the Directive concerning Distance Marketing of Consumer Financial Services (2002/65/EC) expressly prohibits the use of "unsolicited communications" such as automated calling systems and fax machines, unless the

consumer's prior consent has been obtained. The Distance Marketing Directive also forbids "unsolicited services" not previously requested by the consumer, with the absence of a reply not constituting consent (although tacit renewal of distance contracts may be permitted in some circumstances).

3.2 Advice

358. As discussed repeatedly throughout this report, advice is ubiquitous in the purchase of retail investment products. The most relevant legislation is found in the aforementioned MiFID (2004/39/EC) and also in the Directive on Insurance Mediation (2002/92/EC) in the case of life insurance for investment purposes. MiFID defines investment advice as "the provision of personal recommendations to a client, either upon its request or at the initiative of the investment firm, in respect of one or more transactions relating to financial instruments", which differentiates advice from information provision in its emphasis on the personal nature of a recommendation. This is a somewhat fuzzy distinction: the difference between "Product X is good", "Product X is good for investors like you", and "Based upon your personal needs and circumstances, Product X is good for you" is subtle and likely to be lost on consumers. Nonetheless, provision of investment advice (as opposed to merely providing product information even if that is construed as advice by consumers) imposes an additional requirement to "obtain the necessary information regarding the client's or potential client's knowledge and experience in the investment field relevant to the specific type of product or service, his financial situation and his investment objectives so as to enable the firm to recommend to the client or potential client the investment services and financial instruments that are suitable for him". More generally, Article 19 also compels investment firms to "act honestly, fairly and professionally in accordance with the best interests of its clients", which would appear to prohibit the recommendation of unsuitable products.

359. Similarly, Article 12 of the Insurance Mediation Directive states that insurance intermediaries must disclose to the customer if he is tied to insurance mediation business exclusively with one or more insurance undertakings and if not, whether or not he gives advice on the basis of a "fair analysis". This obligates him "to give that advice on the basis of an analysis of a sufficiently large number of insurance contracts available on the market, to enable him to make a recommendation, in accordance with professional criteria, regarding which insurance contract would be adequate to meet the

customer's needs". In addition, the intermediary must specify "in particular on the basis of information provided by the customer, the demands and the needs of that customer as well as the underlying reasons for any advice given to the customer". Thus, both Directives put clear obligations on the behalf of advisors to collect the necessary information required to assess an investor's needs, and to give advice in the investor's best interest. However, the scope of what is defined as "advice" in existing regulations (personal recommendations, usually from an un-tied intermediary) may not cover many circumstances in which consumers may feel they are being advised.

3.3 Pre-Contractual Disclosure

360. A common feature of all the EU Directives applicable to the sale of retail investment products is mandatory disclosure of certain information to potential investors, prior to commencement of a contract. MiFID states that "appropriate information shall be provided in a comprehensible form" concerning the firm and its services, financial instruments and investment strategies, guidance and warnings about associated risks, execution venues, and any costs and charges. This disclosure to potential clients - which can (but does not currently have to be) in a standardised form - is mandated "so that they are reasonably able to understand the nature and risks of the investment service and of the specific type of financial instrument that is being offered and, consequently, to take investment decisions on an informed basis". Similarly, Article 12 of the Insurance Mediation Directive mandates a number of pieces of information which must be disclosed prior to the conclusion of any insurance contract, and Article 13 states that this information must be communicated "in a clear and accurate manner, comprehensible to the customer". Article 4 of the Directive concerning Distance Selling of Consumer Financial Services states simply that "Where there are provisions in the Community legislation governing financial services which contain prior information requirements additional to those listed in Article 3(1), these requirements shall continue to apply", thus ensuring that information disclosure requirements are the same for distance selling as they are for all other types of selling.

361. Since 2001, pre-contractual disclosure for UCITS was primarily achieved through the use of a document known as a Simplified Prospectus. However, subsequent consultation

suggested that the Simplified Prospectus is "too long, too complex and does not allow for useful comparisons".[144] Hence, Articles 78 to 82 of the revised 2009 Directive stated that the Simplified Prospectus should be replaced with "Key Investor Information" (KII). This document, provided free of charge and in good time, should

> contain only the essential elements for making such decisions. The nature of the information to be found in the key investor information should be fully harmonised so as to ensure adequate investor protection and comparability. Key investor information should be presented in a short format. A single document of limited length presenting the information in a specified sequence is the most appropriate manner in which to achieve the clarity and simplicity of presentation that is required by retail investors, and should allow for useful comparisons, notably of costs and risk profile, relevant to the investment decision.

The KII must include information on past performance and/or performance scenarios, which is not mandated under MiFID. The Commission is due to adopt implementing measures that will define the "detailed and exhaustive content" of the KII, as well as the format and presentation of the document. These measures will be guided by on-going consumer testing of potential KII designs, conducted by the Commission and the CESR. This policy approach can be characterised as "white-listing", in contrast to the black-listing approach of the UCP Directive described in Section 3.1 above.

362. These existing EU regulations on pre-contractual disclosure are clearly intended to reduce or remove information asymmetries, either between investors and investment firms, or between investors and investment intermediaries. The focus on information disclosure in much of the legislation implies that policy makers believe that consumers will make better choices if they have more information. Indeed, the EU Consumer Policy strategy states that consumer policy should ensure that "markets are fair and transparent, so that consumers can exercise informed choice", and that consumer policy "can equip consumers to make rational choices and take on responsibility to promote their own interests".[145] Whilst a behavioural perspective does not explicitly challenge that view, it does emphasise the need to consider not just whether information is disclosed but how it is disclosed, in what format, and in what context. Moreover, it

[144] European Commission 2008. MEMO/08/510. Brussels

[145] European Commission 2007. EU Consumer Policy Strategy 2007-2013, p10. Luxembourg: Office for Official Publications of the European Communities.

raises the questions of whether too much information is as harmful as too little, whether consumers always possess the cognitive capabilities to make rational choices in complex product markets, and whether consumers can be educated sufficiently to enable them to make rational decisions independently in all circumstances. The proposed approach to implementing the KII document in response to revisions to the UCITS Directive is a clear attempt to begin to answer those questions through consumer testing.

3.4 Conflicts of Interest

363. The final element of pre-sales regulatory policy in the retail investment market is related to conflicts of interest. Article 18 of MiFID requires investment firms "to identify conflicts of interest between themselves […] and their clients or between one client and another that arise in the course of providing any investment and ancillary services." Where conflicts of interest are identified, Article 13 states that investment firms must "maintain and operate effective organisational and administrative arrangements with a view to taking all reasonable steps designed to prevent conflicts of interest […] from adversely affecting the interests of its clients". Where these arrangements are insufficient to ensure that the risks of damage to client interests have been prevented, Article 18 mandates the investment firm to "clearly disclose the general nature and/or sources of conflicts of interest to the client before undertaking business on its behalf". In a similar fashion, Article 12 of the UCITS Directive states that management companies should be "structured and organised in such a way as to minimise the risk of UCITS' or clients' interests being prejudiced by conflicts of interest between the company and its clients". Implementing measures will be adopted this year that "define the steps that management companies might reasonably be expected to take to identify, prevent, manage or disclose conflicts of interest". Again, disclosure is used as a second-best remedy for dealing with conflicts of interest that cannot be easily overcome by "reasonable steps" on behalf of the investment firm.

364. As discussed above in relation to advice and pre-contractual disclosure, such regulations deal with the information asymmetry between investment provider and client but place the burden of dealing with the conflict of interest upon the consumer. Such an approach is only effective if consumers are capable of integrating information about the conflict of interest into their decision process, and capable of adapting their choices in an appropriate and rational manner. As noted in Section 5 of Chapter II, the limited

evidence in this area indicates that in fact consumers often display "naïve trust" and fail to respond adequately to conflicts of interest, even when those conflicts are fully disclosed.

3.5 Cooling-Off Periods

365. The Distance Selling of Consumer Financial Services Directive specifies that consumers should have the right to withdraw from a contract for a financial service up to 14 days after the contract commences or the contractual details are received, whichever is later (30 days for life insurance and pension products). However, the Directive also states that this right of withdrawal does not apply to "financial services whose price depends on fluctuations in the financial market outside the supplier's control, which may occur during the withdrawal period", which excludes many RIS products such as money market instruments or UCITS. There is currently no equivalent right of withdrawal for consumer financial services that are not sold via distance selling.

3.6 Consumer Education

366. In addition to the regulatory policy described above, through which the activities of firms in the RIS market are regulated, the EC contributes to national, regional and local efforts to inform and educate consumers. The primary mechanism for achieving this currently is the European Consumer Centres Network (ECC-Net), which conducts information campaigns and establishes consumer advice centres in each Member State. These campaigns predominantly aim to raise awareness of consumer rights and the role of consumer non-governmental organisations (NGOs), not to educate consumers about specific markets and products, e.g. in order to promote financial literacy.

4 Policy Options

4.1 Classifying Policy Options

367. Whilst consumer policy instruments could take an almost infinite variety of forms - and their success is often critically dependent upon the detail of how they are implemented - we classify these policy options into four broad categories. Firstly, product design and pricing could be regulated, by either mandating or forbidding certain attributes or through the use of guideline standards. Secondly, sales and marketing practices might be regulated, again by either forbidding, mandating, or encouraging certain practices

and activities. Thirdly, information disclosure could be mandated or standardised to ensure comparability, for example in product features or advisor commissions. Finally, education and literacy campaigns could be used to equip consumers to make better decisions, or to be aware of biases in their own choices or in advice given by financial advisors. We discuss each category of policy options in more detail below, before going on to discuss which particular options appear to be most likely to have a positive impact in the RIS market, based upon the findings of our review. Note that we exclude here regulatory policy that is not directly related to consumer decision-making, such as capital requirements and operating restrictions for investment providers or rules on insider trading and third-party auditing, that contribute to financial stability and might enhance trust or make distributional outcomes more equitable but do not impact immediately upon consumers' ability to make appropriate choices.

4.2 Products and Pricing

368. Retail investment products can have a wide variety of different features and attributes, related to the term of the product, rates and returns, various types of risk, liquidity and accessibility of funds, fees and charges, etc. Here we consider the regulatory options concerning those product features, rather than the way those features might be described and communicated to consumers, which we consider in the next section. In theory, a regulator could choose to forbid ("black-list") certain product features, for example banning charges that are not directly related to the cost of operating an investment fund. Alternatively, a regulator might impose minimum or maximum levels of features, for example setting a minimum rate of return that risk-free investments must offer. Yet another alternative would be to mandate certain features that must be included, for example the option to close an investment and receive any funds back within 30 days. Finally, a regulator could try to enforce simplicity and standardisation in product design by "white-listing" a set of features and attributes that investment products can include, for example a standardised list of acceptable types of fees and charges, from which product providers could pick and choose. An obvious risk of any of the above options is the potential for limiting choice and innovation in the retail investment market.

369. Less stringently, a regulator might introduce a "standard" within a class of retail investment products with a list of conditions and minimum requirements that products must meet to attain the standard. Consumers would have the reassurance that any

products bearing the standard would meet certain minimum requirements - and also as a result could be sensibly compared to other products bearing the same standard - but they would also be free to choose products that did not meet the standard if they wished to. The scheme has the advantage of not removing choice or potentially stifling product innovation, but has the disadvantage of costly monitoring and operation, as well as the need to educate consumers about the standard and why they should prefer to purchase investment products bearing that standard.

370. Rather than forbidding or mandating the features of investment products, or operating standards that products would have to meet, a regulator could instead choose to impose "default" options for certain product features that consumers would have to actively opt-in to change. For example, a regulator might impose a default percentage of a pension product that should be invested in low-risk stocks and bonds for consumers in different age bands. While a consumer would be free to change from that default allocation, they would have to actively request the change from their product provider. The use of defaults relies on consumer inertia to be successful, but requires the regulator to have a robust mechanism for setting the default level at the appropriate point for the majority of investors. Thus, the use of defaults may be more useful at the level of investment participation - such as forcing employees to actively opt out of workplace pension schemes - rather than at the level of particular product features.

4.3 Information Disclosure

371. Rather than attempting to regulate products and prices themselves, a regulator could instead choose to regulate the way in which those products are described and communicated to consumers. This could be done through the regulation of advertising and marketing materials, through the imposition of pre-contractual disclosure requirements, through the regulation of contracts and post-contractual disclosure requirements, through the regulation of ongoing reporting requirements, or any combination of these. Policy makers can also choose between regulating the information that providers choose to give to consumers, mandating additional disclosure in a particular format, or alternatively providing information independently of providers (for example through independent comparison websites).

372. As with the regulation of product features, information disclosure could be regulated in a number of different ways. Here it is useful to distinguish between the *content* and the *form* of disclosed information, that is between what is disclosed and how it is disclosed. In terms of the content, certain types of information could be "black-listed", for example banning investment providers from stating the average past returns of investments that have not yet been operating for a certain minimum number of years. Alternatively, a regulator might mandate a minimum set of information that must be disclosed, but leave providers free to add additional information if they wish. However, given the variety and complexity of retail investment products it may be that neither of these options is practically feasible.

373. There may be more scope in regulating the form of information disclosure. One option might be to black-list certain practices that might be misleading, for example banning providers from describing returns in terms of a maximum return ("earn up to...") rather than an expected return. Alternatively, the way certain product features are described could be standardised, such as always describing annual (expected) returns in terms of a net annualised equivalent rate (AER). This could enhance the comparability of products, making it easier for consumers to shop around. Similarly, the names given to certain features could be standardised, to prevent a proliferation of different terms for describing the same thing. The format of information presentation could also be regulated, for example by requiring certain information to be made more prominent or to be presented in a standard way, or limiting the use of "small print". In all cases, the guiding themes are *simplification* and *standardisation*: making relevant information easier to find and making RIS products more directly comparable to each other.

374. Two more extreme forms of such disclosure regulation merit specific mention: standardised pre-contractual disclosure documents and independent product comparison services. The former policy involves mandating a document with standardised content and format (that can be adapted to different classes of RIS product as required), such as the Key Investor Information document described earlier. In addition to standardising and simplifying the contents of such a document, it may also be beneficial to translate some of the information into a more readily understood form, given the possibility of cognitively limited or financially illiterate consumers. For example, the riskiness of an investment product might be translated onto a rating scale, helping consumers to

compare products more easily and to judge the suitability of a product more effectively. Similarly, certain pieces of useful information might be *pre-calculated*, such as providing a standardised figure for the expected annual return of a product, net of all fees and charges. Again, the idea is to lessen the burden of calculation and information processing on the consumer, through standardisation and simplification. The latter policy - independent product comparison services - involves provision of similar simplified and standardised product information, but in a single location such as a comparison website to reduce the costs of "comparison shopping" for consumers. This could be of particular benefit for non-advised purchases of RIS products and might also be a tool for encouraging cross-border investment transactions if the product information for different countries was available in one place. There are of course significant practical questions around both of these options, particularly related to how they are funded (and who bears the cost) and how they are monitored and enforced.

375. It is important to note that the problem of information disclosure for RIS products is especially difficult in the light of the inherent uncertainties of financial markets. In the simplest terms, the consumer is likely to want some indication of the amount of money they are likely to receive from their retail investments, often after some very long time period (e.g., on retirement, 30 years from buying the product), and they are likely to want some indication of the level of risk that they are incurring. Given the uncertainties of even short-term financial forecasts, it is extremely difficult to provide credible answers to questions concerning either expected value or level of risk, and any such answers will depend on financial and economic assumptions which may be open to challenge. Moreover, particularly in the context of risk, there is not even an agreed measure of the riskiness of an investment fund (Clare, 2010).[146]

376. Finally, another potentially important aspect of information disclosure (which is closely related to the topic of the next section) concerns disclosure of the financial incentives to which an advisor or salesperson is subject (e.g. commission payments from product providers). Given that advisor/salesperson incentives are very different for different types of products, and may be poorly aligned with the interests of consumers in some

[146] Clare, A. (2010). Developing a risk rating methodology. Joint research paper by the Association of British Insurers and the Investment Management Association.

http://www.abi.org.uk/Media/Releases/2010/03/47701.pdf

circumstances (for example encouraging excessive "churn" in customers' portfolio of financial products), policy makers may wish to mandate pre-contractual disclosure of incentives. From the point of view of a rational economic model in which advisors are assumed to be self-interested, information about such incentives should be of great significance. Roughly, according to such a model, consumers should assume that advisors will typically attempt to persuade them to buy the product which provides the greatest commission to the advisor and hence will discount any information they receive from the advisor to this extent. The success of such a policy relies crucially on consumers' ability to discount the value of advice appropriately given knowledge of the advisor's incentives. If consumers fail to discount the value of advice sufficiently (or at all) then they will naïvely continue to follow unsuitable advice. If, instead, consumers react excessively to disclosure of incentives then they may fail to follow even beneficial advice, or may lose trust to the extent that they choose not to make an investment at all (as occurred in FTC [2007], mentioned in Chapter II).

4.4 Sales and Advice Practices

377. Following on from the issue of disclosure, we now turn to the more general question of sales and advice practices. Across the EU there is a wide range of sales and advice processes, ranging from a Bancassurance model to specialist investment providers with their own on the ground sales force to purchases mediated by Independent Financial Advisors. It appears that there is substantial diversity across states, as well as a wide range of sales and advice processes operative within some individual states. Given the variety of interactions between consumers and salespeople or advisors, it is important for policy makers to focus on key dimensions of these interactions. Perhaps the most important is the degree to which the advisor is able, overtly or covertly, to persuade the consumer to choose a particular product, whether or not that product is in the consumer's best interests. To the extent that consumers are relatively immune from "mere" persuasion or rhetoric, the regulation of face-to-face or telephone-based sales and advice may reasonably be somewhat more relaxed. If, by contrast, many consumers are fairly easily persuaded to make a particular choice, whether or not that choice is actually in their best interest, then it becomes especially critical to consider regulatory measures which might either reduce the incentives for salespeople to attempt such persuasion, or might help consumers resist undue "pressure".

378. Advisors and salespeople have both extrinsic and intrinsic motivations to provide particular pieces of advice or to employ particular sales tactics. The extrinsic motivations are primarily financial, such as commission payments and bonuses for achieving sales targets, that could encourage the provision of inappropriate advice or the use of pressure sales tactics for personal financial gain. In this case, policy options would range from the disclosure of incentives (described above), through capping the proportion of an advisors' remuneration that can be tied to product sales, to the most extreme option of banning commission payments for advisors entirely (as recently announced by the UK's Financial Services Authority). Advisors and salespeople also have intrinsic motivations to provide good quality advice and fulfil fiduciary duties - such as pride in meeting professional standards or satisfaction in achieving better outcomes for their clients - and policy makers might be able to strengthen such motivations through regulatory measures. For example, as well as requiring certain standards in terms of the qualifications that advisors must possess in order to practice, advisors could also be mandated to join a professional body, to sign up to codes of conduct, or even to take an oath of professional conduct along the lines of the Hippocratic oath still used in parts of the medical profession. More prosaically, requiring advisors to record the reasoning behind their recommendations and why that recommendation is in the best interest of their client, perhaps accompanied by third-party monitoring and auditing of this documentation, could also act to better align the incentives of advisors with the best, long-term interests of their clients.

379. The sale of RIS products and services should, of course, be covered by regulation related to all consumer purchases, such as the regulation concerning unfair commercial practices described earlier. However, the nature of the RIS market may warrant additional consumer rights to ensure that a fair and competitive market can operate. For example, where consumers have to make complex financial decisions with potentially long-term implications, it may be valuable for the consumer to be able to cancel any agreement to purchase a financial product within a certain period. Such "cooling off" periods may be particularly beneficial where a consumer has been subject to so-called "pressure-selling", where the personal interaction with the advisor or salesperson may have been unduly influential in the consumer's decision-making process. It is less likely to be helpful where the primary problem for the consumer is one of understanding the range of products, perhaps due to limitations of financial literacy - this is because, in the

absence of the advisor, consumers may be unable to fully understand the product choices under consideration, and in particular to understand how to decide that a particular product is not in their best interests. In the context of investment products, there are inherent limitations in the ability of policy makers to introduce cooling-off periods. In particular, exemptions to cooling-off regulations are required when decisions about the value of a retail investment product will be modified by short-term market information. Thus, it is clearly inappropriate for a consumer to be able to take out a "free" option to buy a product, then to go ahead with the purchase only if market conditions are favourable and to withdraw from the purchase if they are not. This problem is lessened where the time horizon of the investment products is very much greater than the time horizon of the cooling-off period.

380. It should be stressed again that when considering regulatory options, policy makers must be wary of possible unintended (negative) consequences of any market intervention. In this case for example, banning commission payments for RIS product sales might lead to a sales and advice model in which advisors have to charge an up-front fee for advice, regardless of whether the client subsequently goes on to make an investment or purchase. While this might act to protect "naïve" consumers from following potentially biased advice, it might also raise the perceived cost of advice - especially if consumers are loss averse and perceive the payment of a fee as a certain loss - leading to an overall reduction in consumers' willingness to obtain advice. Thus the wider pros and cons of any policy option must be weighed up, not just consideration of the immediate costs and benefits related to the particular intervention.

4.5 Consumer Education and Financial Literacy

381. The final category of policy options relates to attempts to empower consumers to make better decisions in the context of the existing market, rather than changing the structure or format of that market. In particular, policy makers might attempt to raise levels of numeracy and financial literacy, through both the formal education system and consumer information campaigns. Some of the evidence on the degree to which this is achievable was discussed earlier in our review of the BE literature, so we do not discuss the range of options in detail here. However, two related but alternative approaches are worth mentioning: improving "decision-making literacy" (or "de-biasing") and providing "timely" information at the point at which consumers make a choice.

382. While raising financial literacy levels would empower consumers to better understand the options they face in the RIS market and to potentially make better decisions or reduce reliance on advice as a result, this approach would not address the issue of poor decisions caused by factors internal to the consumer, such as present-biased preferences, excessive aversion to uncertainty and ambiguity, or loss aversion and narrow-bracketing of decisions. An alternative approach to the attempt to improve financial literacy might be to try improving "decision-making literacy" by educating consumers on how to make a rational decision in their long-term interests and drawing their attention to possible biases in their decision-making process. Essentially, this policy approach boils down to "teaching consumers how to make better decisions", potentially using the same array of educational methods as are currently employed to improve financial literacy. By "de-biasing" consumers through increased self-awareness of their own thought and decision processes such a policy would aim to empower consumers in all markets, not just RIS.

383. Given the low frequency with which retail investments are made and the lag between education and decision, education and information campaigns potentially take many years to have a material impact, and instilling a permanent improvement in financial literacy may be an overly-ambitious target. An alternative policy approach might be to target very specific information - either related to financial literacy or decision-making literacy - at the point at which the consumer is making a decision. One obvious candidate vehicle for providing such information would be a standardised pre-contractual disclosure document, described earlier. For example, the document might include a glossary of financial terms, a checklist of questions that a consumer might consider, or a simple description of how best to choose an appropriate RIS product and any potential decision-making biases to be aware of. Obviously such an approach only targets consumers who have actually opted to purchase an RIS product and would do nothing to help consumers for whom financial illiteracy deters them from entering the market at all, but the provision of such "timely" information might be a useful addition or alternative to more traditional education campaigns.

5 Experimental Research

5.1 Experimental Methodologies in Policy Research

384. In the following chapters, we report three experiments which aim to address key policy issues concerning the purchasing of retail investment products. It is natural to ask, therefore, why we chose to use experimental methods at all, rather than the wide range of available techniques for attempting to understand consumer behaviour. In this section we outline some of the strengths and weaknesses of experimental methods in contrast to the alternatives. In the concluding chapter of this report, we reflect on how far the choice of experimental methods has paid off in terms of an understanding of consumers that would have been difficult to achieve otherwise.

385. In the natural sciences experimental methods are, of course, of fundamental importance. Indeed, it is usually taken as a litmus test for a good theory that it makes rich and testable experimental predictions and, of course, that those predictions are fulfilled (e.g., Howson & Urbach, 1993[147]; Popper, 1959[148]). Yet the dominance of rigorous experimentation is relatively recent. Greek science focused on observation of the world, combined with *a priori* reasoning, but had no systematic experimental methodology (Lloyd, 1970).[149] Indeed, while the spectacular growth in the natural sciences from the 17th century onwards crucially relied on the results of experimentation, often using increasingly sophisticated equipment, a rigorous theory of the design and analysis of experimental data was only developed at the beginning of the 20th century (e.g., Fisher, 1925).[150]

386. At a conceptual level, the key difference between experimentation and observation is that experiments allow the direct *manipulation* of variables of interest, while controlling other factors. To take a simple physical example, consider two clocks which appear to be in perfect phase with each other. Mere observation will not be enough to determine whether they are causally connected at all or, if so, the strength and direction of the

---

[147] Howson, C. and P. Urbach. (1993). *Scientific reasoning: The Bayesian approach* (2nd edition). La Salle, Illinois: Open Court Publishing Company.

[148] Popper, K. (1959). *The Logic of Scientific Discovery*. New York:Basic Books.

[149] Lloyd, G. E. R. (1970). *Early Greek Science: Thales to Aristotle*. New York: W. W. Norton.

[150] Fisher R. A. (1925*). Statistical Methods for Research Workers (1st edition).* Edinburgh: Oliver & Boyd.

causal link. By directly manipulating the motion of each of the clocks, however, and noting how, if at all, the other responds, it is possible to identify whether and in which direction the two are causally linked. Most likely the experiments will conclude that the clocks are not directly causally linked but are both causally determined by a third factor (e.g., the objective time of day, to which they are both set). But if changing the time on one clock has the consequence of making the same change to the time shown on the other clock (but not the reverse pattern), then we may conclude that one clock is causally determined by the other, perhaps by some hidden mechanism such as a radio link.

387. For causal inferences from manipulation to be secure, however, it is of crucial importance that the manipulation applies just to the variable of interest and, as far as possible, leaves all other variables unchanged. To take a simple example, if our clocks plugged into the same power source then manipulating one clock simply by turning off the power would be associated with a similar change in the other clock. But this would not reflect a causal connection *between* the two clocks, merely that the "experimental manipulation" has had a direct causal effect on both. Such confounds can be more subtle, however. In assessing whether a fertiliser assists the growth of some crop, for example, we may decide to apply the fertiliser to one field and not to another. But then we have inadvertently manipulated not just the presence or absence of the fertiliser but any number of additional factors which differ between fields, including the quality of the soil, amount of sunlight, degree of irrigation, and so on.

388. A critical methodological breakthrough, originating from agricultural field trials, was the development of the randomised controlled experiment (Fisher, 1925). The strategy is to control all variables where possible (e.g., to sow and harvest the crop on precisely the same dates), but to randomise over that which cannot be controlled. Thus, while individual patches of land differ in a multitude of ways, the key insight is that we can randomly assign many patches of land to either the fertilised or non-fertilised treatments, and if the number of such patches are sufficiently large, the impact of these other factors will "average out". Relevant statistical methods will then allow us to determine whether there is reliable evidence for a genuine causal relationship between fertiliser and yield. The application of randomised controlled experiments has had a revolutionary impact both on basic scientific research and also - and more relevantly for

the present context - in applied domains such as agriculture and medicine. The present project raises the possibility that such experimental methods may be equally valuable for addressing social and economic questions.

389. Now let us turn to some particular questions of relevance to the present project: the manner and degree to which people are influenced in their choices of retail investment products by the recommendations of an advisor or salesperson, and the degree to which they are able to discount such advice to the extent that it may be influenced by the advisor's incentives. An "ideal" observational approach to this problem (i.e., not using experimental methods) would be to collect very detailed information about the sales processes and product purchases for a representative sample of consumers. It would then be possible to build a statistical model relating the different aspects of the sales process (e.g. the nature of the advice given, the level of understanding of each consumer, whether or not, and in what form, any advisor incentives were disclosed) with product purchases. In practice, it would not be possible to carry through this strategy in relation to the issues relevant to this project, because information about sales processes is scarce, and the critical factors of interest will almost certainly be unrecorded in any existing financial provider database.

390. Yet even if the data were available, the observational approach has other important limitations:

    a. Any statistical model built on observational data will be correlational in character. It may be possible to build certain assumptions about causal direction (e.g., that earlier events cannot be caused by later events) into the statistical model, and to make assumptions about which variables are assumed to be exogenous, but these assumptions cannot be tested using purely observational data. This also holds for instrumental variable (IV) approaches where the exogeneity of the instrument can never be proven but is only asserted (in a more or less credible manner); see, for example, the recent book by Angrist and Pischke (2009).[151] By contrast, as we have seen, randomised controlled experiments allow direct manipulation of

[151] Angrist, J. S. and Pischke, J.-S. **(**2009). Mostly Harmless Econometrics: An Empiricist's Companion. Princeton University Press

variables of interest, so that there exogeneity holds by definition. Thus only by experimental means is it possible to determine causal structure, rather than making assumptions about it.

b. A statistical model of observed data is also likely to be sensitive to particular parametric or structural assumptions. By contrast, experimental methods can establish the direction and strength of causal relationships without presupposing any particular modelling assumptions. For the same reason, in domains such as financial sales and advice where theoretical models are underdeveloped, building any credible model of the data may be difficult. Experimental methods may nonetheless be used and may indeed - as in the natural sciences - help guide theory development.

c. Any model based on observational data will be unreliable as a guide to what would happen in situations that have not yet been observed. Observational data alone can only tell us how things are now, not how they would be if some specific regulatory or other intervention were to be implemented. Experiments by contrast offer the possibility of asking counterfactual questions concerning how behaviour would have been different, if different conditions had obtained.

d. Finally, relationships of interest in the data may sometimes be swamped by large-scale variation in socio-economic or financial conditions across the sample. Thus, for example, differences in regulatory regime and product availability across different EU member states, or variation over time in products, economic conditions, stock market performance, or trust in the financial system (as might be expected, particularly in the light of turbulence in financial markets over the last few years) may have a dominant influence on the details of how the sales or advice process was conducted. Econometric methods, however sophisticated, cannot reliably deal with such problems.

In the light of these points, we note that, while information about observed behaviour should, of course, be taken into account where it is available, it is no substitute for experimental work. Nor is experimental work a substitute for observational approaches.

391. Another alternative source of data in attempting to understand consumer financial behaviour is, of course, self-report surveys, such as that reported in Chapter IV of the present project. People are notoriously unreliable in providing explanations for their behaviours, and can be induced to provide explanations that are known to be false in consumer purchasing decisions (e.g., Nisbett & Ross, 1980[152]), or indeed provide explanations for choices that they did not in fact make (Johansson, Hall, Sikström & Olsson, 2005[153]). Self-reports concerning the processes by which people bought a financial product, and the influences upon the purchase process, must therefore be treated with caution. By contrast, experimental methods allow people to make a real choice and the impact of manipulating the variables of interest (e.g., the nature of the advice given, whether incentives are disclosed, the form of the disclosure message) can be assessed directly.

392. Note, too, that in typical experiments in experimental economics, people make real - rather than hypothetical - choices (which can lead to very different results; see, for example, the striking "dictator game" data by Forsythe, Horowitz, Savin & Sefton, 1994[154]). In the context of financial product purchases, this requires a dramatic scaling down of the nature of the financial problem faced by the experimental participants. Thus below, people will face problems concerning small amounts of money, rather than their life savings. Experimental economics also imposes other quite strict criteria concerning how such "real" experiments are conducted. Most importantly, it is viewed as crucial that there is no use of deception, so that the incentives in the experiment as presented to the participant are entirely reliable. This stricture is used to guard against the possibility that participants will not take the explanation of the experiment at face value, and will attempt to second-guess its true purpose, hence distorting the experimental results. Secondly, such experiments are typically incentivised: people are not merely trusted to give a veridical answer (as in a survey), but are paid so that they have a financial incentive to reveal their true preferences or beliefs.

---

[152] Nisbett, R. E. and L. Ross. (1980). *Human inference: Strategies and shortcomings of social judgment*. Englewood Cliffs, NJ: Prentice-Hall.

[153] Johansson, P., Hall, L., Sikström, S. and A. Olsson. (2005). Failure to Detect Mismatches Between Intention and Outcome in a Simple Decision Task. *Science* 310, 116-19.

[154] Forsythe, R., Horowitz J.L., Savin N.E. and M. Sefton (1994). Fairness in Simple Bargaining Experiments. *Games and Economic Behavior* 6, 347-69.

393. The experiments that we report below fit with the strictures of experimental economics, broadly construed. We note that there is also a role for a less restrictive style of experimentation, which does not fit within the domain of experimental economics but is standard in experimental psychology, including consumer psychology and marketing. In such studies, people go through a more realistic choice process, e.g., one which might involve surveying a range of marketing materials, or even involving an interview with a financial advisor. Such a process can, of course, only lead to a hypothetical purchase, but has the advantage of realism: the real decision-making environment is simulated much more accurately than in a small-stakes, incentivised study.

394. These two approaches are complementary rather than in competition. Realistic, but hypothetical, experimental scenarios are particularly appropriate when attempting to assess the relative importance of different factors that may underlie behaviour in the real world. For example, the impacts of different specific approaches to simplification or standardisation of products can be tested directly on groups of consumers. The same experiment might also manipulate the amount of information presented about advisor incentives or this information may be presented in various ways. Such an experiment would provide guidance concerning which factors should be a policy priority, and which interpretations of those factors are likely to be most effective. Of course, because the choices are hypothetical, it would not be appropriate to generalise directly from the actual uptake of financial products in the experimental scenario to uptake in the real world. However, the *relative* importance of the factors in a realistic but hypothetical experimental scenario are likely to be a good indication of the most important factors in the real world decision.

395. We stress, however, that this type of realistic but hypothetical study is most appropriate in a second phase of research, following on from the incentivised and precisely-controlled studies typical of experimental economics and presented here. In particular, making the experimental task more realistic will typically increase the number of possible confounding variables and hence the amount of random variation in the data. More random variation ("noise") means (holding the sample size constant) less of a chance to detect differences between the variables or treatments of interest, even if these differences do exist. For example, in considering different types of certification or standardisation of real financial products, many specific details of the financial product

under consideration, and the particular format and presentation of the information, cannot be fully controlled for. The value of carefully controlled studies is that they provide a "clean-room" environment in which the impact of the variables of interest can be studied in isolation. Having isolated the key variables, it is then possible to study their impact in more naturalistic contexts. In the light of these considerations the present project focuses on carefully controlled experimental studies of this kind, and follow-up studies using more realistic materials, scenarios, and consumer populations, are left as a direction for future research.

5.2 Policy Priorities for Experimental Testing

396. It would be impossible to test the entire range of policy options in a short series of BE experiments, so it is necessary to prioritise which policy options are likely to have the most potential to improve the functioning of the RIS market for consumers, in the light of the evidence reviewed so far. There is also a trade-off between testing lots of policy options and testing those options in depth and detail, within the constraints of limited time and resources. Given the exploratory nature of this project we have tended towards the former approach but, as a result, the experiments conducted here should be seen as "pathfinders" that can indicate which policy options appear to be most effective. However, they should be followed up with more detailed and in-depth testing to find the most effective and efficient way to implement those options. Here we review the main features of the RIS market, and the evidence on consumers' RIS purchase processes and potential biases in those decisions, that lead us to focus on particular areas of policy remedies for testing and help to prioritise the questions to be addressed in our experiments.

397. There are a number of features of the RIS market that distinguish it from other markets. First, and perhaps most fundamentally, the sheer complexity of, and uncertainty associated with, investment products immediately face the consumer with substantial challenges. Indeed, many retail investment choices would be difficult even for a team of economists, and the favoured choice would inevitably be dependent on controversial financial and economic assumptions. It is not therefore surprising that consumers do not feel confident or competent to make such choices for themselves. The difficulty is exacerbated further given that many consumers are not confident with basic financial concepts and terminology. This observation would lead to prioritising the testing of

policy options that simplify the decision for consumers (e.g., by standardising and simplifying information disclosure or by improving financial literacy) or that improve the provision of (unbiased) advice from advisors and salespeople.

398. Second, investment choices are typically "one shot". Most consumers will make one, or at most a very small number, of major retail investment purchases of a particularly kind during a lifetime (e.g., most have one, or at most two, pensions). In many areas of retail, consumers purchase the same, or similar, goods repeatedly, and receive fairly rapid feedback about the quality of their choice. In such circumstances, we may reasonably expect that consumers will explore a range of options and learn which ones are more appropriate for them; this possibility may mitigate some of the difficulties associated with consumers fully understanding product features. However, given that they are purchased so rarely, this mitigation is typically unavailable in the context of retail investment products. Moreover, insofar as feedback is ever available about whether the consumer has made a good or a poor choice, such feedback is likely to be so delayed as to be entirely useless in determining future decisions and is likely to be badly confounded with exogenous factors such as market conditions. Thus the consumer will have great difficulty in distinguishing between a poor strategic decision, and a good decision involving an element of risk, which by bad luck happened to lead to poor investment performance. Again, this observation points toward testing policy options related to improving the quality and usability of information disclosure or improving the quality of advice available.

399. Third, as we have stressed in the RIS sector, products are primarily sold and not bought. Therefore it is crucial to understand the process by which salespeople and advisors interact with consumers in making a choice. This is a market in which there is little independent "shopping around" for financial products by consumers. Thus a major focus of our experiments is on exploring the interaction between advisor and advisee, with two of the three experiments designed to understand particular aspects of advised sale situations.

400. Fourth, the degree to which the financial advisor or salesperson is trusted by the consumer to provide advice on choosing in the consumer's best interests is therefore of critical importance to a well functioning market. The survey reported above indicates that, as is so often the case, there is something of a disconnection between people's

attitudes to the market at large, and their feelings about their own particular interactions with it. Thus, while many people do not have high levels of trust in financial advisors/salespeople in general, they are, in the main, positive and trusting with respect to their own personal financial advisor. Given that the incentives of salespeople and advisors are often not well aligned with the interests of the consumers, it is important to consider how consumers may be made aware of the possibility that salespeople may not always act in the consumer's interests, and to understand how far consumers are actually sensitive to this type of information in relation to the choices that they make.

401. Fifth, and finally, it is important to realise that many sales of investment products are part of an interpersonal relationship between the consumer and the advisor/salesperson; this raises the question of the degree to which elements of "mere" persuasion, over and above the "facts" relevant to the consumer's choice, may impact on consumer choice. It raises the question of how any deleterious impacts of "mere" persuasion for consumer's interests can be modified. This is particularly important because interpersonal interactions, perhaps through an increasing range of channels, is likely to be very important in the selling of retail investment products far into the future. Indeed, in the absence of such interpersonal interactions, it might reasonably be anticipated that many consumers would not be persuaded to buy any retail investment products at all, with negative consequences for their future welfare.

402. Given the features of the RIS market described above, certain limitations and biases described in the BE literature are likely to be particularly relevant when considering policy options, and our experimental programme therefore also aimed to test for the existence and importance of some of those biases in retail investment decision-making. First, the degree to which consumers are generally cognitively limited and struggle with even relatively simple investment choices when provided with all the relevant information. Second, "irrational" preferences such as aversion to uncertainty and ambiguity (possibly leading to avoidance of certain investment products) or loss aversion (possibly leading to an excessive focus on down-side risks). Third, consumers' susceptibility to framing effects (for example, an inability to translate between annual and compounded returns) and choice biases (such as "narrow bracketing" of decisions that might lead to an aversion to up-front payments for advice). Fourth, social influences in inter-personal contexts such as naïvety (failing to account for the

incentives of an advisor or salesperson) and compliance (being persuaded by "cheap talk" or exhibiting blind trust in advisors). These factors in particular seem most likely to be relevant to the RIS market and to be testable in an experimental setting.

403. In the design of the three experiments that follow, we attempt to strike a balance between looking for the presence of these factors in retail investment decisions and comparing a range of policy options that might mitigate those factors. Each experiment is designed to address a different aspect of the RIS market and retail investment decisions, but is also complementary, given some deliberate overlap in the experiment designs. We briefly describe below the main aims of each experiment.

6 Experimental Research

6.1 Cognitive and Behavioural Factors in Non-Advised RIS Purchases

404. The first of the three experiments considers consumers' ability to make non-advised retail investment decisions. Through a series of pair-wise choices between different types of investment product, Experiment 1 tests for the existence and strength of different "biases" such as uncertainty and ambiguity aversion, and susceptibility to framing effects. In addition, the experiment compares the effectiveness of a range of potential policy remedies related to standardisation and simplification of information disclosure, and also to "timely" interventions that might improve financial literacy or decision-making literacy. The design and findings of Experiment 1 are described in Chapter VI of this report.

6.2 Cognitive and Behavioural Factors in Advised RIS Purchases

405. The second and third experiment both consider aspects of advised retail investment decisions. Experiment 2 explores consumers' ability to appropriately value information and advice from a potentially biased advisor, as well as testing the effectiveness of adding "health warnings" to disclosures of advisor incentives. Furthermore, Experiment 2 looks for inconsistencies between sequences of similar investment choices indicating "narrow bracketing" and loss aversion, which could lead consumers to be disproportionately averse to paying an up-front fee for investment advice. The design and findings of Experiment 2 are described in Chapter VII of this report.

6.3 Social Factors in Advised RIS Purchases

406. The third and final experiment considers the impact of social influences such as free-flowing bilateral communication upon advised retail investment decisions. In particular, Experiment 3 explores the impact of "cheap talk" communication between advisor and advisee (recreating some of the tasks from Experiment 2), and whether this aspect of face-to-face interactions affects the degree to which consumers respond appropriately to disclosed conflicts of interest. Experiment 3 also tests some of the (non-advised) decisions and potential policy remedies from Experiment 1 in an advised setting. The design and findings of Experiment 3 are described in Chapter VIII of this report.

PART 2: EXPERIMENTS

CHAPTER VI

EXPERIMENT 1: COGNITIVE AND BEHAVIOURAL FACTORS IN NON-ADVISED INVESTMENT DECISIONS

Retail Investment Services: Experiment 1 – Cognitive and Behavioural Factors in Non-Advised Investment Decisions[155]

1 Introduction: Objectives and Study Design

1.1 Objectives

407. Our review of the Behavioural Economics literature identified limited cognitive capabilities and poor financial literacy as likely factors in poor retail investment decision-making by consumers. Furthermore, biases caused by framing effects and "narrow bracketing" of decisions were also identified as potential causes for RIS purchases that are not aligned with consumers' long-term preferences. Finally, factors such as loss aversion or ambiguity aversion, while representing deviations from standard economic theory, may be genuine components of consumers' underlying preferences that would also result in investment choices that deviate from "rational" decision-making. As discussed in the previous chapter, these different sources of "error" in consumers' RIS decision-making would potentially warrant different kinds of policy intervention. Whilst our survey of RIS purchase decision processes showed that currently the majority of investors seek advice from a financial professional (who may play a vital role in overcoming some of the limitations in decision-making ability described above), it is important to understand whether or not the "average" consumer is capable of making appropriate RIS purchase decisions – potentially supported by policy interventions to make the market less complex and more transparent – for relatively straightforward non-advised investments.

408. The objectives of Experiment 1 were therefore twofold. Firstly: to determine how capable ordinary consumers are of making simple but realistic investment decisions and to identify the cognitive and behavioural factors that influence the quality of those decisions. Secondly: to conduct initial tests of potential policy remedies that might be used to improve the quality of non-advised RIS purchase decisions. By looking at whether and how decision quality varies across different types of choice task and under different treatments, the ultimate objective is to identify the most important factors likely to contribute to a reduction in consumer welfare in the RIS market and point the

[155] Primary author(s) of this chapter: Steffen Huck and Nick Chater

way towards appropriate policy interventions targeted at those consumers at highest risk of making poor investment choices.

409. It should be noted that Experiment 1 is focused on a specific point in the RIS purchase decision process: the choice between RIS options that have been identified and researched by the consumer. We therefore address questions such as whether price differentials might persist in the RIS market because consumers are unable to identify the lower priced product when faced with otherwise similar products. Standard economic theory also predicts persistence of price differentials in certain circumstances, such as when consumers are faced with substantial search costs, but we do not address those issues here. Also, the investment tasks used all involve the allocation of a fixed investment amount between two possible alternatives, and we focus upon the question of whether consumers are capable of optimally allocating the available funds. We do not consider the related (but more complex) issues of whether consumers are capable of determining the appropriate amount of their income to invest or the appropriate amount of risk to take with those investments. Finally, this also means that the policy remedies tested here were applied at the specific point in the RIS purchase decision process when consumers were making a final choice between available and considered options. Accordingly. remedies which prove ineffective at the point in the decision process considered in Experiment 1 may nonetheless be effective if applied at an earlier stage in the decision process or in a different form.

1.2 Sampling Strategy and Data Collection

410. In order to sample from a wide and representative range of consumers, a web-based data collection method was used in eight European Union Member States to test around 6,000 consumers. Random and (approximately) nationally-representative sampling was used in each country, with no subsequent weighting applied to the data. Eight Member States were chosen for the experiment, with a range of large and small economies (including three EC12 accession states) and covering north, south and central Europe: Czech Republic; France; Germany; Italy; Poland; Romania; Sweden and the UK. The sample was split evenly across each of the eight countries to ensure sample sizes in smaller countries were sufficiently large. With a total sample of 6,000 respondents, that equates to a sample of 750 subjects in each country. All experimental treatments were repeated in each country to ensure that differences between countries were not

confounded with the treatments. Within each country, subjects were randomly assigned to a treatment group. Participation in the experiment was restricted to people aged 18 or over and who were permanent residents of the respective country.

411. The experiment was translated from English into each of the seven other languages by a third-party professional translation agency, a member of the Association of Translation Companies, using experienced mother-tongue translators.[156] The translations were proof-read and edited by a second translator to ensure accuracy and clarity. The translations were then passed to independent native speakers and to the EC for a further round of proof-reading and editing. All questions had a fixed set of response options, or required only numerical responses, so no translation of responses back into English was required.

412. Subjects were recruited via an e-mail that directed them to an internet survey presented in Adobe Flash, embedded in a standard HTML page. Subjects were recruited from actively managed and maintained access panels, which all fully comply with ICC/ESOMAR codes and guidelines for conducting research on the internet.[157] Subjects received an appropriate financial incentive for participating in the survey, the amount of which varied by country and survey duration. To ensure incentive-compatibility subjects also received additional incentives dependent upon the outcome of each task, as described in more detail in Section 1.5 below. The experiment was piloted online on 100 subjects in the UK from 30th July to 2nd August 2010. Data collection took place in the eight countries from 4th August 2010 to 20th August 2010.

413. As with all web-based research, not all responses collected were of sufficiently high quality to be included in the subsequent analysis. A number of tests were applied to each subject's data to check for consistent and thoughtful responses. Firstly, consistency test questions were placed at the start and end of the survey (date of birth compared to age; number of adults and children in household compared to total household size) to remove fictional responses. Secondly, the completion time for each respondent was

[156] Members of the ATC are carefully vetted before admission into membership, adhere to a strict code of professional conduct, are subject to the rulings of a professional ethics committee and carry full professional indemnity insurance cover to safeguard the interests of the translation purchaser. See www.atc.org.uk for full details.

[157] See the ESOMAR website www.esomar.org for more details.

recorded, and respondents with unusually short completion times were removed. Of the 6,090 surveys conducted, 87 subjects' data (1.4%) were removed during initial cleaning, giving a final sample size of 6,003 subjects. The final sample consisted of 51% men and 49% women, and subjects had a median age of 37 years. The average household size in the sample is 2.8 (2.3 adults and 0.5 children) and the average pre-tax household income (of those subjects who provided it) is €31500. On average, subjects claimed to hold 2.3 types of RIS product from a list of seven types. An overview of the (claimed) socio-demographic profile of the sample in each country is given below in Table 6.1.

Country	Female	Mean Age (Std. Dev)	Mean Household Size (SD)	Mean Annual Pre-Tax Household Income €	Mean # RIS Product Types Held
Czech Republic	0.485	39.1 (14.0)	2.9 (1.3)	18 400	2.3
France	0.513	40.1 (14.6)	2.7 (1.3)	37 600	2.0
Germany	0.483	41.2 (14.4)	2.3 (1.2)	40 100	2.5
Italy	0.478	40.6 (14.5)	3.1 (1.3)	37 400	2.0
Poland	0.488	40.2 (14.6)	3.1 (1.4)	14 200	2.3
Romania	0.491	31.7 (10.6)	3.3 (1.3)	4 800	1.7
Sweden	0.469	41.1 (15.1)	2.6 (1.4)	44 800	2.9
United Kingdom	0.521	43.1 (15.7)	2.7 (1.2)	43 000	2.3

Table 6.1 – Socio-demographic profile of subjects (split by country)

1.3 Procedure and Tasks

414. Experiment 1 consisted of five investment allocation tasks, preceded by instruction screens and followed by (i) self-rated assessment of task difficulty, (ii) further investment tasks for Experiment 2 (see next chapter), and (iii) a short survey to collect subject characteristics. Survey measures included the socio-demographic background of each subject; financial experience; self-rated numeracy; risk aversion; generalised trust; Bayesian reasoning; and a 10 item multiple choice "Money Quiz" to assess basic financial literacy. The exact procedure followed by each subject varied according to which country they lived in and which treatment group they had been randomly

assigned to. We begin by describing the baseline procedure and between-country variations in this section, before going on to describe the experimental treatments in the following section. The complete experiment protocol and descriptions of each treatment are included in an appendix to this report.

415. The five investment allocation tasks each had the same basic structure. Subjects were told that they had a fixed amount of money to allocate however they chose between two alternative investments. They were free to invest all the money in one or other investment, or to divide the money between the two investments, as long as all the money was invested. The subjects were also told that the investments would be simulated using a computer and the return on each investment calculated. Furthermore, subjects were told that they would receive a financial incentive that depended upon the investment outcomes, so that they would earn a higher reward if the investments they had chosen generated a higher return. The complete details of these incentives and the amounts paid out are given below in Section 1.4. After making each allocation decision the outcome of the investment was realised but not shown to the subject. At the end of the experiment each subject received feedback on the outcome of all five investment tasks and told how much their total reward would be.

416. Whilst many Behavioural Economics studies use stylised tasks based around hypothetical "experiment points", in this case it was important to use more realistic task descriptions for two reasons. Firstly, if investors use context-dependent decision-making heuristics ("rules of thumb") then it is necessary to recreate that context in order to trigger the usage of the same heuristics in the experiment. Secondly, remembering that one of the aims of the experiment was to assess the cognitive capability of retail investors, over-simplifying the task risked removing some of the real-world complexity that might underlie the difficulties faced by investors. Hence, realistic investment amounts and currencies were used, and each investment was described using appropriate financial terms as found in typical RIS product literature. The investment amount was identical for all five tasks, and the five pairs of investments all had a fixed five year investment period. Table 6.2 below shows the investment amount and currency used in each of the eight countries.

Country	Currency	Investment Amount
Czech Republic	Koruna	100 000 Kč
France	Euros	€10 000
Germany	Euros	€10 000
Italy	Euros	€10 000
Poland	Zloty	10 000 zł
Romania	Lei	10 000 lei
Sweden	Euros	€10 000
United Kingdom	Pounds	£10 000

Table 6.2 – Currency unit and investment amounts used in each country

417. For each allocation task subjects were shown both investments side-by-side on a single screen to aid comparison, and the information remained on screen until the subjects had made their decision. In the baseline procedure, each investment was described using three bullet points specifying the risk and return, and any up-front or annual management fees that would be incurred. The characteristics and cost of each investment could be varied by changing the values assigned to each attribute. Five different sets of attribute values were used for each task, so that the optimal investment (and the size of its advantage over the other investment) varied between subjects. The set of attribute values, the order in which the two investments were displayed on screen (investment 1 on the left or right of the screen) were both randomly assigned for each subject and each task. The order in which the five tasks were completed was also randomised. The layout of the investment allocation decision screen is shown below in Figure 6.1 for an example task.

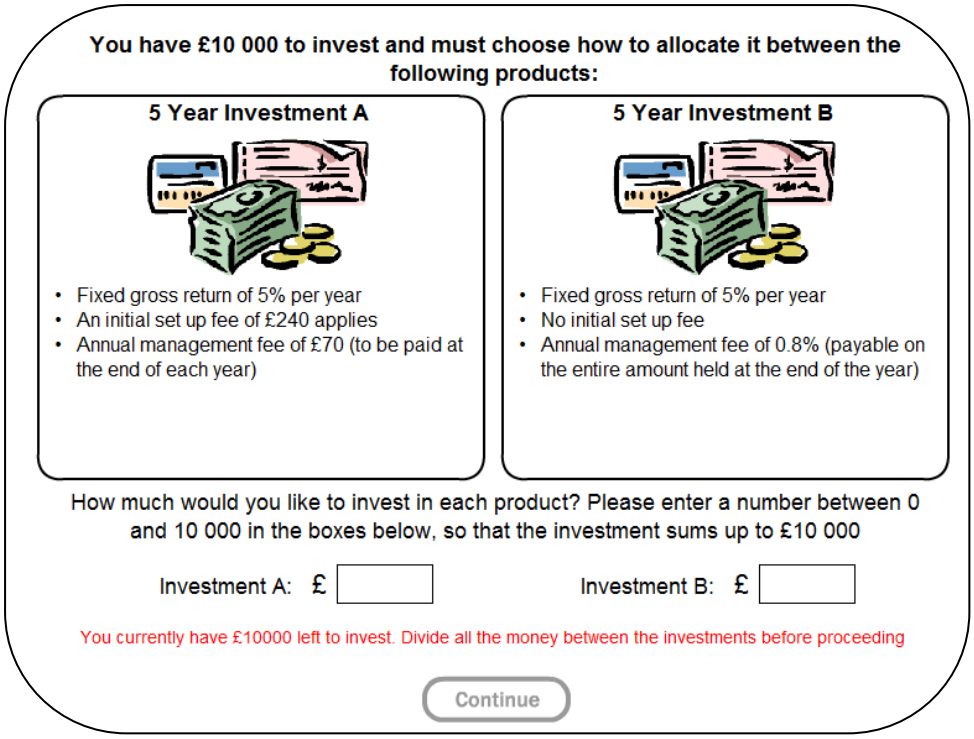


Figure 6.1 – Example screen shot (UK version)

418. Each of the five tasks was designed to test for different behavioural biases that might be material in retail investors choices, as well as to test how easily subjects could identify the optimal investment for different types of common investment products: fixed rate investments, equity-linked investments, and structured products. General cognitive limitations would be indicated by a failure to make the optimal investment choice, regardless of which of the two investments was optimal. Specific behavioural biases would be indicated by a tendency for investment choices to be biased toward one of the two investment options, so leading to an additional reduction in decision quality when that investment was the sub-optimal choice. Each of the five tasks is described in turn below, as well as the behavioural effect(s) the task was intended to test for.

419. The "optimal" investment choice in each case was defined as the alternative with the highest expected value, implying risk neutrality to be optimal for a rational investor. This is consistent with expected utility maximisation and a utility curve that is concave over wealth, as shown in Rabin's Calibration Theorem[158]. For the small stakes used in Experiment 1, the utility function over wealth can be considered to be locally linear

[158] Rabin, M. (2000). Risk Aversion and Expected-Utility Theory: A Calibration Theorem. *Econometrica*, Vol. 68, No. 5, pp1281-1292.

with even very moderate outside wealth. Accordingly, if a subject deviates from expected value maximisation with the small stakes used in this experiment, those deviations could only be rationalised by assuming implausible degrees of risk aversion for that subject: for example, they would refuse a fifty-fifty bet between losing £1,000 and winning £100,000,000 (see again Rabin for more examples of this type). Where two investments had the same expected value, the investment with lower risk (variance in returns) was defined as optimal. Where investments were risky, the returns were drawn from the same underlying distribution (historic annual returns from the Dow Jones Index), meaning that the risk in the two investments were perfectly correlated. Hence there was no benefit in diversifying the investment across the two options. In all cases, therefore, the optimal investment strategy was to invest the entire investment amount in the investment with the highest expected value. Failure to do so implies investment behaviour inconsistent with the long-term interests of a rational self-interested decision-maker with no cognitive constraints.

Task 1: Framing Effects in Risk-Free Investments

420. The first task offered subjects a choice of two five-year fixed-term fixed-rate investments with the same annual gross return (5%). Investment 1 had no up-front fee and an annual management charge that was framed as a fixed percentage of the total balance held at the end of each year. Investment 2 had an up-front fee and an annual management charge, which were both framed as a fixed currency amount. A bias towards choosing Investment 1 would indicate that investors are averse to up-front fees. A bias towards choosing Investment 2 would indicate that investors prefer the certainty of a fixed fee and struggle to deal with percentage frames. The two investments and the attribute values tested (for the Euro version of the experiment) are shown below.

Five Year Investment 1	**Five Year Investment 2**
Fixed gross return of 5% per year	Fixed gross return of 5% per year
No initial set-up fee	An initial set-up fee of €X applies
Annual management fee of 0.8% (payable on the entire amount held at the end of the year)	Annual management fee of €Y (to be paid at the end of each year)

X	**Y**	**E(Investment 1)**	**E(Investment 2)**
240	0	€12 260	€12 457
240	70	€12 260	€12 070
50	10	€12 260	€12 644
50	115	€12 260	€12 064
50	80	€12 260	€12 257

Task 2: Compound Interest Frames in Risk-Free Investments

421. The second task offered subjects a choice of two five-year fixed-term fixed-rate investments with different gross returns. The gross return of Investment 1 was framed as an annual interest rate while the gross return of Investment 2 was framed as a compounded total return over five years. Investment 1 had no up-front fee and an annual management charge that was framed as a fixed percentage of the total balance held at the end of each year. Investment 2 had an up-front fee framed as a fixed percentage of the total balance held at the end of each year and no annual management charge. A bias towards choosing Investment 1 would indicate that investors are averse to up-front fees. A bias towards choosing Investment 2 would indicate that investors prefer the certainty of a pre-calculated compound gross return and struggle to deal with compound interest calculations. The two investments and the attribute values tested (for the Euro version of the experiment) are shown below.

Five Year Investment 1	**Five Year Investment 2**
Fixed gross return of 5% per year	Fixed gross return of X% after 5 years
No initial set-up fee	An initial set-up fee of Y%
Annual management fee of 0.5% (payable on the entire amount held at the end of the year)	No annual management fee

X	**Y**	**E(Investment 1)**	**E(Investment 2)**
22.6	1.6	€12 447	€12 064
30	8.75	€12 447	€11 863
20.5	1.6	€12 447	€11 857
36.6	8.75	€12 447	€12 465
30	1.6	€12 447	€12 792

Task 3: Risk and Ambiguity Aversion in Risk-Free vs. Risky Investments

422. The third task offered subjects a choice between a fixed rate investment and a risky investment, both with a five-year fixed term. The gross return of Investment 1 was drawn from historical values of the annual returns of the Dow Jones Index from 1900 to 2000, the arithmetic mean value of which was provided to subjects in the task instructions (+7.6%). The gross return of Investment 2 was framed as a fixed annual percentage rate. Both investments had no up-front fee and an annual management charge that was framed as a fixed percentage of the total balance held at the end of each year. A bias towards choosing Investment 1 would indicate that investors are risk prone and comfortable with ambiguity regarding the probability distribution of investment returns. A bias towards choosing Investment 2 would indicate that investors are averse to risk and ambiguity. The two investments and the attribute values tested (for the Euro version of the experiment) are shown below.

Five Year Investment 1	**Five Year Investment 2**
Annual returns linked to the Dow Jones stock index	Fixed gross return of Y% per year
No initial set-up fee	No initial set-up fee
Annual management fee of X% (payable on the entire amount held at the end of the year)	Annual management fee of Z% (payable on the entire amount held at the end of the year)

X	**Y**	**Z**	**E(Investment 1)**	**E(Investment 2)**
1	7.6	1	€13 716	€13 716
1	6.6	1	€13 716	€13 091
1	6.6	2	€13 716	€12 443
2	7.6	1	€13 037	€13 716
1	5.6	1	€13 716	€12 488

Task 4: Framing Effects in Risky Investments

423. The fourth task varied the same factors as the first task, but offered subjects a choice between two similarly-risky five-year fixed-term investments. The gross return of both investments was drawn from historical values of the annual returns of the Dow Jones Index from 1900 to 2000, the arithmetic mean value of which was provided to subjects in the task instructions (+7.6%). Investment 1 had no up-front fee and an annual management charge that was framed as a fixed percentage of the total balance held at the end of each year. Investment 2 had an up-front fee and (in some cases) an annual management charge that were both framed as a fixed currency amount. A bias towards choosing Investment 1 would indicate that investors are averse to up-front fees. A bias towards choosing Investment 2 would indicate that investors prefer the certainty of a fixed fee or struggle to deal with percentage frames. The two investments and the attribute values tested (for the Euro version of the experiment) are shown below.

Five Year Investment 1	**Five Year Investment 2**
Annual returns linked to the Dow Jones stock index	Annual returns linked to the Dow Jones stock index
No initial set-up fee	An initial set-up fee of €Y applies
Annual management fee of X% (payable on the entire amount held at the end of the year)	Annual management fee of €Z (to be paid at the end of each year)

X	**Y**	**Z**	**E(Investment 1)**	**E(Investment 2)**
1	400	0	€13 716	€13 846
1	490	0	€13 716	€13 716
1	300	10	€13 716	€13 932
1	800	0	€13 716	€13 269
2	1 000	100	€13 037	€12 399

Task 5: Loss Aversion in Risky Investments

424. The fifth task offered subjects a choice between two risky five-year fixed-term investments: a standard equity-linked investment and a structured product with no risk of capital loss. The gross return of both investments was drawn from historical values of the annual returns of the Dow Jones Index from 1900 to 2000, the arithmetic mean value of which was provided to subjects in the task instructions (+7.6%), but investors in Investment 2 suffered no capital loss if the Dow Jones Index fell. Investment 1 had no up-front fee or annual management charges. Investment 2 had no up-front fee but had an annual management charge that was framed as a fixed currency amount. A bias towards choosing Investment 1 would indicate that investors are averse to the ambiguity and/or complexity of a structured product when the likelihood of capital loss is not specified. A bias towards choosing Investment 2 would indicate that investors are loss averse and are willing to pay to avoid the risk of capital loss. The two investments and the attribute values tested (for the Euro version of the experiment) are shown below.

Five Year Investment 1	**Five Year Investment 2**
Annual returns linked to the Dow Jones stock index	Annual returns linked to the Dow Jones stock index but never make a loss even if Dow Jones goes down
No initial set-up fee	No initial set-up fee
No annual fee	Annual management fee of €X (to be paid at the end of each year)

X	**E(Investment 1)**	**E(Investment 2)**
500	€14 423	€15 221
600	€14 423	€14 572
623	€14 423	€14 423
700	€14 423	€13 924
800	€14 423	€13 275

1.4 Policy Treatments

425. In addition to assessing the cognitive capabilities of investors and identifying behavioural biases that may be material in RIS purchase decisions, Experiment 1 was also intended to test the efficacy of a range of possible policy interventions, informed by the review of biases and policy options from the earlier phase of this project. Most of the treatments were focused upon various ways of simplifying the information presented to subjects, in order to reduce the cognitive load on subjects with capacity-constrained mental resources. Other treatments were intended to improve the quality of decision-making by explaining how to interpret and utilise the available information more effectively. Subjects were randomly assigned to a treatment group and all five tasks received the same treatments. In addition to the baseline procedure described above, seven treatments were tested, giving eight treatment groups in total. Hence, each treatment group had approximately 750 subjects, with approximately 94 subjects in each treatment group within each country. Each of the treatments tested is described below.

Treatment A: Pre-Calculation

426. One policy option that has already been implemented in various forms in certain RIS markets and Member States is to mandate disclosure of pertinent information in a standardised format, before investors enter into a contract with an investment provider. This disclosure is intended to improve transparency, both by enhancing the comparability of different investments and also by making it easier to extract the most important information from sometimes highly-complex investment specifications. Furthermore, in some cases the pre-contractual disclosure transforms the pertinent information into an easier-to-understand and more comparable form, for example when investment risk is described in terms of a categorical risk rating. It is this latter aspect in particular that was tested in Treatment A, by providing subjects in this treatment group with an additional piece of information about each investment in a pre-calculated, standardised and directly comparable format. Specifically, subjects were told the expected net annual return of each investment, if the entire investment amount were to be invested in that investment without having to do the calculation for themselves:

> "The net annual expected return is X% (assuming a €10 000 investment)"

Providing this information removes the need for any calculation by subjects, as the optimal investment is the one with the highest expected net return. If subjects in this treatment group invest a greater proportion of funds optimally than subjects in the baseline group, then pre-contractual disclosure of this kind of information may be an effective remedy for investors with limited cognitive capabilities.

Treatment B: Simplification

427. The investment descriptions in the baseline procedure are comparatively simple, with just three pieces of information provided for each investment. In practice, RIS product literature and marketing material often provides a long list of product features and attributes. This potentially makes it difficult for investors to identify and extract the relevant information when comparing investment options. This hypothesis was tested in Treatment B by providing subjects in this treatment group with investment descriptions in which the pertinent information (P) was combined with (and hence "hidden" amongst) supplementary information (S) in the pattern SSPSPSPSS. Specifically, six pieces of financial product information were drawn at random from a list of twelve statements and the same six pieces of information were assigned to both investments. None of the pieces of supplementary information had any bearing on the expected value of the investments, so were irrelevant for identifying the optimal investment. The complete list of supplementary pieces of information used is given below.

Additional payments not permitted after investment is opened

Bonus +1% interest rate if initial investment greater than €500 000

No withholding tax

Maximum investment of €2 000 000

No minimum investment

Investment open to all those over the age of 16

Fixed term investment of 5 years

All interest rates shown before income tax

Redemption fees not applicable

Interest added to capital annually

Any annual fees and interest are added on the anniversary of opening the investment

All income is re-invested until the end of the fixed term

If subjects in this treatment group invest a smaller proportion of funds optimally than subjects in the baseline group, then simplifying the amount of information provided in product literature or pre-contractual disclosure may be an effective remedy for investors with limited cognitive capabilities.

Treatment C: Standardisation

The investment descriptions in Treatment B are complex but standardised, in that the same supplementary information is provided for both investments. This potentially makes it straightforward to identify the pertinent information as these are the only pieces of information that differ between the two investments. In practice, RIS product literature and marketing material often provide quite different lists of product features and attributes. This might make it even more difficult for investors to identify and extract the relevant information when comparing investment options. This hypothesis was tested in Treatment C by providing subjects in this treatment group with investment descriptions in which the pertinent information (P) was again "hidden" amongst supplementary information (S) in the pattern SSPSPSPSS. Specifically, six pieces of financial product information were drawn at random from the previous list of twelve statements and assigned to the first investment. The remaining six pieces of supplementary information were assigned to the second investment. If subjects in this treatment group invest a smaller proportion of funds optimally than subjects in the baseline group or treatment group B, then standardising the type of information provided in product literature or pre-contractual disclosure may be an effective remedy for investors with limited cognitive capabilities.

Treatment D: Prominence

The investment descriptions in Treatment B are complex but standardised, in that the same supplementary information is provided for both investments. This potentially makes it straightforward to identify the pertinent information as these are the only

pieces of information that differ between the two investments. However, it may be even more straightforward to identify the pertinent information if this information was made more prominent than other pieces of information. This hypothesis was tested in Treatment D by providing subjects in this treatment group with investment descriptions in which the pertinent information (P) was not "hidden" amongst supplementary information (S) but provided first in the pattern PPPSSSSSS. Specifically, six pieces of financial product information were drawn at random from the previous list of twelve statements and the same six pieces of supplementary information were assigned to both investments. Furthermore, the pertinent information was made even more prominent by displaying those pieces of information in a bold typeface. If subjects in this treatment group invest a greater proportion of funds optimally than subjects in treatment group B, then making pertinent information provided in product literature or pre-contractual disclosure more prominent than other information may be an effective remedy for investors with limited cognitive capabilities.

Treatment E: Financial Glossary

428. The remaining three treatments tested ways to equip investors with the knowledge required to make better investment decisions, rather than attempting to simplify the task through framing and presentation changes. As noted earlier, these treatments (E, F and G) consider the provision of relevant knowledge *at the point at which investments are being compared and chosen*. The results should not be extrapolated to indicate the likely impact of knowledge provision at other stages in the RIS purchase decision process, or at other stages in consumers' lives, for example through financial literacy programmes in schools. Subjects in treatment group E were provided with straightforward explanations of the financial terms used in the investment descriptions, prior to completing each investment allocation task. Only relevant terms were provided before each task was completed. The full glossary of explanations is given below.

> *Return*: The increase or decrease in your investment. If you invest €10 000 and get €11 000 back, your return was €1 000 or 10%.
>
> *Annual return*: The increase or decrease in your investment each year. If you invest €10 000 and get €11 000 back after a year, your annual return was €1 000 or 10%.

Loss: A decrease in the value of an investment, i.e. a negative annual return.

Gross return: The increase or decrease in the amount held in your investment, before any fees and taxes are deducted.

Fixed gross return: The rate of return will not change over the period of your investment, but will stay the same every year.

Dow Jones stock index: Indicator of the performance of shares on the New York Stock Exchange. Its rate of return varies over time, and may be positive or negative.

Providing this information potentially helps subjects who are less financially literate to better understand the investment options they are faced with. If subjects in this treatment group invest a greater proportion of funds optimally than subjects in the baseline group, then including this kind of information in RIS product literature or pre-contractual disclosure may be an effective remedy for investors with limited financial literacy.

Treatment F: Decision Advice

429. As well as limited financial literacy targeted in Treatment E, another potential source of poor quality investment decisions is a lack of proficiency in making and assessing a "good" decision. If investors do not know the appropriate criteria to apply or what metrics to use to compare investments in light of their own long-term interests, then even cognitively-capable and financially-literate investors may fail to make optimal investment decisions. Subjects in treatment group F were provided with straightforward explanations of how best to compare investments, how to make the necessary calculations, and how to make the best investment choice in light of that comparison. Three screens of explanation were provided before the first task. A single-screen summary of the same information was repeated before each of the subsequent tasks. The explanations and summary are given below.

[SCREEN 1]

When calculating how to invest your money, you first need to work out which investment gives the highest return over the 5 years. If you believe one investment

gives a higher rate than the other (for example if one gives a return of 10% and another gives a return of 20%) then you should put all your money in the higher return investment. Splitting your money between the investments will only give you some average of the two returns, which will always be lower than the best return.

[SCREEN 2]

For investments where the rate of return is not fixed, it can be difficult to know what is best in the short-term, as the return goes up and down. However over a longer period, such as 5 years, the average rate of return of the market will give you a good guide as to how your investment will perform. This average value can be used in the same way as the return on fixed rate investments, to calculate your total expected return.

[SCREEN 3]

Remember that returns are calculated by multiplying the investment by the annual return, for each year of the investment. So an investment of €10 000 at an annual rate of 10% is worth €10 000 * 110% * 110% * 110% * 110% * 110% = €16 105 after 5 years. If the return is paid only after 5 years, then the return on a €10 000 at a rate of 30% is €10 000 * 130% = €13 000.

Set up fees are applied at the beginning of the investment and annual fees are applied to the total value of the investment at the end of the year after the return has been added.

[SUMMARY SCREEN]

When deciding how to invest remember the following tips:

- For the highest total return, work out which of the two investments gives the better return, and invest all your money in that option.

- For risky investments such as stocks and shares, over the long-term you can assume the historical average rate of return for that investment.

- The final amount is calculated by multiplying by the annual return for each year of the investment (€10 000 at an annual rate of 10% = €10 000 * 110% * 110% * 110% * 110% * 110% = €16 105 after 5 years) or multiplying once if the rate of return is paid after 5 years (€10 000 at a rate of 30% is €10 000 * 130% = €13 000)

- Set up fees are applied at the beginning of the investment and annual fees are applied to the total value of the investment at the end of the year after the return has been added.

Providing this information potentially helps subjects who do not how to invest optimally to better deal with investment choices. If subjects in this treatment group invest a greater proportion of funds optimally than subjects in the baseline group, then including this kind of information in RIS product literature or pre-contractual disclosure may be an effective remedy for investors who are not equipped with knowledge about good investment decision-making.

Treatment G: De-Biasing

430. As well as limited financial literacy and lack of decision-making proficiency, a third potential source of poor quality investment decisions is a lack of awareness of behavioural biases that may influence the average investor. If investors are not aware of potential biases in their own reasoning or preferences that might lead them to make decisions that are not aligned with their own long-term interests, then even cognitively-capable and financially-literate investors may fail to make optimal investment decisions. Subjects in treatment group G were provided with straightforward explanations of common decision-making biases that might influence their own choices, as well as a reason why those biases might lead to a sub-optimal investment decision. A single screen of "de-biasing" information was provided before each task. It should be noted that the success of "de-biasing" relies upon having correctly identified the bias that is most likely to be dominant in any particular choice situation. The de-biasing information for each task is given below.

[TASKS 1 AND 4]

Research has found that in general people try to avoid any possibility of losing money, and may be biased towards choosing an investment with no initial fees over one which involves an initial payment (as this is seen as a loss), regardless of which actually has the better return overall.

It is important to remember that an investment with an initial fee may have a better rate of return or lower annual fee which more than makes up for the initial fee.

[TASK 2]

Studies have shown that when making decisions people prefer options where the outcome is clear over an option where the outcome is uncertain. So for example they may choose an option that has small return over one where they are unsure of the return, even if there is a good chance that the uncertain option could perform better.

This uncertainty may just be because the final return is difficult to calculate. When choosing an investment it is important to not just choose an option because you can easily see what the outcome is. Try to spend time calculating the full impact of all the rates and fees.

[TASK 3]

When choosing how to invest, it is known that people often try to avoid any risk, such as a stock market investment, as they cannot be certain what return they will get and may fear losing some of their money.

However although the returns in risky investments go up and down, on average the returns can often be higher than that of fixed rate investments. Therefore in a long-term investment, you should only worry about the average return of the risky investment, as any variations will tend to cancel out.

[TASK 5]

Research has found that in general people try to avoid any possibility of losing money. When faced with a risky investment, such as investing in the stock

> market, they may be more likely to choose an offer which guarantees that they do not lose any of their initial investment (i.e. a capital guarantee).
>
> However these offers will typically have higher fees associated with them, as you are paying to remove the chance of a loss. For long-term investments, losses tend to be more than offset by the gains in other years, so the chance of making a loss after 5 years is very small. If you want the maximum return consider the average return of each investment after all the fees are taken into account.

Providing this information potentially helps subjects who are unaware of potential biases in their own decision-making to avoid mistakes in their reasoning. If subjects in this treatment group invest a greater proportion of funds optimally than subjects in the baseline group, then including this kind of information in RIS product literature or pre-contractual disclosure may be an effective remedy for investors who are not aware of the possible biases in their investment decisions.

1.5 Subject Incentives

431. Subjects were paid a standard fixed amount for completing the experiment. In order to ensure incentive-compatibility, subjects were told that they would also receive a bonus that depended upon the profit that each investment made in each task. In Tasks 1 and 2, the bonus was only dependent upon the subject's investment allocation decision. In Tasks 3, 4 and 5, the bonus was dependent upon the subject's investment allocation decision and the stochastic returns from the risky investments. Thus, two subjects faced with the same investment choice and making the same investment allocation decision could receive different rewards due to the year-on-year variability of stock market returns. As with real-world investments in risk-bearing RIS, the largest source of payoff variability was variance in stock-market returns, with price differentials being a secondary determinant of total returns.

432. Payment was made in the form of reward points that could later be exchanged for a financial reward. In all countries except Romania (where a different subject panel was used), subjects received points with a financial value of about €1.50 for completing the experiment. The mean bonus for Experiment 1 in these seven countries was worth approximately €1.18, with a standard deviation of €0.83. Subjects in Romania received points with a financial value of about €1.00 for completing the experiment. The mean

bonus for Experiment 1 for Romanian subjects was worth approximately €1.17, with a standard deviation of €0.79.

2 Experiment Results

2.1 Optimality of Investment Decisions

433. Across all subjects, tasks and treatment groups, the total proportion of funds invested optimally in Experiment 1 was 55.9% (55.8% in the baseline treatment group). The proportion of funds invested optimally varied from 60.6% in Task 1 to 52.3% in Task 5. Although these numbers do not look that different from random guessing, in fact we can reject the hypothesis of pure guessing at a 0.001% significance level for all tasks. However, it is striking that these optimality rates are so low, suggesting that subjects struggled with even the simplest of the five investment tasks. Furthermore, just 24.5% of investment allocation decisions were completely optimal, with the entire available investment amount being placed in the investment with the highest expected value. The percentage of investment allocation decisions made optimally varied from 31.6% in Task 1 to 17.1% in Task 3. And only 1.4% of all subjects (90 out of the 6003) invested all their money optimally across the 5 tasks. Thus even where some funds were invested optimally, subjects often hedged their bets and placed some money in both investments. Table 6.3 below shows descriptive statistics concerning the quality of investment decisions observed.

	Task 1	**Task 2**	**Task 3**	**Task 4**	**Task 5**
Proportion of funds invested optimally (standard deviation in brackets)	.606 (.357)	.565 (.353)	.533 (.320)	.571 (.361)	.523 (.346)
Percentage of investment decisions made optimally	31.6%	25.6%	17.1%	27.8%	20.5%

Table 6.3 – Investment optimality (split by task)

In addition the histogram below (Figure 6.2) shows the distribution of optimally invested funds across all five tasks. While the mode of this distribution is at just 50% it is easy to see investments are skewed towards optimality.

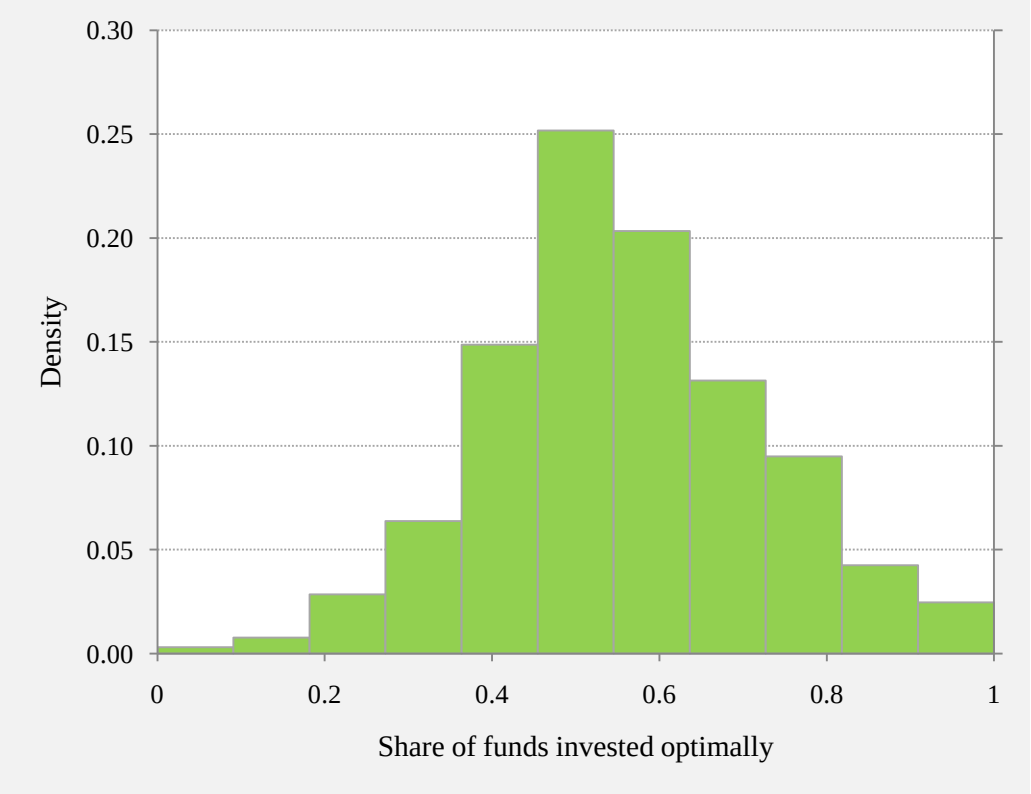


Figure 6.2 – Distribution of share of funds invested optimally (all tasks)

434. To put these numbers into context, we can calculate the average detriment in terms of potential investment returns lost by subjects in Experiment 1. Taking Task 1, in which the highest proportion of funds was invested optimally, the average investment was worth €12 177 after 5 years. If all the funds had been invested optimally, the average fund would have been worth €12 376 after 5 years. Subjects therefore missed out on an average of €199, or €40 every year. The average annual return was 4.0% compared to a potential 4.4%. In other words, the annual return was 10% lower than would have been earned by a fully-rational and cognitively-capable investor. Of course these numbers are purely illustrative and cannot be directly transposed to the real world without detailed knowledge of the actual level of price differentials that exist across different types of investment in each country and typical amounts invested in each of those investments. Nonetheless, they serve to show that the potential loss to investors from sub-optimal investment decisions is substantial. Furthermore, given that investments are often held for many years, small differences in annual returns can compound up to large differences in the final value of an investment.

435. From the angle of Behavioural Economics, the key question is whether non-optimality of investment decisions is simply due to "noisy" decision-making (caused by cognitive limitations or lack of care and attention by subjects) or whether there are also structural features of investment choices that trigger behavioural biases. If this is the case, then these biases would be revealed in Experiment 1 as patterns in the deviations from optimal investment behaviour. Specifically, within each task we vary the parameters such that sometimes the first and sometimes the second investment is optimal. If the share of optimally invested funds depends on which type of investment is optimal we can conclude that deviations from optimality do not just stem from random noise but are systematic and, thus, indicative of behavioural biases. We get clear results on this: subjects' investment choices do deviate from rational choices in systematic ways, consistent with some of the previously-observed biases described in our earlier review of the Behavioural Economics literature.

436. To determine the strength of any choice bias and the impact of policy treatments for each task we regress the share of optimally invested funds on treatment variables and an indicator variable that measures whether there is a systematic bias towards one of the task types.[159] We also include a variable that controls for the size of the incentive faced by each subject (or alternatively, the difficulty of the task faced by the subject), defined as the difference in expected value between the optimal investment and the other investment. The effect of this variable is significant and positive for four of the five tasks, indicating that subjects invested a greater share of funds optimally when the difference in expected value between the two investments was greater. The regressions are shown in Tables 6.4 to 6.8. [160] In Appendix C we present another set of regressions that additionally controls for a set of exogenous socio-economic variables such as age, gender, and nationality (Tables C1 to C5) as well as a third set with further controls for education and for mathematical and financial ability (Tables C6 to C10).

---

[159] All regressions in this chapter are Ordinary Least Squares (OLS) regressions, with the independent variables entered as covariates.

[160] For non-technical readers who are unsure how to interpret regression tables: the second column shows the magnitude of each effect and the fifth column shows whether or not that effect is statistically significant (i.e. the probability that the magnitude of the effect does not differ from zero). The appropriate significance level depends upon the relative costs of Type I and Type II errors (false positives and false rejections) in a particular context, but by convention $p<0.01$ we consider a highly significant effect; $p<0.05$ we consider a significant effect; and $p<0.10$ we consider a weakly significant effect.

Task 1: Framing Effects in Risk-Free Investments

437. In Task 1 subjects make worse decisions when Investment 1 (annual percentage fee) is optimal compared to when Investment 2 (up-front and annual fixed fees) is optimal. As the regressions in Table 6.4 show, the proportion of funds invested optimally falls by 4.7 percentage points (see the estimated coefficient on the variable "Inv1 Optimal" which is a dummy variable equal to one if Investment 1 is optimal and equal to zero otherwise). In other words, subjects made more mistakes when the optimal investment had percentage fees, implying they were biased toward choosing the investment with fixed fees. One possible explanation is that percentage fees are hard to compute, so ambiguity-averse subjects prefer the certainty of a fixed fee in an environment with sure investment returns.

N	6003
F(9,5993)	7.28
Prob>*F*	0.0000
R-squared	0.0108
Adj. R-squared	0.0093
Root MSE	.35526

Source	***SS***	***df***	***MS***
Model	8.2719	9	.91910
Residual	756.36	5993	.12621
Total	764.63	6002	.12740

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	-.0469	.0094	-4.97	0.000	-.0653	-.0284
Incentive	.0002	.0001	4.44	0.000	.0001	.0003
Pre-Calculation (A)	.0263	.0180	1.46	0.143	-.0089	.0614
Simplification (B)	-.0116	.0184	-0.63	0.527	-.0478	.0245
Standardisation (C)	-.0582	.0186	-3.13	0.002	-.0948	-.0217
Prominence (D)	-.0037	.0182	-0.20	0.838	-.0394	.0319
Financial Glossary (E)	-.0204	.0181	-1.13	0.260	-.0559	.0151
Decision Advice (F)	.0110	.0183	0.61	0.547	-.0249	.0470
De-Biasing (G)	.0039	.0181	0.21	0.831	-.0315	.0393
Intercept	.6127	.0149	41.22	0.000	.5836	.6419

Table 6.4 – Investment optimality in Task 1

Task 2: Compound Interest Frames in Risk-Free Investments

438. As can be seen from the regression shown in Table 6.5, the optimality of subject's investment decisions in Task 2 is lower when Investment 1 (annual return frame) is optimal than when Investment 2 (compound return frame) is optimal (see the estimated coefficient for "Inv1 Optimal"). The proportion of funds invested optimally falls by 6.7 percentage points when the annual frame investment is the optimal choice. Subjects display a bias toward choosing investments in which interest rates are described in a compound frame, which could be explained by compound returns being easier to

compute (as investors struggle to compound an annual interest rate over multiple years) and therefore more attractive to ambiguity-averse subjects.

N	6003
F(9,5993)	6.56
Prob>*F*	0.0000
R-squared	0.0098
Adj. R-squared	0.0083
Root MSE	.35149

Source	***SS***	***df***	***MS***
Model	7.2953	9	.81059
Residual	740.41	5993	.12355
Total	747.70	6002	.12458

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	-.0673	.0154	-4.38	0.000	-.0975	-.0372
Incentive	.0002	.0000	6.09	0.000	.0001	.0002
Pre-Calculation (A)	.0260	.0178	1.46	0.143	-.0088	.0608
Simplification (B)	-.0018	.0182	-0.10	0.923	-.0375	.0340
Standardisation (C)	-.0486	.0184	-2.64	0.008	-.0848	-.0125
Prominence (D)	.0158	.0180	0.88	0.379	-.0194	.0511
Financial Glossary (E)	.0072	.0179	0.40	0.689	-.0279	.0423
Decision Advice (F)	.0202	.0182	1.11	0.265	-.0154	.0558
De-Biasing (G)	.0025	.0179	0.14	0.890	-.0326	.0375
Intercept	.5187	.0153	33.84	0.000	.4886	.5487

Table 6.5 – Investment optimality in Task 2

Task 3: Risk and Ambiguity Aversion in Risk-Free vs. Risky Investments

439. In Task 3 we find an extremely strong aversion against the risky asset whose return is based on (historic vales of) the Dow Jones stock index (Investment 1). If the risky choice is optimal the proportion of optimally-invested funds falls by a staggering 27 percentage points compared to the case when the risk-free choice is optimal (see the estimated coefficient for "Inv1 Optimal" in Table 6.6). Hence, we find strong evidence

for uncertainty aversion (aversion against risk and ambiguity). To test this hypothesis we repeated the regression analysis controlling for self-reported willingness to take risk. For subjects who categorise themselves as completely unwilling to task risks the proportion of optimally-invested funds falls by 39 percentage points if the risky investment is optimal. On the other hand, for self-reported extreme risk takers the equivalent drop is only 5% percentage points. This difference is not explained by ability: the extreme risk takers are more likely to invest sub-optimally across all versions of Task 3, with their average proportion of optimally-invested funds being 20 percentage points lower than other subjects.

N	6003
F(9,5993)	86.12
Prob>*F*	0.0000
R-squared	0.1145
Adj. R-squared	0.1132
Root MSE	.30136

Source	***SS***	***df***	***MS***
Model	70.394	9	7.8215
Residual	544.29	5993	.09082
Total	614.68	6002	.10241

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	-.2705	.0118	-22.84	0.000	-.2937	-.2473
Incentive	.0001	.0000	7.22	0.000	.0001	.0001
Pre-Calculation (A)	.0685	.0152	4.50	0.000	.0386	.0983
Simplification (B)	-.0166	.0156	-1.06	0.289	-.0472	.0140
Standardisation (C)	.0095	.0158	0.60	0.549	-.0215	.0405
Prominence (D)	-.0125	.0154	-0.81	0.417	-.0428	.0177
Financial Glossary (E)	.0067	.0154	0.43	0.664	-.0235	.0368
Decision Advice (F)	.0108	.0156	0.69	0.489	-.0197	.0412
De-Biasing (G)	.0030	.0153	0.19	0.846	-.0271	.0330
Intercept	.6171	.0125	49.21	0.000	.5925	.6417

Table 6.6 – Investment optimality in Task 3

Task 4: Framing Effects in Risky Investments

440. In Task 4 we find, contrary to Task 1, that subjects' performance suffers when the optimal investment has fixed fees. If the optimal investment has only annual percentage fees (Investment 1) the total proportion of funds invested optimally increases by 8.7 percentage points compared to the case when the optimal investment has fixed up-front and annual fees (Investment 2). Controlling again for self-reported risk appetite we find that the extreme risk takers are almost immune to this effect, underlining the idea that an aversion against fixed and upfront fees is related to an aversion against risk. One possibility is that percentage fees are seen as less risky because the amount of the fee is correlated with investment returns, which in turn reduces the "risk" of paying a high fee if the investment performs poorly. We discuss this again below.

N	6003
F(9,5993)	14.70
Prob>*F*	0.0000
R-squared	0.0216
Adj. R-squared	0.0201
Root MSE	.35718

Source	***SS***	***df***	***MS***
Model	16.884	9	1.8760
Residual	764.57	5993	.12758
Total	781.46	6002	.13020

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	.0872	.0203	4.30	0.000	.0474	.1270
Incentive	.0000	.0001	0.24	0.811	-.0001	.0001
Pre-Calculation (A)	.0182	.0181	1.01	0.312	-.0172	.0536
Simplification (B)	-.0392	.0185	-2.12	0.034	-0.076	-.0029
Standardisation (C)	-.0847	.0187	-4.52	0.000	-.1215	-.0480
Prominence (D)	-.0160	.0183	-0.87	0.382	-.0518	.0199
Financial Glossary (E)	-.0075	.0182	-0.41	0.679	-.0432	.0282
Decision Advice (F)	.0081	.0184	0.44	0.659	-.0280	.0443
De-Biasing (G)	-.0241	.0182	-1.33	0.185	-.0597	.0115
Intercept	.5498	.0153	36.00	0.000	.5199	.5797

Table 6.7 – Investment optimality in Task 4

Task 5: Loss Aversion in Risky Investments

441. In Task 5 we find that subjects display a substantial aversion to structured products that require fees. There is no aversion to capital loss, but rather an aversion to the payment of a fee for avoiding it. If the unstructured option (Investment 1) is optimal the proportion of optimally-invested funds increases by 14.6 percentage points compared to the case when the structured product (Investment 2) is optimal. Subjects appear to reveal an aversion against the more complex and/or ambiguous option.

N	6003
F(9,5993)	33.47
Prob>*F*	0.0000
R-squared	0.0479
Adj. R-squared	0.0464
Root MSE	.33739

Source	***SS***	***df***	***MS***
Model	34.285	9	3.8095
Residual	682.20	5993	.11383
Total	716.48	6002	.11937

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	.1455	.0089	16.32	0.000	.1280	.1629
Incentive	.0000	.0000	1.90	0.057	-.0000	.0000
Pre-Calculation (A)	.0733	.0171	4.30	0.000	.0398	.1067
Simplification (B)	.0110	.0175	0.63	0.530	-.0233	.0453
Standardisation (C)	.0264	.0177	1.49	0.136	-.0083	.0611
Prominence (D)	.0176	.0173	1.02	0.307	-.0162	.0515
Financial Glossary (E)	.0148	.0172	0.86	0.391	-.0190	.0485
Decision Advice (F)	.0391	.0174	2.25	0.025	.0050	.0733
De-Biasing (G)	.0121	.0171	0.71	0.479	-.0215	.0458
Intercept	.4012	.0140	28.63	0.000	.3737	.4286

Table 6.8 – Investment Optimality in Task 5

Interpretation of Findings

442. There are two aspects of investment products that consumers in our experiment dislike enormously: risk and complexity. Subjects display an extreme aversion to uncertainty which is captured by the highly significant and large coefficient of the variable "Inv1 Optimal" in the estimations shown in Table 6.6. Moreover, consumers try to hedge some of the risk of investments that are linked to stock returns by opting for percentage fees rather than upfront fees even when this is more costly (and although they dislike percentage fees in deterministic environments). These deviations from expected value

maximisation are so extreme that they cannot be explained by standard expected utility theory, that is, through standard models in which risk aversion arises as a consequence of the decreasing marginal utility of wealth. *There is an aversion against investment into stocks that goes beyond risk aversion.*

Consumers' dislike of structured products is an effect that we measure in our data to be of almost similar size as the deviations caused by the dislike of risk. This is perhaps surprising as the structured product eliminates risk (of capital loss). Thus, consumers aversion to complexity in Task 5 more than wipes out their risk aversion. Such complexity aversion in risky choice environments has previously been observed e.g. by Huck and Weizsacker (1999)[161]. Figure 6.3 summarises the relative magnitude of the "detriment" caused by the choice bias observed in each of the five tasks.

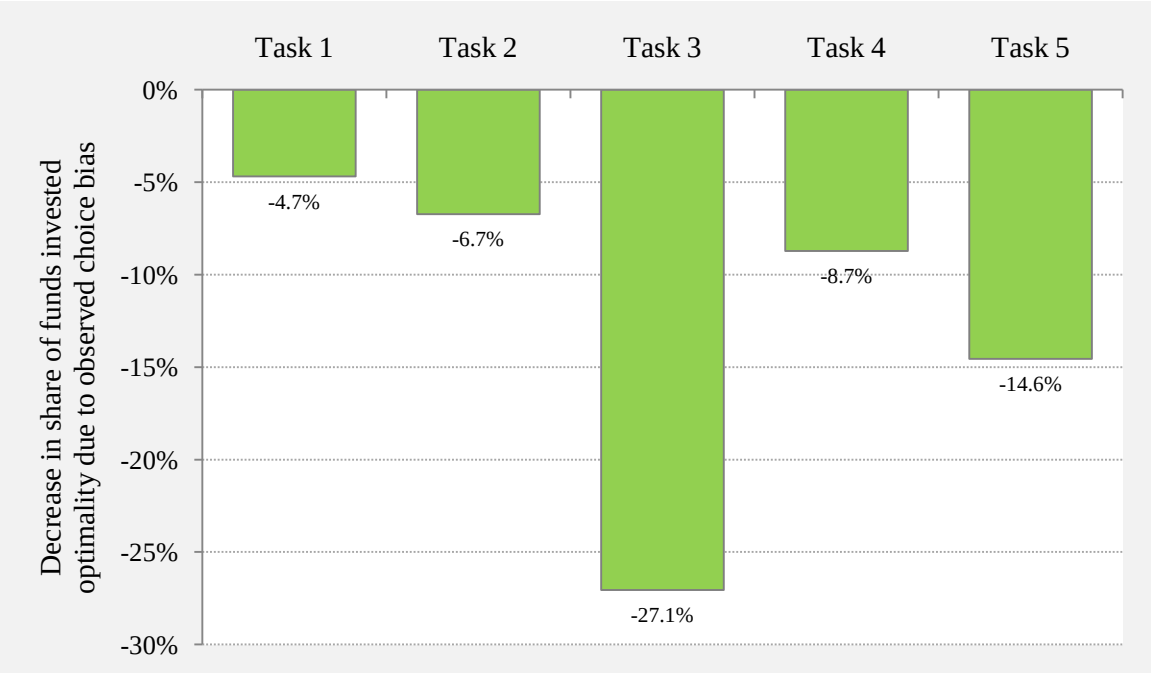


Figure 6.3 – Relative magnitude of detriment caused by choice bias in each task

2.2 Impact of Policy Treatments

443. The regressions shown in Tables 6.4 to 6.8 (and C1 to C10 in Appendix C) show that most of the presentational variations have no discernible effect on investment

[161] Huck, S. & Weizsacker, G., 1999. Risk, Complexity, and Deviations from Expected-Value Maximization: Results of a Lottery Choice Experiment. *Journal of Economic Psychology*, 20(6), pp 699-715.

behaviour. Only pre-calculation and standardisation of product information matter. Compared to the baseline, providing pre-calculated comparative information improves investment performance in Tasks 3 and 5 (by 6.9 and 7.3 percentage points respectively). Moreover, we find that complex information presented in an un-standardised fashion is detrimental to performance in Tasks 1, 2, and 4 (reducing the share of optimally invested funds by 5.8, 4.9 and 8.5 percentage points respectively).

444. In Tables C11 to C15 in Appendix C we show an alternative set of regressions where the effects of complexity, standardisation and prominence are decomposed.[162] These estimation results underline the consumer detriment caused by complexity of information. In three of the five investment tasks (Tasks 1, 2 and 4; Tables C11, C12 and C14) adding additional (superfluous) information significantly reduced subjects' share of funds invested optimally (by 5.8, 4.9 and 8.5 percentage points respectively). However, standardising the information presented for each investment, so that the pertinent information could more easily be identified, somewhat mitigated the effect of additional complexity, offsetting some of the reduction in share of funds invested optimally (by 4.7, 4.7 and 4.5 percentage points respectively). In contrast, making the pertinent information more prominent through re-ordering and using large, bold fonts has no significant impact. Only in those tasks where behaviour is heavily biased by consumers' aversions against risk (Task 3; Table C13) or the complexity and ambiguity of structured products (Task 5; Table C15) does the addition of superfluous information have no further effect on behaviour. This is not surprising: if one product has a feature that really stands out, and a feature that consumers heavily dislike, consumers are simply more likely to discard all other information and, hence, are less likely to be confused by irrelevant information.

445. Table 6.9 below summarises the impact of the policy treatments, where the effects were significant at the 95% level. It is notable that providing pre-calculated comparative information only has a significant benefit in Tasks 3 and 5 as these are the same tasks in which consumers' biases (aversion to uncertainty and product complexity) are the most

[162] Specifically, we define a dummy variable for each of the three aspects of presentation. The variable "Complex" is equal to 1 in all three treatments where additional superfluous attributes of the products are shown (Treatments B, C and D). The variable "Standardised" is equal to 1 in the two treatments where all information is ordered such that comparison is eased (Treatments B and D). The variable "Prominent" is equal to 1 when the relevant information is presented before the irrelevant information and in a larger, bold font.

likely to lead to sub-optimal investment. Moreover, these two tasks involve choices between investment products of different types (fixed rate vs. equity and equity vs. structured), while the other tasks involve choices between two investments of the same type. Choosing across product classes may be a harder task than within product classes, which could explain why disclosing pre-calculated and comparable information on the effective return of each investment only appears to be beneficial in these two tasks. However, this policy treatment does not cause harm in other tasks, so overall has a beneficial impact on the optimality of consumers' investment decisions. Thus, it appears that simplification and standardisation mitigate calculation errors, while pre-calculated and directly-comparable information mitigates biases.

Treatment	**Task 1**	**Task 2**	**Task 3**	**Task 4**	**Task 5**
Pre-Calculation (A)			+6.8%		+7.3%
Complexity	-5.8%	-4.9%		-8.5%	
Standardisation	+4.7%	+4.7%		+4.5%	
Prominence					
Financial Glossary (E)					
Decision Advice (F)					+3.9%
De—biasing (G)					

Table 6.9 – Change in share of funds invested optimally due to policy treatments

2.3 Influence of Investor Characteristics

446. As we have seen earlier there is huge variation in the financial savvy and the cognitive capabilities of consumers tested in this experiment. The share of optimally invested funds varies from virtually zero to virtually 100%. In the presence of such heterogeneity it is interesting to analyse whether some of this variation can be explained by observable characteristics of the subjects. To this end we regress consumers' share of optimally invested funds (across all five tasks) on socio-demographics and self-reported ability variables. The results are shown below in Table 6.10.

447. While the R-square of this regression is low (.02), that is, while there is considerable heterogeneity between consumers who share the same observable characteristics, we do find highly significant effects of many variables:

    a. Age matters and its effect is hump-shaped with performance peaking around the age of 45. The size of this age effect is substantial. When compared to a 65-year old, a 45-year old invests around an extra 1 percentage point of his funds optimally (see Figure 6.4 below for a graphical representation).

    b. Female consumers do significantly worse than male consumers (after controlling for education and mathematical ability). They invest on average 1 percentage point less of their funds optimally than males.

    c. Education matters substantially with every year of extra education increasing the share of optimally invested funds by .3 percentage points. Accordingly, four years of extra education are roughly equivalent to the difference between a male and a female or the difference between a 45- and 65-year old.

    d. Reported maths or economics education has no effect. However, self-reported maths and financial abilities are highly significant. The difference between the highest and the lowest ratings equate to 4.5 percentage points of better invested funds for maths and 5.2 percentage points of better invested funds for financial ability (with p-values for both variables of 0.000)

    e. On the other hand, holding of actual real-life assets does not correlate with investment savviness.

448. We believe (c) and (d) to be of potentially significant importance for policy interventions. Not only does *general maths and finance education* improve actual decision-making, one can also identify those consumers who will struggle in the marketplace and not by asking them "do you find it difficult to make investment decisions" but by asking them "do you have trouble with financial mathematics such as computing compound interest?". These results also suggest that, while Treatments E, F

and G had no significant impacts, consumer education programs may play a useful role, especially if they are targeted at improving numeracy and financial literacy.

449. Finally, there are several country effects. Taking the UK as a baseline, Poles (2 percentage points), Italians (1.7 percentage points) and Romanians (3.9 percentage points) all do significantly worse (again after controlling for education etc.). These variations could arise for many reasons, for example differences in task comprehension due to translation quality differences between countries.

450. In Table C16 in Appendix C we repeat the same regression analysis of the effect of subject characteristics on overall investment performance, but in this case we include two additional (endogenous) variables, both of which have a highly significant effect.[163] Subjects' scores in the 10-question applied financial literacy test ("money quiz") completed at the end of the online study have a large impact on investment performance, with one extra question correct equating to one extra percentage point of funds invested optimally. Subjects who took a longer time to complete the online study also invested a greater share of funds optimally, but the effect is tiny: an extra 10 minutes spent completing the study equates to an extra 0.1 percentage points of funds invested optimally.

[163] Note that because these measures are both endogenous to the study, one must be careful in extrapolating causal relationships from observed correlations. Any correlation could be caused by a third, unobserved variable that causes both observed effects (e.g. subjects might make better investment decisions in the tasks *and* score better on the money quiz because they encountered fewer external distractions than other subjects).

N	6003
F(17,5985)	8.13
Prob>*F*	0.0000
R-squared	0.0226
Adj. R-squared	0.0198
Root MSE	.16687

Source	***SS***	***df***	***MS***
Model	3.8477	17	.22633
Residual	166.65	5985	.02784
Total	170.50	6002	.02841

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Age (years)	.00246	.00097	2.54	0.011	.00056	.00436
Age squared	-.00003	.00001	-2.44	0.015	-.00005	-.00001
Gender (M=0, F=1)	-.01035	.00450	-2.30	0.022	-.01917	-.00153
Age left education (years)	.00265	.00074	3.59	0.000	.00120	.00410
Mathematics education	-.00324	.00206	-1.57	0.116	-.00728	.00080
Economics education	.00023	.00261	0.09	0.929	-.00488	.00534
Self-rated maths ability	.00497	.00122	4.07	0.000	.00257	.00736
Self-rated finance ability	.01292	.00281	4.59	0.000	.00741	.01844
Self-rated risk appetite	-.00381	.00104	-3.65	0.000	-.00586	-.00176
Financial asset holding	.00221	.00154	1.43	0.152	-.00082	.00524
Germany	-.01127	.00886	-1.27	0.203	-.02865	.00609
Poland	-.02029	.00910	-2.23	0.026	-.03812	-.00245
France	.00212	.00887	0.24	0.811	-.01527	.01952
Italy	-.01774	.00893	-1.99	0.047	-.03524	-.00025
Czech Republic	-.01421	.00875	-1.63	0.104	-.03136	.00293
Romania	-.03919	.00945	-4.15	0.000	-.05771	-.02067
Sweden	-.00956	.00893	-1.07	0.285	-.02707	.00795
Intercept	.43836	.02531	17.32	0.000	.38873	.48798

Table 6.10 – Impact of subject characteristics on investment performance

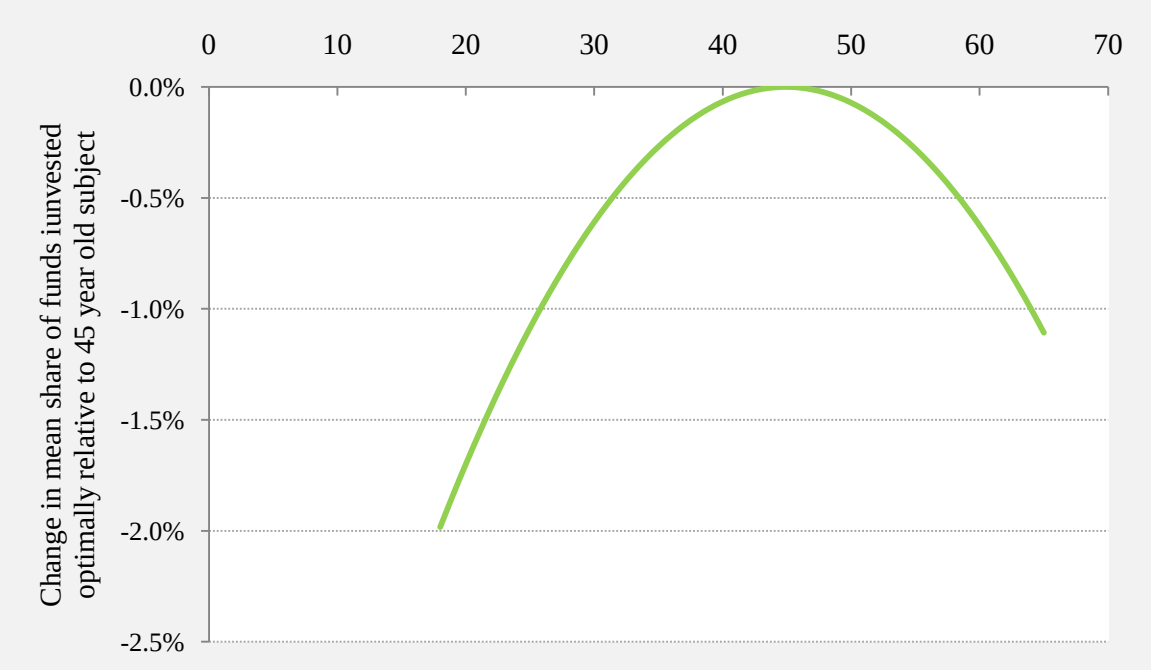


Figure 6.4 – Estimated impact of age on share of funds invested optimally (all tasks)

3 Conclusions

3.1 Investor Capability and Behavioural Biases

451. We find that consumers struggle with even comparatively simple investment decisions in an experimental context. The proportion of funds invested optimally in Experiment 1 was strikingly low, at just 55.9%. Of course, actual monetary incentives are low and subjects do not spend vast amounts of time on these decisions. Consequently, one should not over-interpret the level effects that we find. On the other hand, real-life investment decisions are considerably more complicated which suggests that it would be naïve to assume the problems detected here would be non-existent in real life.

452. Furthermore, we find strong evidence of biases in un-advised consumer investment decisions: extreme aversion against uncertainty; aversion against complex (structured) products; and confusion in the presence of complex (superfluous) information. In circumstances where a more risky or complex investment is the optimal choice, the share of funds invested optimally falls by 15 to 27 percentage points. In choices where the previous biases against uncertainty and product complexity do not play a role, additional superfluous complex information reduces the share of funds invested optimally by 5 to 8 percentage points.

453. We can also identify those people who are more likely to make sub-optimal investment decisions: the youngest and the oldest (female) consumers and the less well-educated. Crucially, the results of Experiment 1 also suggest that people know indirectly when they are at risk of making poor investment decisions: we can identify problem groups by asking them about their maths and finance abilities. These results also speak to the potential impact of raising numeracy and financial literacy, with the most numerate and financially literate consumers (as rated by themselves) investing an extra 5 to 9 percentage points of funds optimally.

3.2 Effectiveness of Policy Treatments

454. We have very clear results on the efficacy of the different policy options we tested. The result that stands out concerns complexity caused by superfluous information and a lack of standardisation. There is considerable consumer harm caused by confusion stemming from large information sets with considerable amounts of information that is irrelevant. Most of this detriment can be overcome when the presentation of information is standardised across options, aiding comparison of different products. The standardisation ensures that consumers can compare products characteristic by characteristic. This appears to help them in weeding out the inessential and in focusing on the key parameters. In the presence of such standardisation consumers invest an additional 5 percentage points of their total funds optimally, which in the context of RIS appears to be a large number.

455. Not every presentational change leads to improved decision-making. Making the key characteristics prominent by putting them on top of the list does not further aid decisions. Consumers are smart enough to find out what is relevant if they can compare characteristics side by side. Further regulation is in this case of no benefit. This is interesting, as in principle, there would be scope for further improvement. Hence, any such presentational changes should be carefully tested before introduction, as seemingly small differences in implementation may be critical to their success or failure.

456. Consumers also benefit from provision of pre-calculated and directly comparable information about investment products, that is, in our case from objectively computed key information about the product such as the effective price or effective return. This appears to have the greatest effect in cases where investors would otherwise invest less

optimally due to strong biases (Tasks 3 and 5 in this experiment). This effect is particularly relevant in non-stochastic environments where precise information can be disclosed without any remaining uncertainty. For higher stakes decisions between risky investments, suitability involves many more factors than simply optimising the expected value. Nonetheless, providing information about some of those factors in a simple, standardised and easily-comparable format has the potential to also aid consumers in their decision-making.

457. De-biasing, explanations of financial terms, and decision-making advice prove to be almost completely ineffective in this experiment. Of course, we have implemented these ideas in comparatively specific ways both in the presentation and context. Moreover, there is no repetition. Thus, we cannot rule out the possibility that such instruments might have an effect in an environment where consumers are repeatedly confronted with such information, or where such information is learned through some alternative mechanism.

3.3 External Validity, Limitations and Further Research Questions

458. As already stated, in an experiment such as this actual monetary incentives are low and subjects do not spend vast amounts of time on their hypothetical decisions and so one should not over-interpret the level effects that are found. Many of the real strengths of these experiments lie in the comparison of different treatments because experiment- or subject-pool-specific idiosyncrasies cancel out. This generally lends such treatment comparisons higher degrees of external validity. Our main results concern on the one hand the sources of suboptimal investment behaviour and on the other possible policy interventions. Regarding the former there are no reasons to believe that the biases we find would not matter in real life. If such systematic deviations from optimality occur in these stylised and simple situations it would be naïve to believe they would not occur in more complex real-life situations. Regarding the latter, one has to be slightly more careful in interpreting the findings. Standardisation has a huge effect in our simple setting, so one should expect that this result will carry over. Surely, in more complex situations standardisation cannot be harmful. However, it is possible that a real-life situation is fraught with so many other difficulties that the effect of standardisation of information would be negligible. We have seen this to some extent in our own data: in Tasks 3 and 5 the overwhelming forces were aversion against the risk or complexity of

one of the available products and these forces completely overpowered the standardisation of information. Similarly, one has be careful with our negative findings on the scope for consumer education or de-biasing. As mentioned earlier, these might be worthwhile interventions if their efficacy is improved through repeated encounter.

459. A number of lines of further research are suggested by the findings of Experiment 1. The first is to identify and trial ways to overcome investors' biases against uncertainty and product complexity in un-advised investment decisions, perhaps focusing on the consumer groups with the highest risk of making poor investment choices. A second, and related, line of enquiry would be to determine whether these high risk groups face any barriers – real or perceived – to obtaining high quality independent financial advice, as they are likely to benefit the most from such advice. Thirdly, given the potentially large impact of standardisation of presentation and pre-contractual disclosure of important information, this policy remedy would merit further and more detailed investigation. Such research should determine which micro-level variations in presentation lead to the greatest benefit from standardisation, as well as the most appropriate method and format of providing such information so that it is both timely and noticed by consumers.

460. Pending such further research, we draw out some initial policy implications of Experiment 1 in the final chapter of this report. Before that, in the next two chapters, we describe two further experiments in which some of the cognitive and social factors operating in advised RIS purchase decisions were investigated.

PART 2: EXPERIMENTS

CHAPTER VII

EXPERIMENT 2: COGNITIVE AND BEHAVIOURAL FACTORS IN ADVISED INVESTMENT DECISIONS

Retail Investment Services: Experiment 2 – Cognitive and Behavioural Factors in Advised Investment Decisions[164]

1 Introduction: Objectives and Study Design

1.1 Objectives

461. We observed in previous chapters, most notably in the literature review and in the online survey of purchasing behaviour, that professional advice is a key element of the typical retail investor's decision process. It is also a linchpin through which different tendencies to make mistakes can be either avoided or amplified, depending on whether there is a conflict of interest between the advisee and the advisor. We also observed that the value and impact of advice should depend on how advisees deal with the recommendations or information they receive. On a related note, we described how it is commonly believed that consumers may be (irrationally) averse to paying up-front fees for advice. Both of these issues – how advisees perceive and respond to possible conflicts of interest, and whether they are averse to paying up-front fees for advice – are addressed in Experiment 2.

462. In this experiment we focus on a single aspect of the interaction between advisors and advisees: a possible conflict of interest and how advisees perceive this conflict. Do subjects understand and adequately react to a disclosed conflict of interest? How does this affect their willingness to pay for advice? And how does this affect their decision-making? Though we are interested mainly in these strategic aspects of advice, we also explore whether, in a given context, decision-makers can appropriately value even clearly unbiased information or whether their willingness to pay for information about a risky choice is (detrimentally) affected by a behavioural bias.

463. With respect to the interaction between advisors and advisees, the present study leaves out a number of aspects that are of policy relevance and importance. One such aspect is the role of direct communication between advisors and advisees, which is addressed in our subsequent, complementary laboratory experiment (Experiment 3), described in the next chapter. In this experiment we have adopted a very narrow view of "advice". In particular, we leave aside many functions that advisors and salespeople perform in the

[164] Primary author(s) of this chapter: Steffen Huck and Roman Inderst

market for RIS. For instance, they may play a key role in facilitating transactions: without their help, customers may not be willing or able to take the steps that are necessary to make the respective investments. Also, while our experiment touches in a very stylised way on the advisor's role of disclosing the properties of investment opportunities, in practice the task of explaining different product features may be substantially more complex. Furthermore, for the purposes of this online experiment (as well as for the subsequent laboratory-based Experiment 3) we often deliberately create strongly biased incentives for the "advisor", i.e., the subject who is in possession of information that is relevant for the decision-making "advisee". This should not be taken to indicate that real world conflicts of interest between the advisor and the advisee are equally strong, or for that matter stronger or weaker, in particular markets. In fact, while commissions and other contingent payments may give rise to such conflicts, in practice there may also be many mitigating factors that are clearly absent in our stylised experimental setting, such as the fear of losing reputation, long-standing customer-client relationships or supervision.

464. In terms of policy, three aspects of Experiment 2 are particularly noteworthy. The first and possibly most important one is whether the disclosure of conflicts of interest, possibly aided by clear "health warnings," leads to an improvement in consumers' advised investment decision-making. The second is whether enhanced disclosure is necessary, as consumers would otherwise be insufficiently wary and thus react inappropriately to information and recommendations received from biased advisors. The third is whether there might be a tendency to avoid up-front payment for information. In this case, policies that would restrict "indirect" payments through commissions, so as to eliminate a conflict of interest, could have the drawback of excessively discouraging consumers from obtaining professional financial advice.

1.2 Sampling Strategy and Data Collection

465. In order to sample from a wide and representative range of consumers, the data collection was carried out in conjunction with Experiment 1. We therefore tested around 6,000 consumers in eight EU Member States using a web-based survey method (see Chapter VI Section 1.2 for further details). All experimental treatments were repeated in each country to ensure that differences between countries were not confounded with the treatments. Within each country, subjects were randomly assigned to a treatment group.

Participation in the experiment was restricted to people aged 18 or over and who were permanent residents of the respective country. The experiment was translated from English into each of the seven other languages by a third-party professional translation agency; proof-read and edited by a second translator to ensure accuracy and clarity; and then passed to independent native speakers and to the EC for a further round of proof-reading and editing.

466. Subjects were recruited via an e-mail that directed them to an internet survey presented in Adobe Flash, embedded in a standard HTML page. Subjects were recruited from actively managed and maintained access panels, compliant with ICC/ESOMAR codes and guidelines for conducting research on the internet. Subjects received an appropriate financial incentive for participating in the survey. To ensure incentive-compatibility subjects also received additional incentives dependent upon the outcome of each task, as described in more detail later. The experiment was piloted online on 100 subjects in the UK from 30th July to 2nd August 2010. Data collection took place in the eight countries from 4th August 2010 to 20th August 2010. Consistency test questions placed at the start and end of the survey and the completion time for each respondent were used to filter low-quality responses, giving a final sample size of 6,003 subjects.

467. For full details of the sample and the data collection methodology please refer to the relevant section of the previous chapter. The advice provided to the online subjects in Experiment 2 was generated in an earlier laboratory session using appropriately-incentivised advisor subjects. This step is described in more detail in the relevant section below.

1.3 Procedure, Tasks and Treatments

468. Experiment 2 consisted of five risky investment choice tasks, preceded by the tasks for Experiment 1 and instruction screens, and followed by a short survey to collect subject characteristics. Survey measures included the socio-demographic background of each subject; financial experience; self-rated numeracy; risk aversion; generalized trust; Bayesian reasoning; and a 10 item multiple choice "Money Quiz" to assess basic financial literacy. The exact procedure followed by each subject varied according to which treatment group they had been randomly assigned to. We describe the procedure

and the experimental treatments here. The complete experiment protocol and descriptions of each treatment are included in an appendix to this report.

469. The five investment allocation tasks each had the same basic structure. Subjects were told that they had a fixed number of "points" and had to decide whether or not to invest those points in a risky investment opportunity. The use of points (standard in many economics experiments) rather than hypothetical monetary amounts ensured that subjects would not be influenced by any framing effects of using real currencies and amounts (unlike in Experiment 1 where we deliberately chose to look for such framing effects). Subjects were free to invest all the points, some of the points, or none of them. The subjects were told the payoffs if the investment opportunity were profitable and if it were a failure, as well as the probability that the investment would be profitable, described in terms of the roll of a fair die (to ensure that subjects were crystal clear about the objective probability of success and failure). They were also told that the investment success or failure would be determined using a computer and the return on each investment calculated. Furthermore, subjects were told that they would receive a financial incentive that depended upon the total amount of points they held after each task, including retained (i.e. non-invested) points. The complete details of these incentives and the amounts paid out are given below. In some tasks and treatment groups the investment decision was preceded by the opportunity to purchase information or advice about the outcome of the investment opportunity. After making each investment decision the outcome of the investment was realised but not shown to the subject, so as not to influence subsequent decisions. At the end of the experiment each subject received feedback on the outcome of all five investment tasks and was told how much their total reward would be.

470. For each decision task subjects were shown all relevant information on a single screen and the information remained on screen until the subjects had made their decision. Subjects were randomly assigned to one of three treatment groups for Tasks 1 and 2 and then to one of ten treatment groups for Tasks 4 and 5 (using a 2 x 5 full factorial design, described below). All subjects completed the same task for Task 3. The order in which the five tasks were completed was fixed, so that strategic tasks (Tasks 4 and 5) were completed last and strategic considerations did not influence the choices made in earlier

(non-strategic) tasks. The layout of the investment decision screen is shown below in Figure 7.1 for an example task:

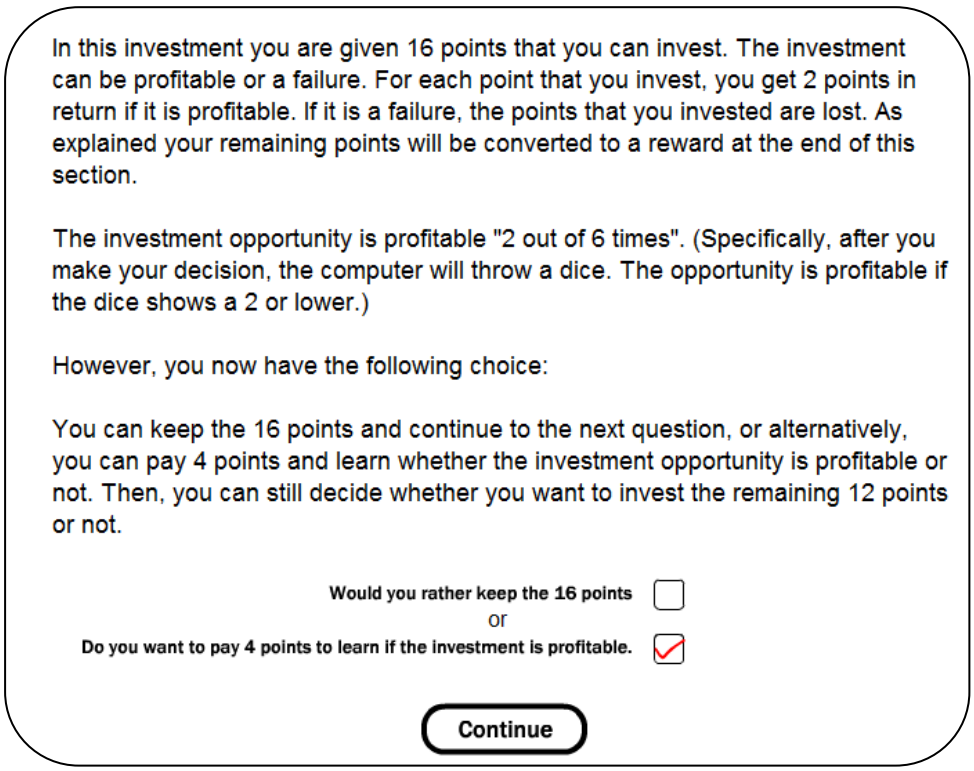


Figure 7.1 – Example task screenshot

471. Stylised tasks involving points and fixed probabilities were chosen in order to rule-out factors such as framing effects, cognitive limitations and aversion to uncertainty that were explored in Experiment 1. The first two tasks were designed to test subjects' willingness to pay for information about risky choices, and whether or not their willingness-to-pay conforms to "standard preferences" or exhibits bias. The third task was designed to measure each subject's appetite for investing in similar risky prospects, in the absence of information or advice, to be used as a control for analysing their choices in other tasks. The final two tasks were designed to test whether subjects were aware of and respond appropriately to potential conflicts of interest due to advisor incentives, and whether disclosure or "health warnings" influence subjects' decision-making. Each of the five tasks is described in turn below. Where relevant, we also describe how the predictions of "standard" economic theory differ from predictions that account for common behavioural biases.

Tasks 1 and 2: Willingness to Pay for Information

472. As noted above, in order to ensure - in real-life financial transactions - that there is no conflict of interest, retail investors may have to pay directly for advice. In comparison to the practice where they pay only indirectly (through commissions) if a transaction occurs, this requires that they pay for advice regardless of whether or not they then purchase a particular security. It is sometimes argued that in such circumstances retail investors may react by "excessively" shying away from advice. In order to shed some light on this, we analyse in Tasks 1 and 2 subjects' willingness to pay up-front to receive information. To abstract from beliefs about the credibility and quality of an advisor's recommendation and communication, we abstract from the role of advice in Tasks 1 and 2: subjects receive information about the success or failure of an investment opportunity directly, although only when they (choose to) pay for it. Through Tasks 1 and 2 we want to learn whether and to what extent the fact that subjects have to pay up-front for information has a notable (or "excessive") impact on their willingness to pay and, thus, on their decision to obtain information and invest.

473. Subjects received a fixed number of points (in Task 1, a_1 = 16 points) and they could pay a given amount to learn whether or not the investment (profitable on one in three occasions, r_1 = 1/3) was profitable. When they did not pay for information, they simply kept their fixed number of points. This specification ensured that there was a precise "reference point" for each task: namely, the number of points that they were ensured of obtaining without any "action". When subjects paid to obtain information, this led to an immediate reduction in their points. If they then learned that the investment opportunity was unprofitable, this implied that they had incurred a certain loss. For subjects with "standard preferences", the realisation of a loss or a gain, compared to some reference point, should not matter by itself. All that should count is the final outcome of the respective task. However, when subjects also evaluate the task outcome with respect to a reference point (which we take to be the fixed amount that they receive without an action) and when "losses loom larger than gains", subjects may be particularly reluctant to pay up-front.

474. By choosing the parameters for Task 2 as a function of subjects' response to Task 1, we determine whether or not subjects' choices conform to "standard preferences". In what follows, we only describe the key logic and implications of our setting. Details are

provided in a formal appendix (Appendix D). In the online experiment, subjects are routed in a dynamic way through two consecutive tasks so that we can test the following hypothesis: if subjects are risk neutral or risk-averse and have "standard preferences", then they should be willing to pay for information in both tasks or not willing to pay for information in either task. Instead, a "mixed" response would not conform to such preferences, indicating instead the potential for "narrow framing" together with "loss aversion". In a nutshell, the procedure for this test is as follows. When we change the parameters of the investment-cum-advice opportunity in the second task, e.g., by making it more risky, we scale the parameters in such a way that subjects with "standard" preferences should provide the same response ("pay" or "not pay") as they provided in the first task. Instead, subjects who are excessively averse, in the described way, to the up-front "loss" of paying for advice will react too strongly to parameter choices where the up-front fee is strongly increased.

Task 3: Risk Appetite and Willingness to Pay to Invest

475. The third task offered subjects a similar choice to Tasks 1 and 2, but this time with no opportunity to pay for information about the outcome of the investment opportunity. Rather, subjects could choose to keep their allocated points (a_3 = 16 points) or to pay a "fee" of 1 point for the chance to invest. If the subject chose to pay the fee they could then choose how many of their remaining points they wished to invest. As in Task 1, the investment was successful on one in three occasions (r_3 = 1/3) and points were doubled if the investment was successful or lost if the investment was a failure. Subjects' choices in Task 3 were used in the analysis of Tasks 4 and 5 to control for heterogeneity in subjects' appetite for risk and their willingness to pay up-front for the opportunity to participate in a risky decision, in the absence of any further information or advice.

Task 4: Cheap Talk in Advised Investment Decisions

476. In the fourth task subjects again faced the same initial allocation of points (a_4 = 16 points) and an investment opportunity with the same probability of success as the previous task (r_4 = 1/3) and the same payoff structure. However, in contrast to Task 3 where the choice was made without any information about the success or failure of the investment opportunity and a 1 point fee was paid to invest, in Task 4 the subject could choose whether or not to pay 1 point to receive information from an advisor (in the

"Pay-for-Advice" treatment) or received advice from an advisor for free (in the "Free Advice" treatment). After receiving the advice (only if the subject chose to pay for advice in the "Pay-for-Advice" treatment) the subject then had to choose how much of their available points allocation to invest, based upon the advice they had received.

477. Because of the practical constraints of providing "advice" to 6,000 online subjects, the advice was generated in a prior step, using a small number of (PhD Economics) student subjects at University College London.[165] Ten student advisors were provided with the same task details as the online subjects and told that they would have to give advice that would be used to advise 6,000 subjects in an online study across multiple European countries. In each case they were shown the outcome of the investment opportunity and could choose to respond either "Invest" or "Don't Invest". The advisors were also told that they would be paid according to the choices made by the online subjects. Advisors were asked to give advice for three different forms of incentive for each task, one of which was randomly selected afterwards to determine how their payoff would be calculated:

Fixed: the advisor received a flat fee for providing advice.

Proportional: the incentive was proportional to the total amount invested

Only-if-Invested: the incentive was proportional to the number of investors

In the "Fixed" condition, nine out of ten advisors responded "Invest" when the investment was successful (a dice roll of 1 or 2) and nine out of ten advisors responded "Don't invest" when the investment was unsuccessful (a dice roll of 3 or more). In the "Proportional" and "Only-if-Invested" conditions, nine out of ten advisors also responded "Invest" when the investment was successful but just four out of ten advisors responded "Don't invest" when the investment was unsuccessful. Hence, the advisors in the latter two conditions were biased by their incentives to attempt to deceive the online subjects.

[165] It was necessary to generate real advice, as deception is strictly prohibited in experimental economics for a number of reasons. In particular, subjects may respond differently and strategically if they suspect that the information they receive is not genuine but has been invented by the experimenter for a particular purpose. Suspicious subjects may behave differently to credulous subjects. Furthermore, subject credulity is a "public good" in that deception in one experiment can "pollute" the subject pool with suspicion, potentially causing problems for future experiments.

478. The online subjects were told that the advice had been given by a competent advisor after seeing the outcome of the investment. The incentives of their advisor were also disclosed in one of five different (randomly-assigned) disclosure treatments:

> *Fixed*: "The advisor was only paid a fixed participation fee."
>
> *Proportional*: "The advisor will be paid proportional to what you invest."
>
> *Proportional + Mild Warning*: "The advisor will be paid proportional to what you invest. Notice that this means that the advisor did not necessarily have your own investment earnings in mind when he gave his advice."
>
> *Proportional + Strong Warning*: "The advisor will be paid proportional to what you invest. **Notice that this means that the advisor did not necessarily have your own investment earnings in mind when he gave his advice.**"
>
> *Only-if-Invested*: "The advisor will receive a payment only when you choose to invest. He receives nothing when you choose not to invest."

The advice provided was randomly drawn from the advice generated by the student advisors in the appropriate group. In the "Pay-for-Advice" treatment the subject chose between keeping the 16 points or paying 1 point for the advice, then deciding how many points to invest. In the "Free Advice" treatment the subject was shown the advice and then decided how many points to invest. There were ten treatment groups in total (2 payment treatments x 5 disclosure treatments) with about 600 subjects in each group (about 75 subjects per country).

479. Task 4 is a "cheap talk" setting because the advisors cannot credibly communicate their private information about the investment outcome. They can simply recommend "Invest" or "Don't Invest" and face no penalty for deceiving advisees. Because the "advice" is an unsubstantiated claim rational advisees should therefore be wary of the advice they receive, especially if a potential conflict of interest has been disclosed to them. This "wariness" could be expressed in two different ways in Task 4: wary advisees should be less willing to pay for advice when a conflict of interest has been disclosed (in the "Pay-for-Advice" treatment); and wary advisees should also invest fewer (or no) points when advised to "Invest" by a biased advisor (in the "Free Advice"

treatment, and subjects who choose to pay for advice in the "Pay-for-Advice" treatment).

Task 5: Strategic Disclosure in Advised Investment Decisions

480. In the fifth and final task subjects again faced the same initial allocation of points (a_5 = 16 points) and an investment opportunity in which any invested points would be doubled if the investment was successful and lost if the investment was a failure. This time, the probability of success was determined by the roll of two dice: the investment was successful only if both dice showed a four or less (r_5 = 4/9). As in Task 4, the subject could choose whether or not to pay 1 point to receive information from an advisor (in the "Pay-for-Advice" treatment) or received advice from an advisor for free (in the "Free Advice" treatment). Also as in Task 4, the advisor's incentives were disclosed in one of five different ways ("Fixed"; "Proportional"; "Proportional + Mild Warning"; "Proportional + Strong Warning"; or "Only-if-Invested"), giving the same ten treatment groups in total. Subjects were assigned to the same treatment group for both Tasks 4 and 5.

481. The advice was again generated in an earlier step using the same student advisors as Task 4 in the same three incentive groups ("Fixed", "Proportional" or "Only-if-Invested"). This time, however, the advisor had to (truthfully) reveal the outcome of exactly one of the two dice. Hence they could no longer choose to lie, but could still act strategically in their choice of which die to reveal. When both dice were "good" (showed four or less) or both dice were "bad" (showed five or six) then the advice task is trivial. When one die was good and one was bad then a benevolent advisor should choose to reveal the bad dice to the advisee, as a warning not to invest. A biased advisor could choose to reveal the good dice, thus encouraging the advisee to invest (and earning a higher incentive as a result). In the "Fixed" group, eight out of ten advisors chose to reveal the "bad" die when one die was bad and one die was good. In the "Proportional" and "Only-if-Invested" groups, all advisors chose to reveal the "good" die when one die was bad and one die was good. Hence, the advisors in the latter two groups were biased by their incentives to attempt to deceive the online subjects through strategic disclosure.

482. For a wary advisee, this would pose the following problem. A "bad" die would mean that the investment opportunity is clearly unsuccessful. A good die revealed by a benevolent advisor would mean that the investment opportunity is clearly successful. A "good" die revealed by an advisor with biased incentives would likely mean that the advisor has hidden a "bad" die. Thus a wary advisee who thinks that an advisor is biased by their incentives should not invest if they are risk-averse.[166] Advisees who do not anticipate or do not see through such strategic behaviour should, instead, have less-pessimistic beliefs. Hence "wariness" could be expressed in two different ways in Task 5: wary advisees should be less willing to pay for advice when a conflict of interest has been disclosed (in the "Pay-for-Advice" treatment); and wary advisees should also invest fewer (or no) points when a "good" die is revealed by a biased advisor (in the "Free Advice" treatment, and subjects who choose to pay for advice in the "Pay-for-Advice" treatment).

1.4 Subject Incentives

483. Subjects were paid a standard fixed amount for completing the experiment. In order to ensure incentive-compatibility, subjects were told that they would also receive a bonus that depended upon the total number of points held at the end of each task. In all five tasks the bonus was dependent upon the subjects' investment decisions and the stochastic return of the risky investment opportunities. Thus, two subjects faced with the same investment tasks and making the same choices could receive different rewards due to the probabilistic nature of the investment returns.

484. Payment was made in the form of reward points that could later be exchanged for a financial reward. In all countries except Romania (where a different subject panel was used), subjects received points with a financial value of about €1.50 for completing the experiment. The mean bonus for Experiment 2 in these seven countries was worth approximately €1.21, with a standard deviation of €0.20. Subjects in Romania received points with a financial value of about €1.00 for completing the experiment. The mean

[166] In our analysis, we will be interested only in the differences between the choices in the various treatments e.g., between those with and those without "health warnings" or conflicts of interest. Note that a subject with "passive beliefs", who does not update his beliefs about the second, undisclosed dice, will believe that the investment is profitable 2 out of 3 times in the case when he sees one "good" dice. Instead, a subject who believes that the advisor will always behave strategically must - from Bayes' rule - believe that the investment opportunity is only profitable 1 out of 2 times when he sees one "good" dice.

bonus for Experiment 2 for Romanian subjects was worth approximately €1.31, with a standard deviation of €0.22.

2 Experiment Results

2.1 Willingness to Pay for Information

485. We first consider the results from Tasks 1 and 2, which explored whether consumers may be excessively averse to paying up-front fees for information (and advice) due to "narrow framing" and loss aversion. As a first step in the analysis, we investigated whether subjects responded rationally to the price that they had to pay for information. The probit regression[167] in Table 7.1 suggests that this is the case: subjects' willingness to pay for information (and then possibly invest) reacted negatively to the price that they had to pay - a case of "downward sloping" demand. To be precise, increasing the respective price of information from 2 points to 4 points reduced the willingness-to-pay for information by 10 percentage points. Note, also, that the coefficients for both risk appetite and the (subsequently observed) investment behaviour in Task 3 are both significantly positive.[168]

[167] From a technical perspective, the regressions come with the following caveat: we have included regressors that are themselves endogenous, such as the investment in Task 3. However, results for our main variables of interest (treatments) are robust to excluding those regressors that are obviously endogenous and also to different regression methods (e.g., by clustering standard errors).

[168] "Self-rated risk appetite" asked subjects the following: "How do you see yourself: Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?" Higher values (on a scale from 0 to 10) indicated higher willingness to take risks. To self-rate their ability in finance on a scale from zero ("much worse than average") to four ("much better than average"), subjects were asked the following: "How would you rate your financial knowledge and expertise compared to the average person in your country?" Subjects responded to "Self-rated maths ability" on a scale from 0 ("completely helpless") to 10 ("completely on top"). The "Trust index" is a composite measure of subjects' general trust, which was obtained from their reported willingness to trust and rely on people. Finally, for country dummies, the reference country was the UK, for which we performed the first pilot study. For details of the other controls please refer to the experiment protocol in the appendices.

N	6003
Pseudo R-squared	.0536

Variable	**Coeff.**	***t***	**Prob>|*t*|**
Advice fee = 3 points	-.0606	-3.76	<0.01
Advice fee = 4 points	-.102	-6.37	<0.01
Invested in Task 3	.217	16.81	<0.01
Age (years)	.000539	0.18	
Age squared	.0000186	0.55	
Gender (M=0, F=1)	.0226	1.66	
Age left education (years)	-.00270	-1.20	
Self-rated risk appetite	.0149	4.68	<0.01
Trust index	.00197	0.47	
Self-rated maths ability	-.00540	-1.60	
Self-rated finance ability	-.00944	-1.13	
Financial asset holding	-.000785	-0.17	
Work experience in finance	.0117	0.54	
Money quiz result	.00656	1.89	<0.1
Germany	.0998	4.00	<0.01
Poland	.0440	1.66	<0.1
France	.113	4.60	<0.01
Italy	.0302	1.16	
Czech Republic	.122	5.03	<0.01
Romania	.101	3.86	<0.01
Sweden	.0542	2.09	<0.05

Table 7.1 – Pay for Information (Task 1; marginal effects relative to Fee = 2 points)

486. In line with the theoretical basis that we derived in Section 1.3 (and more formally in Appendix D), we are now interested in how subjects' choices varied between Tasks 1 and 2. Table 7.2 provides the respective percentages of subjects who paid for advice in either Task 1 or Task 2. Among all subjects, as shown in Panel I, almost half paid for advice in both tasks. This is an indication of a high willingness to take risks and to "try

out interesting options" among subjects. The fraction of "off-diagonal" subjects, who paid for advice in one task but not in the other, is in total almost 30 percent.

487. Note that the fraction of these "off-diagonal" subjects does not significantly change when we consider only the subjects who took more than the median time[169] for the whole online session (Panel II). This suggests that this pattern is not determined simply by random variations in behaviour as subjects clicked through choices. Panels III and IV show, as might be expected, that subjects who were more risk-loving were more likely to pay in both tasks than not to pay in either task. However, the fraction of "off-diagonal" subjects is only marginally affected.

[169] Subjects took an average of 1350 seconds, or about 22 minutes, to complete the entire study. The median completion time was 1162 seconds or about 19 minutes. Variation in time across subjects is substantial and approximately log-normally distributed. A number of high outliers suggests that some subjects did not complete the experiment in one go. Subjects used more time to complete the comparatively complex Tasks 4 and 5 in Experiment 2, with a median of 29 and 31 seconds respectively, than to complete tasks 1 through 3.

The time to complete the whole session varied substantially across countries. At the upper end, Czech, Polish and Swedish subjects took a median of about 21.7 minutes to complete, while subjects from the other participating countries took a median of about 18.3 minutes.

Time is potentially related to the outcomes of the experiment in two opposite ways. First, subjects who took more time may have taken greater care in completing the tasks. Second, high values of time may be related to lower cognitive abilities. In total, while there is a small positive correlation, we find that time spent on the whole session is not much related to overall performance.

Panel I: All Subjects

		Task 2: Paid for Advice?	
		No	*Yes*
Task 1: Paid for Advice?	*No*	24.79 %	17.02 %
	Yes	12.36 %	45.83 %

Panel II: Only subjects with above-median completion time

		Task 2: Paid for Advice?	
		No	*Yes*
Task 1: Paid for Advice?	*No*	22.20 %	17.67 %
	Yes	12.03 %	48.10 %

Panel III: Only subjects who did not invest in Task 3

		Task 2: Paid for Advice?	
		No	*Yes*
Task 1: Paid for Advice?	*No*	38.20 %	16.19 %
	Yes	11.23 %	34.38 %

Panel IV: Only subjects with above-median risk aversion

		Task 2: Paid for Advice?	
		No	*Yes*
Task 1: Paid for Advice?	*No*	29.35 %	17.91 %
	Yes	10.57 %	32.18 %

Table 7.2 – Pay for Information (Tasks 1 and 2)

488. Taken together, these findings suggest that a substantial fraction – nearly one third - of subjects exhibited behaviour that seems more consistent with preferences based on a "reference point" than "standard" preferences. In other words, they may have considered the decision in isolation, and hence judged the up-front fee for information relative to the reference point of retaining the allocated points. This has the consequence that they were particularly (and excessively) reluctant to pay up-front for information (or advice), as this fee would represent a sure loss.

489. We also analysed the data to see which subjects were more or less likely to conform to the different preference models. Table D1 in Appendix D presents a probit regression of which individual characteristics are more likely to be associated with subjects that are consistent in their choices across the two tasks, i.e. subjects that exhibit standard preferences. Among the different regressors, only gender and subjects' decision whether to invest in Task 3 are significant at a more-than-10-percent level. Other personal factors, education for instance, are not significant (note we have here the full sample with 6003 observations).

2.2 Advised Investment Decisions: "Cheap Talk"

Willingness to Pay for Advice

490. We next consider the results of Task 4, which explored whether or not consumers were wary of possible conflicts of interest caused by advisor incentives, in a "cheap talk" scenario where advisors can give misleading investment advice through unsubstantiated claims about private information. We are interested in subjects' willingness to pay for advice and the degree to which they follow that advice in the presence of conflicts of interest, as well as the impact of different types of disclosure such as "health warnings". Our hypothesis is that the willingness to obtain advice should strictly decrease with a conflict of interest, given that this undermines the value of advice, and that this effect would be more pronounced when a "warning" is present.

491. The first observation is that the overall willingness to pay to obtain advice is very high (70 percent of subjects). This is an expression of subjects' general tendency in such studies to take risks, and is consistent with the high levels of risk taking observed in Tasks 1 and 2 above. We are, however, interested mainly in the differences between

treatments. Figure 7.2 shows the observed mean proportion of subjects who chose to pay for advice in each of the treatment groups.

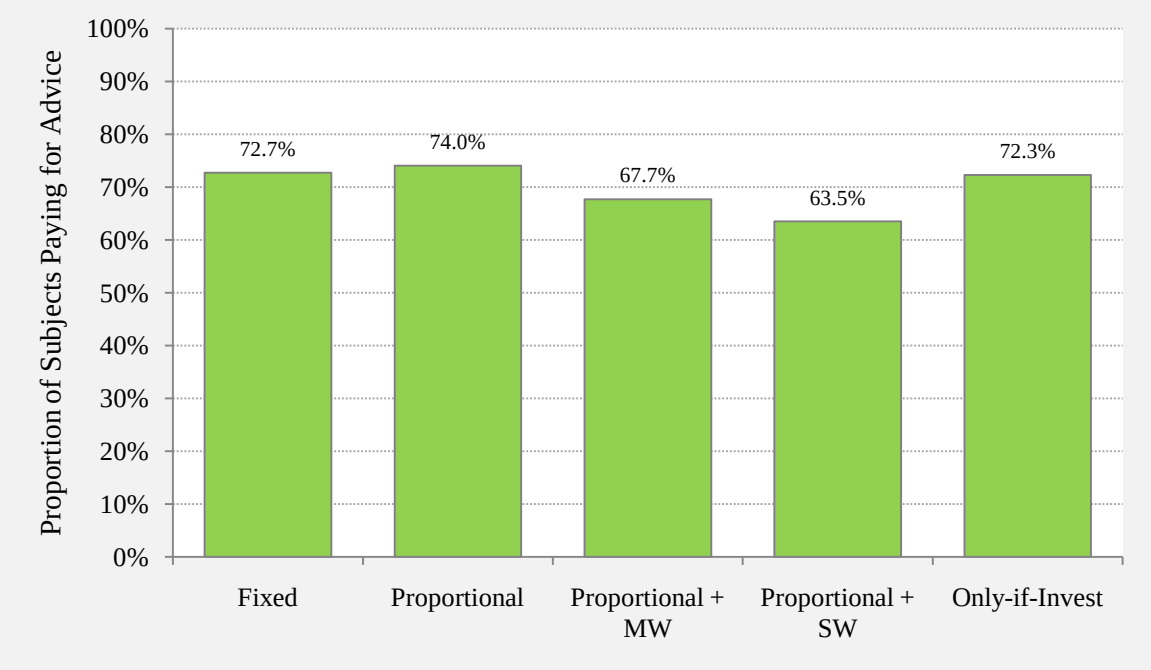


Figure 7.2 – Pay for advice (Task 4)

492. The differences between groups shown in Figure 7.2 are small and it is unclear whether those differences are significant or due to random variations. Hence, we use probit estimations of the binary decision to purchase advice on treatments and control variables.[170] To facilitate the interpretation of coefficients, we generally present marginal effects, which can be interpreted as a change in probability. Table 7.3 and Tables D2 and D3 in Appendix D present the results. Table 7.3 reports the marginal effects of the various "conflict of interest" treatments compared to the baseline treatment where the advisor was on a fixed compensation scheme. Recall that the advisors' incentives were disclosed to the advisee subjects. When subjects were not given a "health warning", there was no significant reduction in their willingness to pay for advice. This holds both for the "Proportional" treatment and for the "Only-if-Invested" treatment. Recall that in the first treatment, the advisor was paid in proportion

[170] Error terms within country groups might be correlated and/or not identically distributed. Our baseline results always ignore this for simplicity. In Appendix D, we present, however, comparable regression results with country-cluster-robust standard errors (Tables D4-D6). As expected, standard errors increase slightly, which affects the significance of marginally significant variables. It does not, however, affect our main conclusions.

to what the online subjects invested; in the second treatment, online subjects knew that advisors obtained compensation only when they invested. We see, however, a clear reduction in subjects' willingness to pay for advice in the presence of both a conflict of interest and a "health warning." When compared to the baseline of "fixed compensation" however, the effect was strongly significant only when the health warning was "strong", i.e. written in a bold red font. Then, it reduced the likelihood that subjects would pay one point to obtain advice by 8.4 percentage points (based on an average of 57 percent of subjects paying for advice).

493. Table D2 in the appendices presents a similar analysis in which we have grouped together all "Proportional" treatments and compared them to the other two treatments. This co-efficient has a small negative effect with a low significance, which is intuitive, as it "averages" over the treatments without a health warning and those with a strong or weak warning. In Table D3 (also in the appendices) we have lumped together all "conflict of interest" (or "commission") treatments, compared to the treatment with a "fixed compensation" for the advisor, but this has no significant effect. In total, the analysis reveals that, over all subjects, it was only the "health warning" that generated a sizable and significant effect. We next investigate this in more detail.

N	2965
Pseudo R-squared	.0948

Variable	**Coeff.**	***t***	**Prob>|*t*|**
Proportional	.0138	0.50	
Proportional + Mild Warning	-.0513	-1.79	<0.1
Proportional + Strong Warning	-.0843	-2.92	<0.01
Only-if-Invested	.00805	0.29	
Invested in Task 3	.235	13.68	<0.01
Age (years)	.000935	0.24	
Age squared	-.0000313	-0.70	
Gender (M=0, F=1)	.000324	0.02	
Age left education (years)	.00491	1.67	<0.1
Self-rated risk appetite	.00706	1.69	<0.1
Trust index	.00352	0.64	
Self-rated maths ability	.00988	2.24	<0.05
Self-rated finance ability	-.0328	-3.01	<0.01
Financial asset holding	.00552	0.90	
Work experience in finance	-.0451	-1.49	
Money quiz result	.0348	7.63	<0.01
Germany	.00349	0.10	
Poland	-.119	-2.94	<0.01
France	-.0178	-0.49	
Italy	-.0569	-1.50	
Czech Republic	.0284	0.81	
Romania	-.0477	-1.21	
Sweden	-.0697	-1.79	<0.1

Table 7.3 – Pay for Advice (Task 4; marginal effects relative to "fixed compensation")

494. Table 7.4 reports probit regressions comparing just the three "Proportional" treatments to each other, to determine how a weak and a strong "health warning" work. It is important to note that through these pair-wise comparisons, we see more clearly the direct effects of "health warnings". This analysis reveals that - using the "Proportional"

treatment without such a warning as a baseline - even the "mild warning" (in standard font size) had a highly significant effect, though the effect of a "strong warning" was twice as large, reducing participation by 10 percentage points. (Note that to save space, in Tables 7.4 and 7.5 we omit a statement of country dummies and of age coefficients, which are, however, included in the regression.)

N	1780
Pseudo R-squared	.0924

N	1187
Pseudo R-squared	.0979

	No Warning vs. Warning			Mild vs. Strong Warning		
Variable	**Coeff.**	***t***	**Prob>|*t*|**	**Coeff.**	***t***	**Prob>|*t*|**
Proportional + MW	-.0688	-2.37	<0.05			
Proportional + SW	-.100	-3.51	<0.01	-.0321	-1.13	
Invested in Task 3	.250	11.12	<0.01	.276	9.84	<0.01
Gender (M=0, F=1)	-.0238	-1.01		-.0107	-0.36	
Age left education (years)	.00418	1.08		.00381	0.72	
Self-rated risk appetite	.00350	0.64		.00261	0.39	
Trust index	.00265	0.37		.00382	0.42	
Self-rated maths ability	.0171	2.93	<0.01	.0233	3.21	<0.01
Self-rated finance ability	-.0232	-1.62		-.0158	-0.89	
Financial asset holding	-.00198	-0.24		-.00326	-0.31	
Work experience in finance	-.0560	-1.42		-.0110	-2.17	<0.05
Money quiz result	.0300	5.00	<0.01	.0311	4.13	<0.01

Table 7.4 – Pay for Advice (Task 4; marginal effects in pair-wise comparisons)

495. Finally, in Table 7.5, we report the results of repeating the regression in Table 7.1, but splitting subjects into two subsamples, depending upon the time subjects took to complete the whole online session.[171] These regressions show that a "warning" had a significant effect only on subjects who took above the median time. Effects were higher and more significant for subjects who took more time, but, again, only when a "health warning" was provided. There is no significance across treatments for subjects who spent less than the median time. In sum, regardless of the speed with which subjects

[171] It should be noted that completion time is endogenous to this study.

completed the session, merely revealing a conflict of interest, as in the "Proportional" or the "Only-if-Invested" treatment, had no effect. Instead, a "health warning" is necessary, but even this is sufficient only when subjects take enough time to read and respond to a warning.

N	1488
Pseudo R-squared	.1150

N	1477
Pseudo R-squared	.0819

	Below-median time			**Above-median time**		
Variable	**Coeff.**	***t***	**Prob>|*t*|**	**Coeff.**	***t***	**Prob>|*t*|**
Proportional	.0313	0.76		.00653	0.18	
Proportional + MW	-.00102	-0.02		-.0872	-2.23	<0.05
Proportional + SW	-.0594	-1.36		-.100	-2.63	<0.01
Only-if-Invested	.0204	0.50		.0120	0.34	
Invested in Task 3	.268	10.79	<0.01	.190	7.93	<0.01
Gender (M=0, F=1)	-.00143	-0.05		-.0153	-0.65	
Age left education (years)	.00850	1.89	<0.1	.00218	0.57	
Self-rated risk appetite	.0155	2.41	<0.05	.00184	0.34	
Trust index	-.00751	-0.87		.0150	2.17	<0.05
Self-rated maths ability	.00337	0.50		.0131	2.29	<0.05
Self-rated finance ability	-.0607	-3.71	<0.01	-.00323	-0.22	
Financial asset holding	.0151	1.70	<0.1	-.00317	-0.37	
Work experience in finance	-.0359	-0.81		-.0482	-1.18	
Money quiz result	.0387	6.27	<0.01	.00971	1.24	

Table 7.5 – Pay for Advice (Task 4; marginal effects split by completion time)

496. The preceding observation is also important in light of different possible interpretations of our results on the impact of "health warnings". One interpretation could be that revealing only that advisors were paid depending on investment choices mattered little to advisee subjects, as they presumed that these incentives were low and that advisors would therefore prefer to tell the truth, regardless of the impact that this would have on

their monetary payoff.[172] If that were the case it could be argued that when a "health warning" explicitly stated that there was a conflict of interest, subjects may simply have updated their beliefs about the stakes of the advisor. Our preferred interpretation is, instead, that subjects did not properly think through the implications of a particular remuneration scheme for the reliability of the advisor's advice. We think that the way completion time interacts with the significance of "health warnings" supports this interpretation.

497. So far, we have restricted the discussion to the effect of our different incentive treatments and have not discussed the various controls for subject heterogeneity. This reflects our primary interest in the difference between treatments, rather than in level effects. That is, we are not interested in the subjects' overall willingness to participate in risky decisions. Over the various regressions, however, there are some observations that are sufficiently interesting and consistent to merit a brief discussion.

498. First, the sign of the coefficient for "self-rated risk appetite" and its significance is generally "right": the more risk-loving a subject was, the more willing he was to participate in the subsequent risky decision. Recall that when subjects did not pay one point, they could not "gamble" and simply kept all the allocated points. Furthermore, the coefficient for "Invested in Task 3" is generally highly significant. Recall that this captures whether subjects were also willing to pay a point to participate without obtaining advice (Task 3). This shows that there was consistency in the subjects' behaviour. Finally, subjects who rated themselves higher in terms of their maths ability had a greater tendency to go for the risky decision, presumably as they felt more confident about calculating probabilities. Based on these observations, the failure to find significance for treatments without a "health warning" should not be interpreted merely in terms of random variations in the behaviour of online subjects.

Investment Following Receipt of Advice

499. In Task 4, half of all subjects received free advice (in the "Free Advice" treatment). For these subjects, we analyse how much they invested after various recommendations. In

[172] As advisors and advisees do not interact directly, disclosing the precise mechanism through which lab advisors would be paid may have been too complicated for online advisees.

the appendices we report the results of analyses in which we combine their data with the investment data from subjects who chose to pay for advice (in the "Pay-for-Advice" treatment). We are, first and foremost, interested in how the investment following a recommendation to "invest" changed with treatments for the "Free Advice" subjects. We first provide some descriptive statistics. Table 7.6 shows the mean and median number of points invested by subjects for the various treatments and the two types of recommendation. Figure 7.3 shows the observed means graphically, as well as the amount invested by subjects in Task 3 as a comparison.

500. The first key thing to observe is that subjects reacted considerably to different recommendations. The median investment was always between 8 and 10 points when they received a recommendation to invest, while the median investment after a recommendation *not* to invest was never above 2 points. As a further comparison, in Task 3 (in which subjects did not obtain any information or advice) those subjects who participated in the lottery invested, on average, 6.78 points (standard deviation is 4.13) while the median is 5 points. As is intuitive, investment without advice lay in the middle between the investments following recommendations to invest or not invest. However, Table 7.6 already suggests that the effect of the different treatments was small or even insignificant, in particular, when there is no "health warning".

	Advice Given: Invest			**Advice Given: Don't Invest**		
Disclosure Condition	**Mean**	**Median**	**Standard Deviation**	**Mean**	**Median**	**Standard Deviation**
Fixed	8.97	9	4.72	3.39	2	4.59
Proportional	9.38	10	4.54	3.46	2	4.42
Proportional + MW	8.82	9	4.77	3.74	2	4.25
Proportional + SW	8.42	8	4.40	3.86	2	4.35
Only-if-Invested	9.12	10	4.68	2.98	0	4.20

Table 7.6 – Amount invested split by treatment (Task 4; Free Advice)

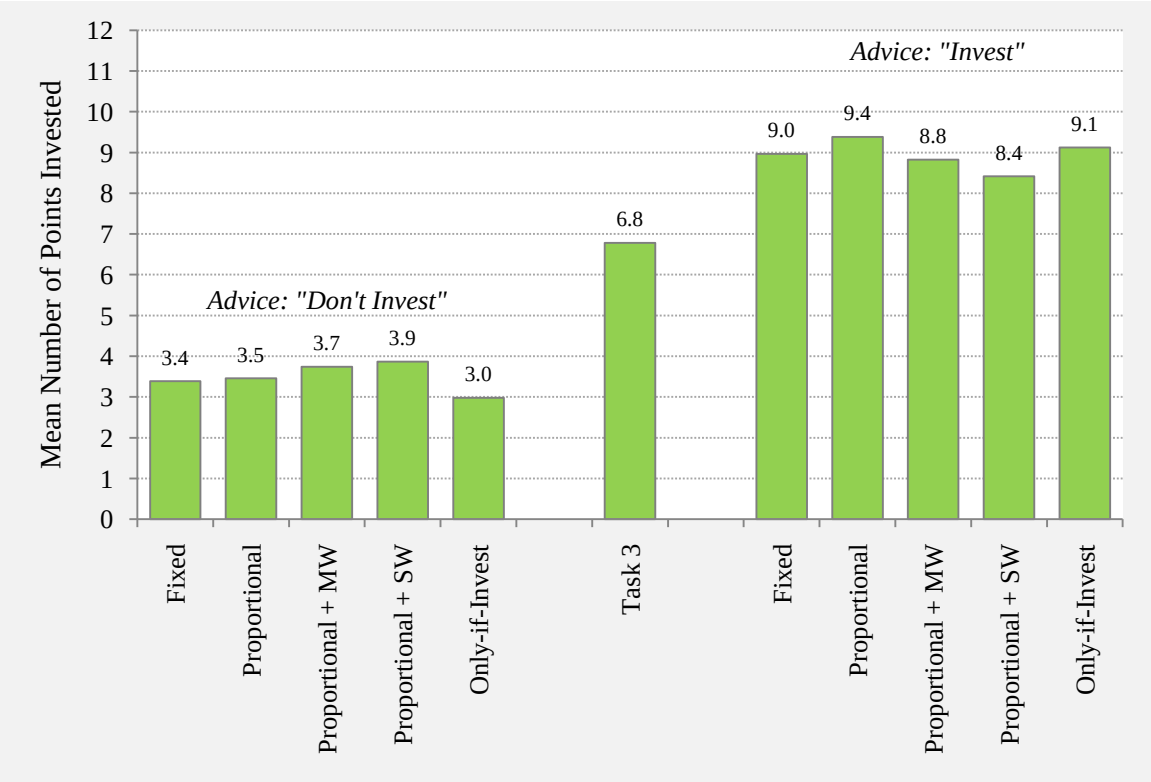


Figure 7.3 – Amount invested after free advice (Task 4)

501. The analysis in Table 7.7 is analogous to the one that we performed for the decision to pay for advice in Table 7.3 (as previously, we only report the full set of controls including country dummies for this first set of tables). Similarly, Tables D7 and D8 in the appendices are analogous to Tables D2 and D3. However, for the continuous investment decision, we now find no significance for any treatment when compared to the baseline of "fixed compensation". Note, however, that the coefficients for "Self-rated risk appetite" and "Invested in Task 3" are again strong and highly significant, as should be expected. As before, the insignificance of treatment effects should thus not be considered to be merely a result of random variations in subjects' behaviour (and hence in the data).

N	1868
Pseudo R-squared	.083

Variable	**Coeff.**	***t***	**Prob>|*t*|**
Proportional	0.573	1.56	
Proportional + Mild Warning	-0.0165	-0.04	
Proportional + Strong Warning	-0.556	-1.52	
Only-if-Invested	0.205	0.56	
Invested in Task 3	.544	2.57	<0.05
Age (years)	.164	3.52	<0.01
Age squared	-.00162	-2.99	<0.01
Gender (M=0, F=1)	-.495	-2.27	<0.05
Age left education (years)	-.0163	-0.46	
Self-rated risk appetite	0.230	4.58	<0.01
Trust index	.0792	1.20	
Self-rated maths ability	.0937	1.75	<0.1
Self-rated finance ability	.0377	0.28	
Financial asset holding	.118	1.58	
Work experience in finance	-.443	-1.27	
Money quiz result	.117	2.18	<0.05
Germany	-.562	-1.31	
Poland	1.554	3.56	<0.01
France	.139	0.33	
Italy	.0135	0.03	
Czech Republic	1.099	2.64	<0.01
Romania	.613	1.36	
Sweden	-.0849	-0.20	

Table 7.7 – Amount invested after free advice "Invest" (Task 4; marginal effects)

502. We next compare the effect of a "health warning" on the different "Proportional" treatments. Table 7.8 shows that "health warnings" again had a significant effect. In the case of a strong warning, this was a highly significant and strong effect. To be precise, in comparison to the "Proportional" treatment without any such warning, adding a

strong warning reduced the amount invested by 1.2 points on average. Note, however, that is based on an average of around 9 points invested when recommended to invest, so this is still a relatively small reduction.

N	1208
Pseudo R-squared	.112

N	798
Pseudo R-squared	.121

	No Warning vs. Warning			**Mild vs. Strong Warning**		
Variable	**Coeff.**	***t***	**Prob>|*t*|**	**Coeff.**	***t***	**Prob>|*t*|**
Proportional + MW	-.598	-1.91	<0.1			
Proportional + SW	-1.193	-3.92	<0.01	-.683	-2.18	<0.05
Invested in Task 3	.521	2.01	<0.05	1.066	3.35	<0.01
Gender (M=0, F=1)	-.616	-2.33	<0.05	-1.030	-3.15	<0.01
Age left education (years)	-.000352	-0.01		.0251	0.46	
Self-rated risk appetite	.240	3.91	<0.01	.182	2.43	<0.05
Trust index	.175	2.17	<0.05	.112	1.12	
Self-rated maths ability	.0708	1.10		.102	1.32	
Self-rated finance ability	.0549	0.33		.127	0.64	
Financial asset holding	.182	2.03	<0.05	.206	1.92	<0.1
Work experience in finance	-.190	-0.47		-.306	-0.61	
Money quiz result	.0601	0.91		.0201	0.25	

Table 7.8 – Amount invested after free advice "Invest" (Task 4; pair-wise comparisons)

503. We obtain slightly stronger effects both for a "health warning" among the "proportional" treatments and in comparison to the "fixed compensation" treatment when we regress the difference between what subjects invested after receiving advice to do so and the amount invested in Task 3, in which they had no advice. We report the outcome in the appendices (Tables D9-D11). What we find there is that, compared to the "fixed compensation" treatment, now at least the treatment with a "strong health warning" had a significant negative effect. We also obtain slightly stronger effects when we draw on all observations with investment, including those where subjects paid for advice (which has an additional, positive effect on investment). This is also reported in

the appendices (Tables D13-D15).[173] There is no significant effect of any of the disclosure treatments when subjects received the advice "Don't Invest" (see appendix Tables D16-D18).

504. As in the previous analysis of subjects' willingness to pay for advice, we also consider in how the treatment effects depend on the speed with which subjects completed the study. Table 7.9 confirms our previous insights: for subjects who took less than the median completion time, none of the treatments (compared to the "fixed compensation" treatment) had a significant effect. However, for those who took more than the median completion time, the treatment with a "strong health warning" becomes significant. It is again noteworthy that this effect becomes even stronger when we consider not the absolute number of points invested, but the difference compared to investment without advice in Task 3 (again see the results reported in Table D12 in the appendices).

[173] Note that for this regression, we simply lump together all observations. Though the respective regression includes a dummy to capture whether subjects paid for advice or received it for free, this does not further control for the two-stage decision process in one of the treatments.

N	930
Pseudo R-squared	.088

N	938
Pseudo R-squared	.107

	Below-median time			Above-median time		
Variable	**Coeff.**	***t***	**Prob>|*t*|**	**Coeff.**	***t***	**Prob>|*t*|**
Proportional	.885	1.59		.244	0.50	
Proportional + MW	.506	0.91		-.626	-1.24	
Proportional + SW	.0120	0.02		-1.164	-2.38	<0.05
Only-if-Invested	.693	1.26		-.378	-0.78	
Invested in Task 3	-.199	-0.64		1.364	4.66	<0.01
Gender (M=0, F=1)	-.536	-1.68	<0.1	-.571	-1.91	<0.1
Age left education (years)	.0202	0.38		-.0455	-0.96	
Self-rated risk appetite	.221	2.88	<0.01	.244	3.66	<0.01
Trust index	.103	1.06		.0421	0.46	
Self-rated maths ability	.0322	0.41		.184	2.47	<0.05
Self-rated finance ability	.178	0.90		-.115	-0.63	
Financial asset holding	.274	2.58	<0.01	-.0734	-0.70	
Work experience in finance	-.719	-1.41		-.338	-0.70	
Money quiz result	.122	1.78	<0.1	.0698	0.70	

Table 7.9 – Amount invested after free advice "Invest" (Task 4; split by time)

505. Finally, it is informative to report the difference in average investments that were made in the different treatments, depending on whether the recommendation was to invest or not to invest (recall that this comparison is across different subjects, as each subject always stayed in the same treatment). This difference is equal to 5.58 points for the baseline treatment with "fixed compensation". The difference is strictly lower in both treatments with "health warnings" and "proportional compensation": it is equal to 5.08 points with a "mild warning" and equal to 4.55 points with a "strong warning". This makes sense as subjects should react less strongly to the recommendations of a biased advisor. However, the difference is actually larger in the "Proportional" treatment without a warning, where it is 5.99 points, and also in the "Only-if-Invested" treatment, where it is 6.14 points. Below, we come back to this surprising observation, which suggests that some subjects may have misinterpreted the disclosed conflict of interest.

Further Observations

506. One of our control variables captures subjects' trust. The self-reported level of trust is "general" in that it is not in relation to any specific social setting - e.g. trust in advice - or with respect to any particular person. The academic literature has shown that a strong relationship exists between such "generalized trust" and many other attributes and choices ("revealed preferences"), most notably people's willingness to hold risky assets. We originally expected that trust would have a significant effect on subjects' willingness to invest or to pay for advice in treatments where advice was possibly biased. However, in almost all regressions, trust was not a significant determinant of these decisions. This finding also holds when we adopt a slightly more elaborate procedure and take residuals after filtering out different risk attitudes, given that there is a high correlation between trust and risk attitude. Informed by extant research, we also examined whether the different treatments had a different effect depending on whether subjects were more or less trusting. For instance, it could have been conjectured that those with low trust would react more strongly to "health warnings". However, we obtain conflicting results when we consider the binary decision of whether or not to pay for advice in comparison to the decision of how much to invest following advice. These results are reported in Appendix D (Tables D19 and D20).

507. A priori, we would expect better-educated subjects to display a greater understanding of the incentive conditions of advisors. To address this, we split our sample between subjects with above- and below-median education.[174] Table 7.10 presents a probit estimation of the decision to pay for advice on treatments and control variables for both groups. Surprisingly, high-educated and low-educated subjects reacted very similarly to treatments when confronted with the decision to pay for advice. Both groups reacted significantly only to the strong warning. Educated subjects did not appear to understand their advisors' incentive conflict any better than less-educated subjects.

[174] The median age at which subjects stopped their full-time education was 21 years, though a number of observations may be censored as subjects were younger. Further, education was not evenly distributed across countries in the sample. A split by education, therefore, results in an unbalanced representation of countries in both groups.

N	1605
Pseudo R-squared	.103

N	1360
Pseudo R-squared	.0927

	Education: Low			Education: High		
Variable	**Coeff.**	***t***	**Prob>|*t*|**	**Coeff.**	***t***	**Prob>|*t*|**
Proportional	.0304	0.83		-.00335	-0.08	
Proportional + MW	-.0470	-1.19		-.0587	-1.38	
Proportional + SW	-.0787	-2.00	<0.05	-.0905	-2.10	
Only-if-Invested	.0214	0.59		-.0112	-0.27	
Invested in Task 3	0.229	9.66	<0.01	.244	9.65	<0.01
Gender (M=0, F=1)	.0140	0.57		-.0102	-0.39	
Age left education (years)	-	-		-	-	
Self-rated risk appetite	.00601	1.04		.00878	1.44	
Trust index	.00947	1.24		-.00325	-0.41	
Self-rated maths ability	.0165	2.67	<0.01	.00337	0.53	
Self-rated finance ability	-.0533	-3.56		-.00714	-0.45	
Financial asset holding	.0135	1.54		-.00153	-0.18	
Work experience in finance	-.0582	-1.29		-.0406	-0.98	
Money quiz result	.0380	6.21	<0.01	.0304	4.41	<0.01

Table 7.10 – Paid for advice (Task 4; marginal effects split by education)

508. When we apply the education split to our analysis of the amount invested after receiving a recommendation to invest, the results are puzzling. Better-educated subjects tended to invest more when their advisor was paid proportionally, although these effects are not statistically significant (see Table 7.11). In contrast, subjects with below-median education invested significantly less when confronted with a strong warning. We also obtain a positive effect of the "Proportional" treatment without a health warning compared to the baseline treatment of "fixed compensation" when we consider subjects with above-median trust. A regression only within the "Proportional" treatments shows that "health warnings" were significant for the better-educated subjects as well as the less-educated subjects. With the subjects split not according to education but according to performance in Experiment 1, we obtain broadly the same results (see Tables D21 and D22 in the appendices). Taking these results together, we conjecture that some

subjects may have misinterpreted the revealed compensation of the advisor, believing that a proportional compensation scheme, depending on the amount invested, was actually a sign of better-aligned incentives. This belief was, however, changed with a "health warning", and this was effective for well-educated as well as less-educated subjects.

N	1023
Pseudo R-squared	.090

N	845
Pseudo R-squared	.103

	Education: Low			Education: High		
Variable	**Coeff.**	***t***	**Prob>|*t*|**	**Coeff.**	***t***	**Prob>|*t*|**
Proportional	.339	0.65		.831	1.59	
Proportional + MW	-.364	-0.70		.365	0.68	
Proportional + SW	-1.215	2.34	<0.05	.194	0.37	
Only-if-Invested	-.166	-0.32		.702	1.35	
Invested in Task 3	.526	1.79	<0.1	.496	1.62	
Gender (M=0, F=1)	-.193	-0.64		-.781	-2.43	<0.05
Age left education (years)	-	-		-	-	
Self-rated risk appetite	.277	4.19	<0.01	.186	2.39	<0.05
Trust index	.113	1.25		.0207	0.21	
Self-rated maths ability	.0773	1.03		.112	1.46	
Self-rated finance ability	.0808	0.45		-.0586	-0.29	
Financial asset holding	-.0455	-0.45		.269	2.46	<0.05
Work experience in finance	-.812	-1.62		-.0549	-0.11	
Money quiz result	0.228	3.09	<0.01	-.0206	-0.26	

Table 7.11 – Amount invested after free advice "Invest"(Task 4; split by education)

509. Finally, we have also looked into the effect of age. In particular, in one analysis, we split subjects into four age quartiles. For each quartile, we then performed our standard regressions. Generally, the results are inconclusive. When we performed a regression on the likelihood to pay for advice, we obtained significant treatment effects only for the lowest quartile (up to age 27) and the highest quartile (54 and above), but not for the two intermediate quartiles. While this could prima facie suggest that older and younger subjects in this experiment were more wary of incentive conflicts, this may be a

premature conclusion. In particular, slicing the data by age may lead also to unbalanced subgroups in terms of, for instance, nationality or education.

510. Overall, while disclosing incentives with a strong "health warning" has a significant impact on subjects' willingness to pay for potentially-biased advice and their tendency to follow that advice, we find no evidence that investor wariness or the impact of health warnings is greater in any particular sub-group of the population. In the following section we examine whether these conclusions hold when we move from a "cheap talk" setting (Task 4) to a more complex "strategic disclosure" setting (Task 5). The key difference we find is that the significance of the results is generally much lower or even absent, even when considering the impact of "health warnings". This holds even for the treatment where subjects had to choose whether or not to pay for advice, which we report first.

2.3 Advised Investment Decisions: "Strategic Disclosure"

Willingness to Pay for Advice

511. In Table 7.12 we repeat the same probit analysis as previously shown in Table 7.3, except this time for subjects' willingness to pay for advice in Task 5. Similarly, Tables D23 and D24 in the appendix repeat the analyses in Tables D2 and D3. We see in Table 7.12 that only the difference between the baseline "fixed compensation" treatment and the treatment with a "strong health warning" is significant, albeit only weakly. Also, the size of the effect is much more subdued, compared to the analysis of the "cheap talk" setting of advice. Here, restricting the analysis to subjects who spent more than the median completion time on the session does not help. In fact, even in a pair-wise comparison, we then lose all significant effects, as we thereby reduce the sample size by half. Figure 7.4 shows the observed mean proportion of subjects choosing to pay for advice in each treatment group.

N	2958
Pseudo R-squared	.0974

Variable	**Coeff.**	***t***	**Prob>|*t*|**
Proportional	-.0174	-0.62	
Proportional + Mild Warning	-.0315	-1.11	
Proportional + Strong Warning	-.0491	-1.73	<0.1
Only-if-Invested	-.0106	-0.38	
Invested in Task 3	.235	13.53	<0.01
Age (years)	-.00536	-1.38	
Age squared	.0000255	0.57	
Gender (M=0, F=1)	.000380	0.02	
Age left education (years)	.00485	1.65	<0.1
Self-rated risk appetite	.00623	1.48	
Trust index	.00163	0.30	
Self-rated maths ability	.00343	0.76	
Self-rated finance ability	-.0261	-2.37	<0.05
Financial asset holding	-.00316	-0.51	
Work experience in finance	.00352	0.12	
Money quiz result	.0297	6.46	<0.01
Germany	-.0301	-0.82	
Poland	-.112	-2.78	<0.01
France	.0350	1.03	
Italy	-.0173	-0.48	
Czech Republic	-.00172	-0.05	
Romania	-.0321	-0.82	
Sweden	-.0218	-0.59	

Table 7.12 – Pay for Advice (Task 5; marginal effects relative to "fixed compensation")

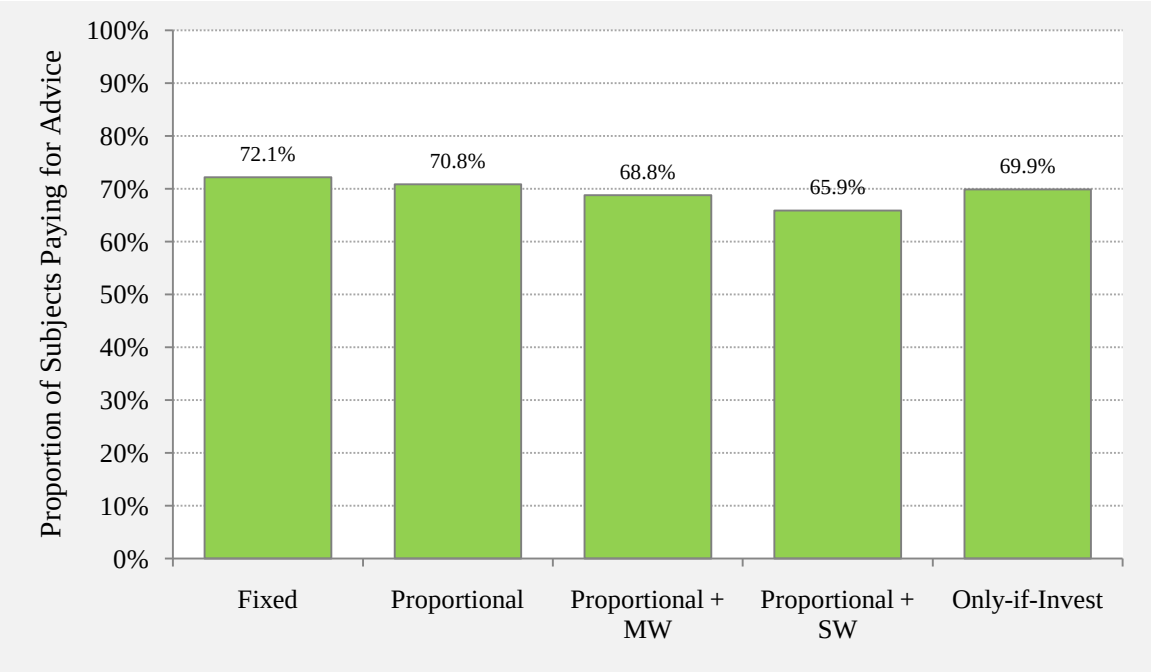


Figure 7.4 – Pay for advice (Task 5)

Investment Following Receipt of Advice

512. We turn now to the decision of how much to invest following the disclosure of either "good" or "bad" information. Recall that a disclosed die showing four or less is considered "good" information.[175] Table 7.13 shows the mean and median number of points invested by subjects for the various treatments and the two types of recommendation. Figure 7.5 shows the observed means graphically. A first inspection reveals that although subjects invested many more points on average when a "good" die was revealed than when a "bad" die was revealed, they did not react at all, or even reacted in a perverse way, to a revealed conflict of interest due to their advisor's incentives.

[175] Actually, when a "bad" die is revealed, any rational subject should invest exactly zero, as the investment opportunity is definitely unsuccessful. While subjects reacted strongly to the disclosure of "good" or "bad" information, it is surprising that even the median amount invested after "bad" information was 2 points.

	Die 4 or Below (Good)			Die 5 or 6 (Bad)		
Disclosure Condition	**Mean**	**Median**	**Standard Deviation**	**Mean**	**Median**	**Standard Deviation**
Fixed	7.28	6	4.83	3.86	2	4.97
Proportional	7.37	8	4.64	4.18	2	5.06
Proportional + MW	7.42	7	4.76	4.12	2	5.02
Proportional + SW	7.53	8	5.01	4.40	3	4.98
Only-if-Invested	7.56	8	4.90	3.85	2	4.78

Table 7.13 – Amount invested split by treatment (Task 5; Free Advice)

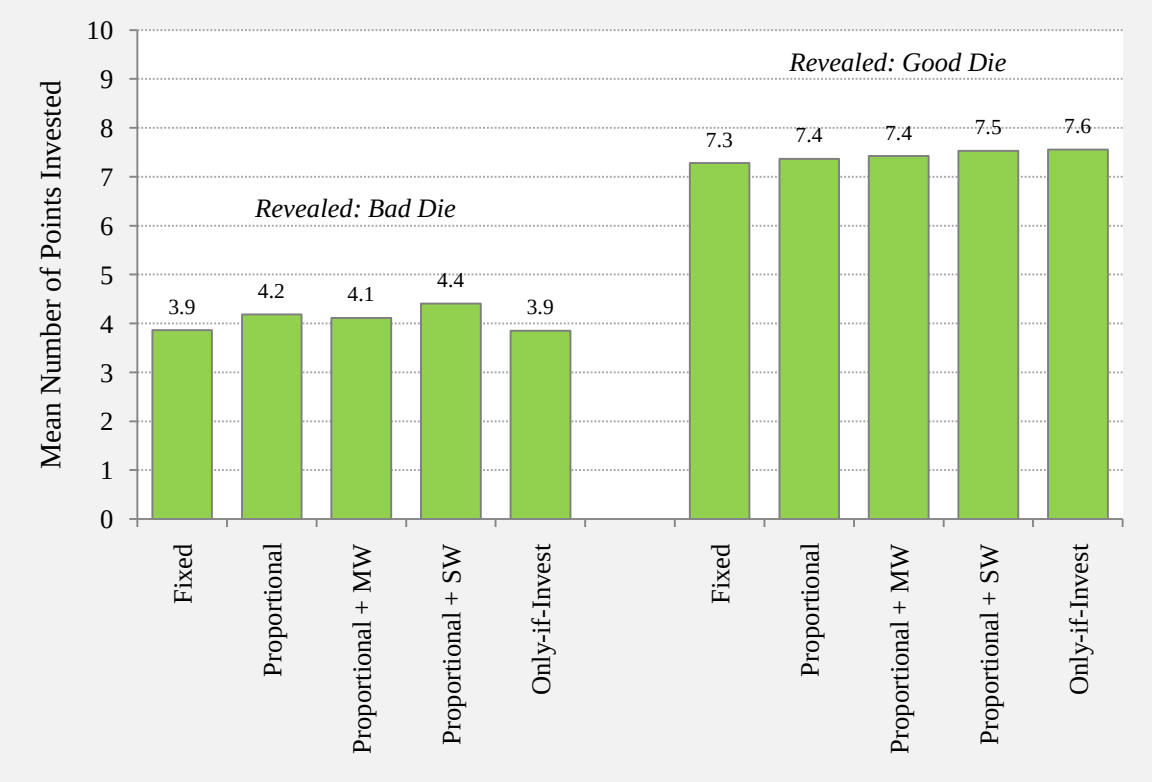


Figure 7.5 – Amount invested after free advice (Task 5)

513. Running the same regressions for Task 5 as we did for Task 4, on the amount invested after receiving the advice to invest, shows that indeed no treatment effect was significant (Appendix D Tables D25-D27). To stress this result, note that the insignificance of treatment variables remains even when we consider only the subjects who spent more than the median time on the whole session (Appendix D Tables D28-

D30). We obtain similar results when we regress on the difference between the amount invested in Tasks 5 and 3 (Appendix D Tables D31-D33). While we do not report this result separately, when we consider only the "Proportional" treatments, neither the "strong warning" nor the "mild warning" is significant in Task 5.[176] As noted above, we want to stress that results are far from being random. Recall, first, the large difference in average amount invested depending on what die was revealed. In addition, the effects of perceived maths ability and self-rated risk attitude, for instance, all have the expected sign and are significant.

514. Overall, the picture that emerges from the analysis of Task 5 is that while subjects behaved in a way that suggests that most, at least broadly, understood the task at hand, they fully failed to understand the implications of the disclosed conflict of interest with the advisor. In fact, they seemed not to anticipate that a biased advisor might strategically choose which information to disclose and which not to disclose to subjects. Even "health warnings" did little to change this.

3 Conclusions

3.1 Impact of Disclosing Advisor Incentives

515. We found that without an explicit "warning", many subjects typically *failed* to see through a conflict of interest when reacting to advice, and to perceive the poor quality of that advice. Subjects who were told that their advisor receives "fixed compensation" did not react differently to subjects who were told either that their advisor is paid only if they invest or that he is paid more if they invest more. However, subjects started to react more to conflicts of interest that were clearly revealed by a "health warning" that read as follows*: "Note that this means that the advisor did not necessarily have your own investment earnings in mind when he gave his advice."* Then, when facing a conflict of interest, subjects were substantially *less* willing to pay for advice or to follow a recommendation to invest. Furthermore, the effect was much more pronounced when the "health warning" was presented in a bold red font.

[176] On the other hand, this should not suggest that coefficients are never significant, irrespective of how we slice the data. In fact, one result stands out, in particular. When we consider only subjects who are particularly "trusting," then, among the "proportional" treatments, both a "mild warning" and a "strong warning" have large and highly significant effects (splitting by time or education generates no significant results). Presently, we have not further investigated these findings.

516. At least for the analysed choice problems in our experimental context, based on a large number of observations, we can conclude that explicit "health warnings" are necessary to make consumers responsive to disclosed conflicts of interest. Otherwise, they tend to ignore them. In fact, we even document a tendency to misinterpret some statements that are meant to disclose the conflict of interest but are not flagged explicitly as "health warnings". In particular, it seems that some subjects interpreted the statement that the advisor "will be paid proportionally to what you invest" as an indication of aligned rather than misaligned incentives. In that case, the effect of an explicit "health warning" was particularly stark.

517. How subjects react to the advisor's disclosed incentives depended also on how much time they took to complete the full online session (i.e., including Experiment 1 and the survey questions). When they took longer and, thus, presumably answered the questions more carefully, the effect of "health warnings" was stronger. In other words, subjects who seemingly rushed through the decision problems may have taken little time even to read and digest the "health warnings". However, for those who spent more time, "health warnings" seemed to work well - and we found the warnings necessary, as even these subjects seemed not to understand, without such warnings, what the disclosed conflict of interest implied for the quality of advice they obtained. The impact of the amount of time taken on the decision suggests that policy interventions that encourage investors to take longer over a decision, such as an enforced cooling-off period, may increase the effectiveness of incentive disclosure (but these would have to be tested to confirm or reject this idea).

518. Thus, in Experiment 2, sufficiently strong "health warnings" were necessary to make conflicts of interest salient for subjects who responded to advice. But they were not sufficient when the underlying conflict of interest was less transparent, as we show by comparing treatments with different strategies of possible deception. When the advisor privately observed whether an investment was profitable and then made a recommendation, a strong "health warning" significantly raised subjects' awareness of a conflict of interest. However, when the advisor could strategically disclose good information but hide bad information, then even a strong "health warning" had a much more subdued effect on subjects' choices. When they were shown "good" information subjects tended not to be aware that a biased advisor is much more likely to hide "bad

information" at the same time. In our experiment, therefore, "health warnings" seemed to be insufficient in more-sophisticated but equally realistic situations of influence and deception.

519. While health warnings affected how subjects reacted to advice, it is not clear whether they reacted as a result of a better understanding of the disclosed conflicts of interest or whether their reaction was triggered more-or-less mechanically by the wording of the warning. This difference may be of importance in some contexts, in particular when there is a risk that a standardised health warning might "crowd out" unbiased advice and undermine trust. Also, it should be noted that in this particular experimental context the precise (quantitative) incentive structure of advisors was not revealed, to avoid additional complexities. This level of disclosure could make a difference, in particular when the respective sums are larger than what advisees would expect. To study this, an experimental context where incentive expectations are also elicited from advisees would provide further guidance.

520. Finally, based on numerous regressions and partitioning the data along various dimensions such as education, age, perceived maths ability, trust in others, etc. we find that the significance and size of treatment effects can vary substantially among the various subgroups. For instance, more-educated subjects seemed not to react more strongly to a disclosed conflict of interest or a "health warning". In fact, they sometimes seemed to be even more likely than less-educated subjects to have misinterpreted the fact that the advisor is paid proportionately to the subject's investment.

3.2 Willingness to Pay for Information and Advice

521. As part of our analysis of advice, we determined the willingness of subjects to pay for potentially-biased advice. As we noted above, a disclosed conflict of interest indeed reduces the likelihood that subjects will pay for advice, though significantly so only when the advice comes with a clear "health warning". With real-world financial transactions, biased advice may arise from the fact that advisors are paid or are paid more only when a transaction is made, or they may earn more when a particular transaction is made. One policy option could then be to steer the industry towards a standard by which advice is paid for directly (e.g., through an hourly fee) instead of indirectly through commissions. We do not consider the general implications that this

may have. In Experiment 2, we were instead interested in addressing only the particular question of subjects' willingness to pay up-front for advice.

522. It is sometimes observed that retail customers may be "excessively" averse to upfront payments. They see the upfront payment as an immediate incurred "loss" as the payment has to be made regardless of whether they subsequently choose to purchase, say, a particular security. We found in Experiment 2 that, depending upon treatments, 26 to 30 percent of subjects showed behaviour that is consistent with such "loss aversion" around the reference point of "no action". The size of this fraction was robust to the various ways in which we analysed the data. In particular, it was not affected by the time subjects took to complete the whole session, which suggests that these observations were due not only to a lack of attention by the more-hurried subjects. However, we did not find subject characteristics, such as education, that would consistently and significantly explain when subjects behaved according to these "non-standard" preferences and thereby showed a particular aversion to pay upfront for information. Whilst we did not find a similar aversion to up-front payments in Experiment 1, there the "up-front" fees were actually incurred at the same time as "annual" fees, reducing the likelihood that the up-front fees would be perceived differently. In contrast, in Experiment 2 the fee payment and investment decision were separated into two stages, more closely reflecting the real-world decision.

3.3 External Validity, Limitations and Further Research Questions

523. As previously described in relation to Experiment 1, in an experiment such as this actual monetary incentives are low and subjects do not spend vast amounts of time on their hypothetical decisions and so one should not over-interpret the absolute magnitude of any effects ("level effects") that are found. However, in the comparison of different treatments experiment- or subject-pool-specific idiosyncrasies cancel out, which generally lends such treatment comparisons higher degrees of external validity. Given this observation, then our (negative) results with regards to subjects' response to biased incentives and "health warnings" are the most reliable findings of Experiment 2 and the most likely to have external validity. If subjects are unable to react appropriately to disclosed incentives in the simple and stylised tasks of this experiment, then it is difficult to imagine that the complexity of real-world investment decisions is going to make this any more likely.

524. There were two aspects of the experiment, however, that would lead one to apply some caution in extrapolating from these findings. First, the advice was not received "live" from an advisor, so subjects may have had difficulty believing that the advice came from a real source – despite our efforts to ensure that this was so – and hence may not have inferred a conflict of interest from the disclosed incentives. Second, the fact that in some cases subjects appeared to put more trust in biased advice means we cannot exclude the possibility that the phrasing used in the experiment may have been misinterpreted by those subjects (although this would not explain why the health warnings also had little or no impact). It may be that alternative and clearer disclosure leads to a different outcome. Both of these aspects were further tested in Experiment 3. Overall though, the naïvety of consumers with respect to disclosed conflicts of interest is a finding that we would expect to be valid in real investment situations, and is consistent with the findings of, for example, our earlier survey research.

525. The findings with regards to subjects' aversion to up-front fees should be contextualised to assess their external validity. First, the test for "non-standard preferences" was a within-subject comparison (Task 1 vs. Task 2) rather than a comparison between different treatment groups. This makes it harder to distinguish between a genuine effect and random variation in subjects' behaviour across the two tasks. Second, the theoretical basis for the test was based on an assumption of general risk aversion, yet subjects seemed (surprisingly) likely to choose to pay a fee and "gamble" some of their pay-off. One possible explanation is that this reflected a desire to choose the more "interesting" option in the experiment. Nonetheless, as observed earlier, the fact that subjects' behaviour in these tasks was sensible – paying less often for more expensive advice; being more likely to invest if less averse to risk; and varying investment decisions in response to advice and information – means it would be difficult to argue that the observed pattern of choices was purely driven by random choice behaviour. On the other hand, we would recommend further research and trials (at the least) before drawing any firm conclusions about the degree to which consumers may be averse to paying up-front fees for advice.

526. A number of other lines of further research are suggested by the findings of Experiment 2. The first is to trial alternative ways to disclose advisors' incentives and make consumers aware of potential conflicts of interest, for example in an oral disclosure by

the advisor or by calculating the actual commission payment amount and including it in the "fees and costs" section of a product disclosure document. A second line of enquiry would be to explore the impact of incentive disclosure upon advisor behaviour (for example, does this create "moral license" for the advisor to act in their own self-interest?). Thirdly, if conflicts of interest cannot be mitigated by empowering consumers, further research could investigate whether or not advisors can be induced to act in their clients best interest despite misaligned financial incentives, perhaps through the use of professional codes of conduct or by mandating advisors to provide written justification for their advice.

527. As before, we draw out some initial policy implications of Experiment 2 in the final chapter of this report. Before that, we describe the third and final experiment in which some of the social factors operating in advised RIS purchase decisions were investigated in a laboratory setting.

PART 2: EXPERIMENTS

CHAPTER VIII

EXPERIMENT 3: SOCIAL AND BEHAVIOURAL FACTORS IN ADVISED INVESTMENT DECISIONS

Retail Investment Services: Experiment 3 – Social and Behavioural Factors in Advised Investment Decisions[177]

1 Introduction: Objectives and Study Design

1.1 Objectives

528. The results of the previous two experiments shed light on some key aspects of consumer decision-making with regard to retail investment choices. Experiment 1 showed how cognitive limitations and behavioural biases such as aversion to uncertainty lead people to make sub-optimal investment decisions, but also that they can be helped somewhat through policy interventions that simplify and standardise choice descriptions. Experiment 2 showed that people typically fail to respond appropriately to the disclosure of conflicts of interest created by advisor incentives, exhibiting naïve trust in advice unless accompanied by a strongly-worded "health warning". Both of these experiments focus on consumers' cognitive abilities, either to make financial calculations or to reason about the motives of advisors. However, given that (as our earlier survey showed) the majority of retail investment purchases in EU Member States rely on the help of an advisor or salesperson in a face-to-face environment, it is likely that social factors typical of the advisor-advisee interaction also play an important role in consumers' retail investment decisions.

529. Our review of the Behavioural Economics literature showed that face-to-face advice situations have not yet been extensively researched, especially within the field of experimental economics. Without a body of previous experimental work to draw upon, we have opted to concentrate on understanding the impact of one of the most fundamental aspects of face-to-face interactions: free communication between advisor and advisee. The presence of free communication defines one of the key differences between advised and non-advised sales (in which information is still passed from RIS providers to consumers, e.g. through marketing material and product literature, but in a fixed format). From a policy perspective it is important to understand whether non-advised sales through remote channels require different regulation and supervision to

[177] Primary author(s) of this chapter: Steffen Huck and Roman Inderst

advised sales, and to assess the size and direction of any influence of free communication upon the quality of retail investment decisions.

530. The objectives of Experiment 3 were therefore twofold. Firstly: to determine the impact of free communication (between advisors and advisees) upon the quality of investment decision-making. Secondly: to validate some of the findings of the previous web-based studies (Experiments 1 and 2) in a more-controlled laboratory setting. In particular, we chose to focus on the previous findings regarding consumers' apparent naïvety with regard to potential conflicts of interest caused by advisor incentives, and to explore whether consumers are likely to be more or less trusting in a direct interaction where an advisor is free to (attempt to) persuade or influence the advisee. Furthermore, we wanted to corroborate and extend the previous findings regarding aversion to uncertainty and product complexity, to see how such biases are affected by the interaction between advisor and advisee in a face-to-face situation.

531. In Experiment 3 we deliberately abstract away from other aspects of face-to-face advice situations and concentrate upon the impact of free communication. This strategy was adopted for two reasons. First, moving from a non-advised remote setting to an advised interpersonal setting introduces a multitude of potential new factors into the consumer's decision-making process, such as perceived qualities of the advisor (age, physical attractiveness, experience, personality, etc.) or the possibility of "pressure selling", coercion and a variety of influence strategies. Effective policy-making requires the ability to separate these factors and understand their separate and cumulative impacts. It is insufficient to know that consumers behave differently in a face-to-face advised setting than in a non-advised RIS purchase decision without knowing which specific factors cause any observed differences. Second, it would be extremely difficult to entirely recreate a truly realistic advice situation in the laboratory. For example, the experiment was conducted using untrained subjects to play the roles of advisor as well as advisee, for reasons of cost and practicality. Also advisor and advisee subjects were drawn from a common pool, meaning subjects might bring preconceptions and beliefs about the other party into the experiment or might behave differently because of the possibility of meeting the other party again at a later point in time, hence it was important to maintain anonymity within the experiment to prevent reputational concerns from influencing subjects' behaviour. Therefore Experiment 3 should not be seen as a

complete and exhaustive analysis of all the possible social factors at play in an advised investment decision, but rather a specific and targeted look at one (very important) part of a broader whole.

1.2 Sampling Strategy and Data Collection

532. The experiment was conducted in three different EU Member States: the Czech Republic (Prague),[178] Germany (Cologne)[179] and the UK (London).[180] In total 484 subjects participated in Experiment 3 and the sample was split evenly across the three countries. All experimental treatments were repeated in all three countries to ensure that differences between countries were not confounded with the treatments. Within each country, subjects were randomly assigned to a treatment group, and also randomly assigned to the role of advisor or advisee. The subjects in Experiment 3 were drawn from a convenience sample of undergraduate and graduate students, as is typical of many experimental economics laboratory studies. Specifically, subjects were recruited from lists of students who had previously expressed an interest in participating in experimental studies, using e-mail advertisements. Subjects received an appropriate financial incentive for participating in the experiment. To ensure incentive-compatibility subjects also received additional incentives dependent upon the outcome of each task, as described in more detail in Section 1.5 below. The laboratory sessions took place in the three countries from 28th September 2010 to 9th October 2010.

533. The experiment was programmed and conducted with the software z-Tree (Fischbacher, 2007)[181], using version 3.3.6 of the software. The experiment was conducted in English

---

[178] We would like to thank Peter Katuscak and Fabio Michelucci of CERGE-EI (Center for Economic Research and Graduate Education, Charles University and the Economics Institute of the Academy of Sciences of the Czech Republic) in Prague for conducting some of the experiment sessions on which this study is based. We would also like to thank the Laboratory of Experimental Economics at the University of Economics in Prague and its director Miroslav Zajicek for hosting the experiment.

[179] We would like to thank Bernard Richter (Goethe-Universität Frankfurt), Johannes Wahlig (Universität zu Köln) and Christian Wittneben (Universität zu Köln) for conducting some of the experiment sessions on which this study is based. We would also like to thank the Kölner Laboratorium für Wirtschaftsforschung (Cologne Laboratory for Economic Research) and its director Axel Ockenfels for hosting the experiment.

[180] We would like to thank Brian Wallace (University College London) for his help in coding and piloting this experiment, as well as running some of the experiment sessions on which this study is based, at the ELSE laboratory in the Department of Economics, University College London.

[181] Urs Fischbacher (2007): z-Tree: Zurich Toolbox for Ready-made Economic Experiments, *Experimental Economics* 10(2), 171-178.

in London and Prague, and in German in Cologne. The experiment was designed and tested by researchers who are fluently bilingual in German and English, so any necessary translation was carried out during the writing of the experiment protocol. Parts of the survey were adapted from Experiments 1 and 2, so the previous translations were used where possible to ensure consistency. Subjects were recruited as native- or fluent-speakers of the relevant language, and were told in advance that fluent conversational language skills were a requirement for taking part in the experiment. The local currency of each country (Pounds, Euros or Koruna) was used in the experiment to ensure the tasks were realistic and familiar, but in all other aspects the experiment was identical in the three countries.

534. The experiment took place in purpose-built economics laboratories and was completed on personal computers using the keyboard and mouse to input responses. Subjects were randomly assigned the role of advisee or advisor upon starting the experiment (with half the subjects taking on each role) and remained in the same role throughout the duration of the experiment. The seating arrangement was shuffled so that subjects did not know who in the room was playing each role. Advisees and advisors were randomly paired and randomly re-matched for each task, in order to maintain anonymity and to prevent strategic behaviour due to repeated interactions (e.g. attempting to build a reputation for trustworthy behaviour). Subjects were also instructed not to reveal their name or any other identifying information to their partner (when free communication between subjects was possible). All instructions were presented on-screen and all relevant information remained available on the screen during each task. The exact content of the screen varied between tasks and treatment groups, but typically comprised four sections: detailed task instructions and information; details of the subject's financial incentives; details of their partner's financial incentives; and a task response box where subjects indicated their choices in each task. When free communication was allowed, a "chat window" was also present, as described in more detail in the following section. An example task screen shot is shown below in Figure 8.1.

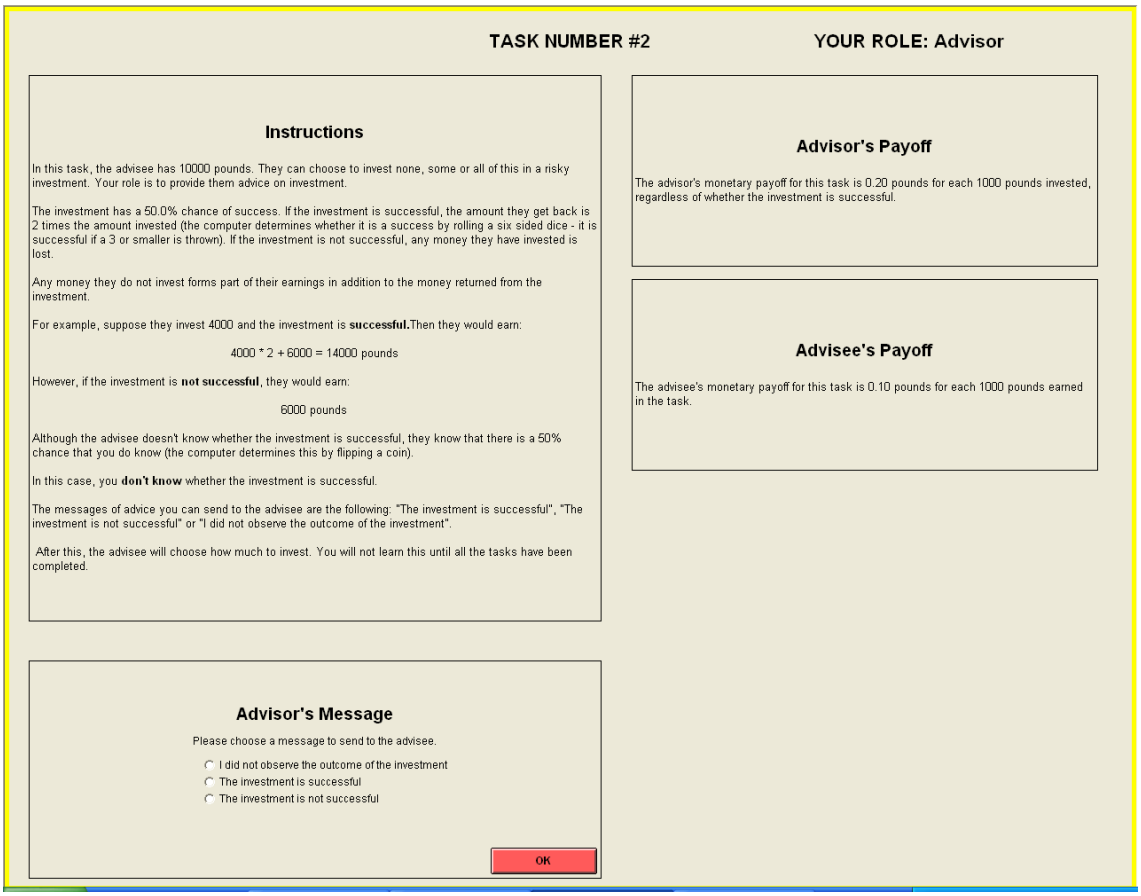


Figure 8.1 – Example screen shot (advisor subject)

1.3 Treatment Groups

535. Subjects were divided into four treatment groups in order to test the primary issues of (i) the impact of advisor-advisee communication upon advised investment decisions and (ii) how advisor-advisee communication influences consumers' ability to respond appropriately to disclosed conflicts of interest. The treatment groups were defined by the structure of advisor incentives (flat or biased) and the type of communication permitted between advisor and advisee (fixed or free), with all four combinations tested (flat-fixed; biased-fixed; flat-free; biased-free). This design allows us to separately test the impact of advisor incentives and of communication, as well as any interaction between the two effects.

536. In the "flat incentive" treatment groups, advisors received a fixed incentive for providing advice to the advisee in each of the advised investment tasks. The advisor received the same amount regardless of the decision taken by the advisee. Hence the advisor had no financial incentive to try to persuade the advisee to act in a particular

way, but it was assumed that most advisors would choose to be benevolent and try to act in the best interest of the advisee (i.e. helping them to make the choice with the highest expected pay-off). In the "biased incentive" treatment groups, advisors received a higher pay-off when the advisee acted in a particular way, for example if the advisee invested more money or if the advisee invested in product A rather than product B. Hence, the advisor had a financial incentive to try to persuade the advisee to act in a particular way, and sometimes this created a conflict of interest as this would be against the best interests of the advisee. The financial incentives of the advisor were always fully disclosed to the advisee so that it was completely transparent when there was a potential conflict of interest. The direction of the advisor's "bias" in each specific task in Experiment 3 is described in more depth in the following section, and the details of the incentives for both advisors and advisees are described in Section 1.5.

537. In the "fixed communication" treatment groups, advisor subjects could only communicate (send) a pre-determined message chosen from a small set of options. No further communication could take place between advisor and advisee, so there was no opportunity for the advisor to try to persuade the advisee to trust and follow their advice. In the "free communication" treatment groups, advisor subjects could follow up the pre-determined advice message with a period of free communication with the advisee. A chat window was provided that was active for three minutes, so the advisor could talk to the advisee about the advice they had provided and persuade the advisee to trust and follow their advice. The communication was two-way so that advisees could also respond and ask questions of their advisor. The content of the free communication was recorded for subsequent analysis.

538. Within all treatment groups the subjects completed the same series of tasks, described in the following section. There were also some sub-treatments associated with particular tasks that are detailed in the descriptions of each task.

1.4 Procedure and Tasks

539. Experiment 3 consisted of five investment tasks, repeated once with different parameters to give ten tasks in total completed by each advisee subject. No feedback on advisee choices and investment outcomes was provided until the end of the experiment. The first task was a non-advised investment decision, while the other four tasks all

involved receiving information and advice from an incentivised advisor (randomly re-matched after each task, as described above). The tasks were preceded by general instruction screens and followed by a short survey to collect subject characteristics. Survey measures included the socio-demographic background of each subject; self-rated numeracy; risk aversion; generalized trust; and some simple personality statement inventories. The exact procedure followed by each advisee subject varied according to which treatment group they had been randomly assigned to. Example screens showing the procedure followed by advisee and advisor subjects are included in an appendix to this report.

540. The investment amount was identical for all five tasks. Table 8.1 below shows the investment amount and currency used in each of the three countries.

Country	Currency	Investment Amount
Czech Republic	Koruna	100 000 Kč
Germany	Euros	€10 000
UK	Pounds	£10 000

Table 8.1 – Currency and investment amount by country

Block A – Lying and Deception

541. The first three tasks (adapted from Experiment 2) were risky choice tasks, in each of which the advisee had to decide how much of an initial allocation of €10,000 to invest in an investment opportunity, in increments of €1,000. Each investment opportunity had a 50% chance of success (33% chance in the second repetition) with the probabilities described in terms of the roll of a dice (to ensure subjects were crystal clear about the objective probability). In an unsuccessful outcome any invested money was lost. In a successful outcome any invested money was doubled (tripled in the second repetition). A worked example was provided in the task instructions to ensure that subjects understood precisely how the investment opportunity worked. Advisee subjects received a financial incentive dependent upon the total amount of money they had at the end of each task (including any non-invested amount retained from the initial allocation). Advisor subjects received either a fixed amount or an amount dependent upon the advisee's choice, depending upon the treatment group they were assigned to. Advisors

and advisees were both told the advisee's pay-off (e.g. "The advisee's monetary pay-off for this task is €0.10 for each €1,000 earned in the task") and the incentives of the advisor (e.g. "The advisor's monetary pay-off for this task is €0.10 for every €1,000 invested, regardless of whether the investment is successful.") where relevant.

Task A0: "Non-Advised"

542. In Task A0 the advisee chose how much of their initial allocation to retain and how much to invest, without any information other than the probability of success and the payoffs associated with unsuccessful and successful outcomes. This task measured the underlying risk preference of each advisee, in the absence of advice or sales pressure.

Task A1: "Cheap Talk"

543. In Task A1 there was a 50% chance (known to both the advisor and advisee) of the advisor observing the outcome of the investment in advance and a 50% chance that the advisor did not observe the outcome, with that probability described in terms of a fair coin toss (again, to ensure subjects understood the probabilities). In the flat incentive treatments, the advisor received a fixed reward for providing advice. In the biased incentive treatments, the advisor's reward was proportional to the amount invested by the advisee. The advice provided by the advisors was "free" as advisees did not have to pay to obtain the advice. Before making the investment decision in Task A1, the advisee was told the incentive structure of their advisor and then received communication from that advisor (who may or may not have had private information about the success or failure of the investment opportunity). In Task A1 the advisor could choose to deceive the advisee if they wish (and were told that this was permissible). The advisor could send one of the messages "the investment is successful", "the investment is not successful" or "I did not observe the outcome of the investment". When free communication was allowed, the advisor could also send any additional messages they wished via a chat window - in order to persuade or influence the advisee to invest more or less - and the advisee could respond. The advisee then chose how much to retain and how much to invest.

Task A2: "Strategic Disclosure"

544. Task A2 followed the same structure as Task A1, with one key difference.[182] In Task A2 the advisor could not directly lie about the observed outcome, but could choose whether or not to (truthfully) reveal the success or failure of the investment, if they observed it. The advisee was told either "I did not see the outcome OR I have chosen not to reveal the outcome to you" or "I have chosen to reveal the investment outcome to you. The investment is (not) profitable". If the advisor did not observe the outcome then they could only send the former message. If the advisor observed the outcome and chose to reveal it then they could not lie about the outcome. Again, in the free communication treatments the advice could be accompanied by any messages the advisor wanted to send via a chat window and the advisee could respond. The advisee then chose how much of the initial allocation to retain and how much to invest.

Block B – De-Biasing or Abusing Biases

545. Both blocks B and C presented advisees with the choice between two realistic financial products, and they had to decide how much from a fixed budget of €10,000 to allocate to each option. The entire budget had to be invested. Block B is adapted from Task 4 in Experiment 1 in which it was observed that subjects were biased toward a risky investment with an annual percentage fee (P), even when it was inferior to another risky investment with a fixed up-front and annual fee (F). Advisors were informed of this previously-observed bias in the task instructions, to re-create the case of an expert advisor who knows more about potential decision biases than his inexperienced advisees. The two investments were described as:

[182] Specifically, in Task A2 - as in Task A1 - there was a 50% chance (known to both the advisor and advisee) of the advisor observing the outcome of the investment in advance and a 50% chance that the advisor did not observe the outcome, with that probability described in terms of a fair coin toss. In the flat incentive treatments, the advisor received a fixed reward for providing advice. In the biased incentive treatments, the advisor's reward was proportional to the amount invested by the advisee. Again, the advisee was told the incentive structure of their advisor and then received communication from their advisor (who may or may not have had private information about the success or failure of the investment opportunity).

Five Year Investment 1	**Five Year Investment 2**
Annual returns linked to the Dow Jones stock index	Annual returns linked to the Dow Jones stock index
No initial set-up fee	An initial set-up fee of €Y applies
Annual management fee of X% (payable on the entire amount held at the end of the year)	Annual management fee of €Z (to be paid at the end of each year)

X	**Y**	**Z**	**E(Investment P)**	**E(Investment F)**
1	400	0	€13 716	€13 846
1	300	10	€13 716	€13 932

546. The allocation of Investment P (percentage frame) and Investment F (fixed frame) to Investments 1 and 2 was randomised. The parameters X, Y and Z (see table above) were chosen such that Investment F was the optimal choice for the advisee in both repetitions of the task. In this way the bias observed in Experiment 1 would be detrimental and lead to a worse investment decision by the advisee. Within the "biased incentive" treatment groups, in approximately half the cases the advisor received a higher pay-off from money invested in investment F ("aligned incentives", since F was the optimal choice for the advisee too) and in the rest of the cases the advisor received a higher pay-off from money invested in investment P ("adversely-aligned incentives"). This sub-treatment was randomly allocated and was the same in both repetitions of Block B.

547. Advisors and advisees were both told the advisee's pay-off (e.g. "The advisee's monetary pay-off for this task is €0.10 for each €1,000 profit in the task. Note that profit is not the same as earnings. Profit is the amount over €10,000 you earn from the investments.") and the incentives of the advisor (e.g. "The advisor's monetary pay-off for this task is €0.10 for each €1,000 invested by the advisee in Investment 1 and €0.20 for each €1,000 invested by the advisee in Investment 2."). Subjects were also provided with the average annual return of the Dow Jones stock index and the way in which the advisee's pay-off would be calculated (five random draws from the historical

distribution of annual DJ returns) was described to them. Advisors were additionally provided with the expected total payout of each investment (so they knew which was the optimal choice for the advisee) as well as the information about the previously observed decision-making bias. Before making the investment allocation decision, the advisee received (free) advice from the advisor.

548. The advisor could send the message "I recommend that you invest in Investment 1" or "I recommend that you invest in Investment 2". In the free communication treatments the advisor could also send any additional messages they wished via the chat window, in order to persuade or influence the advisee, and the advisee could respond. Advisors in the flat incentive treatments (who were assumed to be benevolent) could use the communication to try to de-bias advisees to make the optimal investment decision. Advisors in the biased incentive treatments could also try to de-bias advisees when their incentives were aligned or try to abuse the advisee's bias when their incentives were not aligned.

549. As in Experiment 1, the "optimal" investment choice in Blocks B and C was defined as the alternative with the highest expected value, implying risk neutrality to be optimal for a rational investor. This is consistent with expected utility maximisation and a utility curve that is concave over wealth, as shown in Rabin's Calibration Theorem (see Chapter VI for more details). As the returns for both investments were drawn from the same underlying distribution (historic annual returns from the Dow Jones Index) the risks in the two investments were perfectly correlated and there was no benefit in diversifying the investment across the two options. The optimal investment strategy was to invest the entire investment amount in the investment with the highest expected value. Failure to do so implies investment behaviour inconsistent with the long-term interests of a rational self-interested investor.

Block C – Pure Persuasion

550. Block C again presented advisees with the choice between two realistic financial products, and they had to decide how much from a fixed budget of €10,000 to allocate to each option. The entire budget had to be invested. Block C is adapted from Task 5 in Experiment 1 in which it was observed that subjects were averse to investing in a complex structured investment with an annual fee for avoiding the risk of capital loss

(C), even when it was superior to a simple equity investment with no fee (S). The two investments were described as:

Five Year Investment 1	**Five Year Investment 2**
Annual returns linked to the Dow Jones stock index	Annual returns linked to the Dow Jones stock index but never make a loss even if Dow Jones goes down
No initial set-up fee	No initial set-up fee
No annual fee	Annual management fee of €X (to be paid at the end of each year)

X	**E(Investment S)**	**E(Investment C)**
700	€14 423	€13 924
800	€14 423	€13 275

551. The allocation of Investment S (simple equity) and Investment C (complex structured) to Investments 1 and 2 was randomised. The parameter X was chosen such that the (non-structured) Investment S was the optimal choice for the advisee in both repetitions of the task. In this way the bias observed in Experiment 1 would be beneficial and lead to a better investment decision by the advisee. Within all treatment groups, in approximately half the cases the advisee was also provided with standardised and pre-calculated information about the expected net annual return of each investment, if the entire investment amount were to be invested in that investment:

"The net annual expected return is X% (assuming a €10 000 investment)"

552. This mirrors Policy Treatment A in Experiment 1, which was found to significantly increase the share of funds invested optimally in Task 5, where subjects chose between a standard equity product and a complex structured product. In the rest of the cases the advisee was not provided with any additional information. This sub-treatment was randomly allocated and was the same in both repetitions of Block C.

553. Advisors and advisees were both told the advisee's pay-off (e.g. "The advisee's monetary pay-off for this task is €0.40 for each €1,000 profit in the task. Note that profit is not the same as earnings. Profit is the amount over €10,000 you earn from the investments.") and the incentives of the advisor (e.g. "The advisor's monetary pay-off for this task is €0.10 for each €1,000 invested in Investment 1 and €0.20 for each €1,000 invested in Investment 2."). Subjects were also provided with the average annual return of the Dow Jones stock index and the way in which the advisee's pay-off would be calculated (five random draws from the historical distribution of annual DJ returns) was described to them. Advisors were additionally provided with the expected total payout of each investment (so they knew what the optimal choice was for the advisee). Before making the investment allocation decision, the advisee received (free) advice from the advisor.

554. The advisor could send the message "I recommend that you invest in Investment 1" or "I recommend that you invest in Investment 2". In the free communication treatments the advisor could also send any additional messages they wished via the chat window, in order to persuade or influence the advisee, and the advisee could respond. Again, the optimal investment decision was to invest the entire investment amount in the investment with the highest expected value. Advisors in the flat incentive treatments (who were assumed to be benevolent) could use the communication to try to help advisees to make the optimal investment decision. Advisors in the biased incentive treatments could try to persuade the advisee to opt for the complex structured investment product (C) even though it was the sub-optimal choice for the advisee (and the advisee would be biased against choosing it).

1.5 Subject Incentives

555. Subjects were paid a show-up fee of €2.50 / £5 / 150 Kč for taking part in the experiment, and a further €2.50 / £2 / 60 Kč for completing the post-task survey questions. In order to ensure incentive-compatibility, subjects also received a financial pay-off in each task that depended upon the choices of the advisee and/or the (stochastic) outcome of the investments. Each task was incentivised independent of the other tasks. Feedback was given and incentives were paid at the end of the experiment. The average total incentive received was €19.11 for advisor subjects and €22.64 for advisee subjects.

556. Advisor subjects in the "flat incentives" treatment groups were paid €1.50 / £1.50 / 45 Kč for each of the eight advised tasks (A1, A2, B and C with one repetition). Advisor subjects in the "biased incentives" treatment groups were paid €0.20 / £0.20 / 6 Kč for every €1,000 invested by their advisee partner in Tasks A1 and A2. The same advisor subjects were paid €0.20 / £0.20 / 6 Kč for every €1,000 invested in the high pay-off investment and €0.10 / £0.10 / 3 Kč for every €1,000 invested in the low pay-off investment by their advisee partner in Blocks B and C. As described earlier, the high and low pay-off investment was determined by whether the advisor was in the "aligned incentives" or "non-aligned incentives" treatment sub-group in Block B. The complex structured product (Investment C) was always the high pay-off investment in Block C.

557. Advisee subjects were faced with the same incentives in all treatment groups. In each of the six tasks in Block A (A0, A1 and A2 with one repetition), they received €0.10 / £0.10 / 3 Kč for every €1,000 they held at the end of the task. In Blocks B and C the advisee subjects were paid €0.40 / £0.40 / 12 Kč for every €1,000 profit they made on their investments. In the unlikely event that the investment return was negative, the incentive was capped at zero.

2 Experiment Results

2.1 Analysis Specification

558. There are a number of aspects of the experimental design that make the analysis of the results complex. First, each task was completed twice by subjects, albeit with different task parameters in the second round. Hence we may expect subject-level covariance between the first and second round, similar to a "repeated measures" design. Here we report the results of fitting linear mixed models that account for (auto-regressive) subject-level covariance between the two rounds. When we fit separate models to each round of tasks they show similar results to each other, so it is appropriate to combine the two rounds of data into a single model. Second, while the random matching of advisor-advisee pairs should reduce any spill-over effects between tasks, it is still possible that in the free communication treatment groups an advisee could have taken information from an advisor in a prior task and utilised that information in a subsequent task with a different advisor. However, we assume that performance on each advised task is independent of performance on the other advised tasks within each round. By analysing

each task independently we implicitly assume that any contagion effects are negligible. Third, a large number of control variables were collected in the post-task survey. Here we report results from models that only include a small set of controls (country, gender, self-rated maths ability and self-rated risk appetite), but the results are robust to inclusion of a much wider set of controls and these results are reported in the appendices.

2.2 Block A – Lying and Deception

Task A0: "Non-Advised"

559. Task A0 simply measured subjects' appetite for risk. A risk-neutral subject would be indifferent between all choices, from investing nothing to investing all. Risk-averse subjects should refrain from investing; risk lovers might invest part of their funds. In fact, advisee subjects invested a mean of €3,973 in Task A0. The investment in Task A0 mainly serves as a control for our analysis of Tasks A1 and A2. In principle, we should not expect any differences between treatments for Task A0, especially in the first round as there is no advice yet and subjects do not even know about the form their advice will take later (as instructions were fed in on-screen and not distributed *in toto* at the start). Having this control is important as, somewhat unusually, randomising subjects into treatments did not generate subgroups with equal risk appetite.

560. Table 8.2 shows the results from regressing, with an OLS (Ordinary Least Squares) model, the amount invested in Task A0 on treatments, country dummies, gender, and self-reported maths ability and risk appetite. It turns out that subjects in the treatment with flat incentives and free communication have, on average, a bigger appetite for risk than others with subjects in the treatment with biased incentives and free communication having the lowest risk appetite. These results demonstrate the importance of including Task A0 as a control in the analysis of Tasks A1 and A2.[183] Otherwise we find that German subjects invest more than British and Czech subjects and that the self-reported risk attitude correlates well with the revealed appetite for risk

[183] Without the investment amount from Task A0 as a control in the following regressions for Tasks A1 and A2 we might have picked up pseudo effects of the treatments that just stem from the correlation between treatments and risk appetite.

from the choice task. Subjects invested significantly less in the second round, perhaps because the riskiness of Task A1 was higher in the second round than in the first round.

N	484	-2 Restricted LL	8732.7
Subjects	242	AIC	8736.7
Parameters	12	BIC	8745.0

Variable	Coeff.	Std. Err.	*t*	Prob>|*t*|	95% Confidence Interval	
Intercept	2059.8	665.11	3.10	.002	749.66	3369.9
Biased incentives	-147.99	335.79	-0.44	.660	-809.57	513.59
Free communication	671.40	334.63	2.01	.046	12.114	1330.7
Biased inc. & Free comm.	-791.39	471.07	-1.68	.094	-1719.5	136.72
Second round	-582.64	185.50	-3.14	.002	-948.05	-217.24
Germany	618.59	288.04	2.15	.033	51.094	1186.1
Czech Republic	66.029	289.04	0.23	.820	-503.44	635.50
Gender (M=0, F=1)	295.13	250.52	1.18	.240	-198.44	788.70
Self-rated maths ability	-61.859	64.259	-0.96	.337	-188.46	64.744
Self-rated risk appetite	390.21	57.871	6.74	.000	276.19	504.23

Table 8.2 – Advisee investment amount in Task A0

Task A1: "Cheap Talk"

561. We now turn to Task A1, the first task in which advisors became active. On average, advisors told the truth (i.e. they truthfully disclosed whether or not they saw the investment outcome and whether or not it was successful) on 66% of trials. In a first step we analyse the drivers of truth-telling, that is we regress a binary dummy variable for telling the truth on the treatment dummies and the other controls from above. The results are shown in Table 8.3. The estimates in Table 8.2 indicate that advisors were much more likely to tell the truth when they saw a successful investment outcome. The estimates also indicate that, on average, with biased incentives there is less truthful advice than with flat incentives (55% vs. 78% overall; 46% vs. 72% when the advisor

did not see the investment outcome). The estimates confirm that incentives do indeed matter in the direction that theory suggests. The impact of free communication on the amount of truth-telling is weakly significant and advisors told the truth equally often in the first and second rounds. Finally, there is a country effect, with Czech subjects lying more often.

N	484	-2 Restricted LL	618.84
Subjects	242	AIC	622.84
Parameters	14	BIC	631.15

Variable	Coeff.	Std. Err.	*t*	Prob>|*t*|	95% Confidence Interval	
Intercept	.75558	.12849	5.88	.000	.50252	1.0087
Biased incentives	-.24332	.06099	-3.99	.000	-.36350	-.12314
Free communication	.10342	.06121	1.69	.092	-.01718	.22401
Biased inc. & Free comm.	.01769	.08601	0.21	.837	-.15179	.18716
Advisor knows outcome	.01063	.04574	0.23	.816	-.07926	.10052
Advisor knows successful	.29002	.05615	5.16	.000	.17968	.40036
Second round	.03240	.03740	0.87	.387	-.04126	.10607
Germany	.02017	.05295	0.38	.704	-.08415	.12450
Czech Republic	-.10060	.05266	-1.91	.057	-.20436	.00316
Gender (M=0, F=1)	.03522	.04453	0.79	.430	-.05252	.12296
Self-rated maths ability	-.00688	.01258	-0.55	.585	-.03167	.01790
Self-rated risk appetite	-.00893	.01124	-0.79	.428	-.03108	.01322

Table 8.3 – Advisor truth-telling in Task A1

562. Advisees invest on average €4,382 in Task A1. However, while there is not much difference in the degree of advisors' truth telling between the different treatments, advisees exhibit substantial care when they know their advisor is biased. This can be seen in Table 8.4 where we regress the amount invested in Task A1 on whether or not the advisee was told the outcome of the investment and whether he or she was told the

outcome was successful, while we included the usual treatment variables and other controls as well as the investment amount in Task A0. Relative to the case when their advisor claims not to have seen the investment outcome, advisees invest about €3,000 extra when their advisor claims that the investment was successful, and invest about €2,700 less when their advisor claims that the investment was a failure. Advisees with a greater appetite for risk (as shown by their investment amount in Task A0 and their self-rated risk appetite) invest more in Task A1 (an extra €317 for every €1,000 invested in Task A0). Subjects invest less, on average, in the second round than in the first round. Most importantly, advisees invest about €900 less when their advisor has biased incentives compared to the case when their advisor has flat incentives: unlike in the online Experiment 2, here - with full disclosure of incentives, and with sufficient time and attention paid to the task due to the laboratory conditions - (well-educated student) subjects exhibit wariness in the presence of a potential conflict of interest. There is no significant impact of free communication with the advisor, and there are no country or gender effects.

N	484
Subjects	242
Parameters	15

-2 Restricted LL	8760.6
AIC	8764.6
BIC	8772.9

Variable	Coeff.	Std. Err.	*t*	Prob>|*t*|	95% Confidence Interval	
Intercept	2038.2	740.37	2.75	.006	580.10	3496.2
Biased incentives	-914.06	371.63	-2.46	.015	-1646.1	-182.05
Free communication	-275.21	363.14	-0.76	.449	-990.68	440.26
Biased inc. & Free comm.	584.18	511.88	1.14	.255	-424.32	1592.7
Advisor claims successful	3168.2	258.80	12.24	.000	2659.6	3676.8
Advisor claims failure	-2659.8	302.16	-8.80	.000	-3253.6	-2066.0
A0 investment amount	.31701	.04876	6.50	.000	.22120	.41282
Second round	-580.25	195.66	-2.97	.003	-965.64	-194.87
Germany	363.04	313.69	1.16	.248	-254.98	981.06
Czech Republic	16.095	312.71	0.05	.959	-600.03	632.22
Gender (M=0, F=1)	86.471	271.56	0.32	.750	-448.57	621.51
Self-rated maths ability	32.790	69.553	0.47	.638	-104.25	169.83
Self-rated risk appetite	116.26	65.381	1.78	.077	-12.506	245.02

Table 8.4 – Advisee investment in Task A1

563. The question arises whether advisees react differently to claims about the investment outcome depending on whether they know that the advice comes from a biased or an un-biased advisor. For that purpose we split the data set into two and run separate regressions for the treatments with flat incentives (Table 8.5) and biased incentives (Table 8.6). The estimates reveal that advisees are a little more cautious when advisors are biased but not massively so, investing an additional €3,600 when an unbiased investor claims the investment outcome is successful, and only €2,900 extra when a biased advisor makes the same claim. Given the weak differences in advisor behaviour this appears remarkably rational. Figure 8.2 below shows the observed mean amount

invested in Task A1 in response to each type of message from the advisor, split by the four treatment groups, which clearly shows that advice from a biased advisor is less-trusted than advice from an un-biased advisor.

N	240
Subjects	120
Parameters	13

-2 Restricted LL	4237.7
AIC	4241.7
BIC	4248.6

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Intercept	1074.6	890.74	1.21	.230	-688.78	2838.0
Free communication	-321.09	293.88	-1.09	.277	-903.31	261.14
Advisor says success	3656.7	343.78	10.64	.000	2979.3	4334.2
Advisor says failure	-2807.6	357.51	-7.85	.000	-3512.2	-2102.9
A0 investment amount	.37898	.06096	6.22	.000	.25885	.49910
Second round	-129.13	288.29	-0.45	.655	-699.51	441.26
Germany	258.99	357.49	0.72	.470	-449.34	967.32
Czech Republic	-196.49	356.97	-0.55	.583	-903.76	510.78
Gender (M=0, F=1)	-140.37	319.66	-0.44	.661	-773.78	493.03
Self-rated maths ability	122.26	84.128	1.45	.149	-44.442	288.96
Self-rated risk appetite	107.59	82.254	1.31	.193	-55.291	270.48

Table 8.5 – Advisee investment in Task A1 (flat incentives)

N	244
Subjects	122
Parameters	13

-2 Restricted LL	4386.4
AIC	4390.4
BIC	4397.3

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Intercept	1809.8	1068.6	1.69	.093	-304.58	3924.2
Free communication	236.46	431.04	0.55	.584	-617.42	1090.3
Advisor says success	2881.3	360.63	7.99	.000	2169.8	3592.8
Advisor says failure	-2256.3	482.33	-4.68	.000	-3207.9	-1304.8
A0 investment amount	.20381	.07392	2.76	.006	.05813	.34950
Second round	-886.64	261.05	-3.40	.001	-1403.6	-369.73
Germany	584.96	529.63	1.10	.272	-464.15	1634.1
Czech Republic	337.05	527.13	0.64	.524	-707.29	1381.4
Gender (M=0, F=1)	397.63	455.21	0.87	.384	-504.19	1299.4
Self-rated maths ability	-39.305	110.98	-0.35	.724	-259.17	180.56
Self-rated risk appetite	149.51	102.21	1.46	.146	-52.760	351.78

Table 8.6 – Advisee investment in Task A1 (biased incentives)

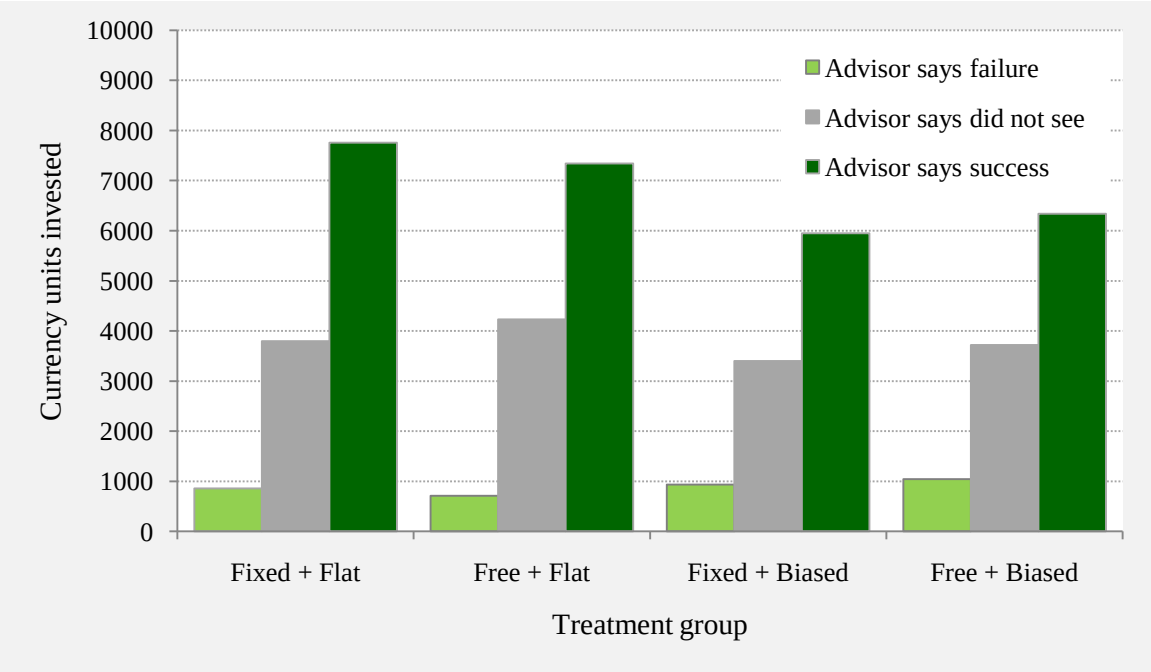


Figure 8.2 – Advisee investment in Task A1 (split by treatment and advice)

Task A2: "Strategic Disclosure"

564. While advisors can lie in Task A1 they can only choose to hide or reveal (true) information in Task A2. Not revealing the investment outcome would be in the interest of a biased advisor who knows that the investment was a failure. Thus, in order to examine advisor behaviour we split the sample into two subsamples, one for advisors who saw the outcome was successful and one for advisors who saw the outcome was a failure. Of the advisors who saw a successful outcome, they chose to reveal the outcome on 91% of trials. Of the advisors who saw a failure, they only chose to reveal the outcome on 66% of trials. For both cases we regress whether the outcome was revealed on the usual covariates. Table 8.7 shows the estimates for an unsuccessful outcome; Table 8.8 shows the estimates for a successful outcome.

N	146
Subjects	124
Parameters	12

-2 Restricted LL	185.83
AIC	189.83
BIC	195.66

Variable	Coeff.	Std. Err.	*t*	Prob>|*t*|	95% Confidence Interval	
Intercept	.84253	.22047	3.82	.000	.40608	1.2790
Biased incentives	-.40141	.10312	-3.89	.000	-.60551	-.19731
Free communication	.07964	.09982	0.80	.427	-.11803	.27731
Biased inc. & Free comm.	-.12387	.14100	-0.88	.381	-.40312	.15537
Second round	-.15291	.06993	-2.19	.031	-.29149	-.01433
Germany	-.00398	.08773	-0.05	.964	-.17782	.16987
Czech Republic	.08879	.08624	1.03	.305	-.08200	.25957
Gender (M=0, F=1)	.10822	.07500	1.44	.152	-.04031	.25674
Self-rated maths ability	-.00948	.02207	-0.43	.668	-.05318	.03421
Self-rated risk appetite	.01477	.01812	0.82	.417	-.02111	.05065

Table 8.7 – Advisor reveals outcome in Task A2 (knows outcome = failure)

N	89
Subjects	81
Parameters	12

-2 Restricted LL	45.090
AIC	49.090
BIC	53.829

Variable	Coeff.	Std. Err.	*t*	Prob>|*t*|	95% Confidence Interval	
Intercept	.82441	.16180	5.10	.000	.50014	1.1487
Biased incentives	.28039	.06691	4.19	.000	.14644	.41433
Free communication	.28363	.07348	3.86	.000	.13624	.43102
Biased inc. & Free comm.	-.28000	.10418	-2.69	.010	-.48938	-.07061
Second round	.10615	.05920	1.79	.077	-.01176	.22405
Germany	.04291	.06761	0.63	.528	-.09205	.17788
Czech Republic	.00962	.06841	0.14	.889	-.12660	.14584
Gender (M=0, F=1)	-.15640	.05543	-2.82	.007	-.26741	-.04540
Self-rated maths ability	.00009	.01548	0.01	.996	-.03101	.03119
Self-rated risk appetite	-.01661	.01563	-1.06	.291	-.04778	.01455

Table 8.8 – Advisor reveals outcome in Task A2 (knows outcome = success)

565. Table 8.8 shows a somewhat surprising result: advisors with flat incentives do not reveal successful outcomes as often as advisors with biased incentives. Of course, from the perspective of orthodox economics, advisors with flat incentives simply shouldn't care. However, the tiniest bit of altruism or caring for efficiency should make them tell the truth. It appears, however, that not all advisors with flat incentives do feel such compassion (although more do when they must communicate freely with advisees, which is interesting in itself). However, the stark finding is that quite a few advisors with flat incentives simply do not care – just as orthodox theory would have it. This points to a positive consequence of biased incentives: when an advisor possesses private information that an investment opportunity is indeed good, an advisee is more likely to learn about it. When the outcome is known to be bad we find again a clear and even stronger effect of the incentives and in the direction of the theory (see Table 8.7).

Biased advisors are much less likely to reveal the negative truth than advisors with flat incentives – the downside of having biased advisors.

566. When advisees learn the (true) outcome in Task A2 all uncertainty is resolved and they should invest either all or nothing. This insight is, however, not perfectly shared by all advisees. Interestingly, as we see in Figure 8.3 below, the response to revealed negative information is more complete than that to revealed positive information. Figure 8.3 shows the average amount invested by advisees who received each advice message, split by the treatment groups. If advisees are shown a failed outcome, they only invest, on average, around 7% of their funds. On the other hand, if they are shown a successful outcome they invest, on average, around 75% of their funds. It appears investors cultivate an inbuilt (irrational) scepticism, despite being told that the advisor could not lie about the investment outcome if they chose to reveal it. Advisees are most sceptical when their advisor has biased incentives, investing only 67% of funds when a successful outcome is revealed, compared to 84% of funds invested when an unbiased advisor reveals a successful outcome.

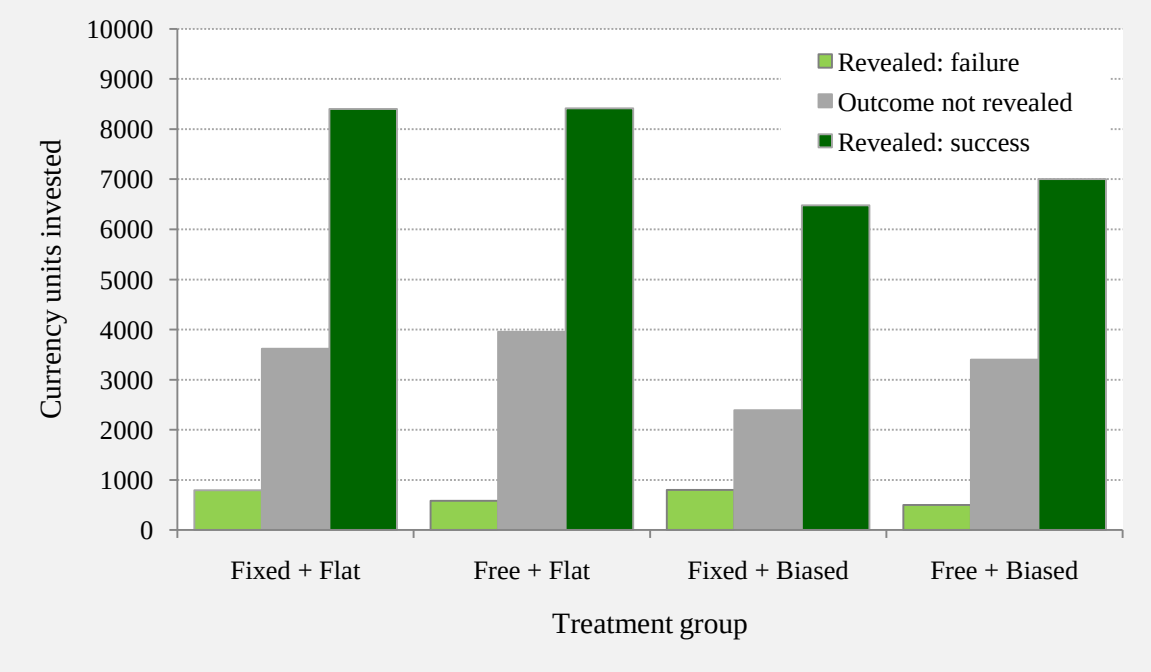


Figure 8.3 – Advisee investment in Task A2 (split by treatment and advice)

567. The most interesting case arises, of course, when the investment outcome is not revealed to the advisee. To analyse that case we regress the sum of funds invested on the usual covariates. Table 8.9 shows the estimates. The estimates show that, as in Task

A1, advisees with a greater appetite for risk (as shown by their investment amount in Task A0 and their self-rated risk appetite) invest more. Importantly, advisees invest, on average, €1,100 less when their advisor has biased incentives than when their advisor has flat incentives. However, that drops to around just €160 (the difference between €1143 and €985) less on average when the biased advisor can freely communicate with the advisee: free communication enables a biased advisor to overcome much of the wariness introduced by disclosure of biased incentives (but not to encourage more investment than the case when the advisor is unbiased).

N	307	-2 Restricted LL	5481.0
Subjects	213	AIC	5485.0
Parameters	12	BIC	5492.4

Variable	Coeff.	Std. Err.	*t*	Prob>|*t*|	95% Confidence Interval	
Intercept	1083.9	766.69	1.41	.159	-427.30	2595.1
Biased incentives	-1142.7	368.34	-3.10	.002	-1869.1	-416.30
Free communication	-153.81	383.85	-0.40	.689	-910.34	602.72
Biased inc. & Free comm.	985.21	518.48	1.90	.059	-37.076	2007.5
A0 investment amount	.35864	.05322	6.74	.000	.25390	.46338
Second round	-381.81	234.99	-1.62	.106	-845.43	81.802
Germany	-311.26	311.73	-1.00	.319	-926.02	303.49
Czech Republic	-169.44	318.16	-0.53	.595	-796.76	457.89
Gender (M=0, F=1)	-23.566	276.17	-0.09	.932	-568.14	521.01
Self-rated maths ability	11.948	72.804	0.16	.870	-131.58	155.48
Self-rated risk appetite	254.36	67.593	3.76	.000	121.12	387.60

Table 8.9 – Advisee investment in Task A2 (outcome not revealed)

2.3 Block B – De-Biasing or Abusing Biases

568. In Blocks B and C we revisit two investment problems from the first (online) experiment, in which subjects have to decide how much of an initial allocation to invest

in each of two options. This time, however, they must complete the task with advice as in Block A. Overall, advisors told the truth (i.e. recommended Investment F, with fixed fees not percentage fees) on 58% of trials in Task B. Advisors could have flat incentives or biased incentives that are either aligned with the advisee's interest or not, that is, there were three cases in total: flat, biased-aligned and adversely-biased. In order to study truth-telling by advisors we regress a binary variable for telling the truth on dummy variables that capture the different scenarios as well as the usual control variables. Table 8.10 shows the results. The regressions reveal that adversely-biased advisors are less likely to tell the truth compared to unbiased advisors, and that advisors whose incentives are aligned with those of advisees are more likely to tell the truth. There are no effects of communication. In particular, from the viewpoint of these regressions it appears that the disadvantages of incentivising advisors outweigh the benefits: the positive effect of aligned incentives on truth-telling is less than half the size of the negative effect of adversely-aligned incentives.

N	484		-2 Restricted LL	562.06
Subjects	242		AIC	566.06
Parameters	14		BIC	574.37

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Intercept	.53898	.13233	4.07	.000	.27832	.79965
Biased & aligned	.21294	.07115	2.99	.003	.07293	.35296
Biased & not aligned	-.43734	.07680	-5.69	.000	-.58840	-.28628
Free communication	-.07722	.06411	-1.20	.230	-.20353	.04909
Aligned & Free comm..	.03053	.10190	0.30	.765	-.16997	.23103
Not aligned & Free comm.	-.04753	.10624	-0.45	.655	-.25652	.16145
Second round	.03306	.03151	1.05	.295	-.02900	.09512
Germany	.00210	.05562	0.04	.970	-.10747	.11168
Czech Republic	-.04021	.05541	-0.73	.469	-.14938	.06896
Gender (M=0, F=1)	-.04817	.04700	-1.02	.306	-.14076	.04443
Self-rated maths ability	.02402	.01322	1.82	.070	-.00202	.05007
Self-rated risk appetite	-.00437	.01176	-0.37	.710	-.02754	.01879

Table 8.10 – Advisor truth-telling in Task B

569. On average, advisees invested 52.2% of funds optimally in Task B (i.e. €5,220 was, on average, invested in Investment F). The analysis of advisees' investment behaviour is slightly more complex for Task B than for the previously studied tasks. Yet, it has the same structure, that is, we regress the optimally-invested amount on treatment dummies, messages received and the usual controls. Table 8.11 shows the estimates. Advisees are strongly swayed by advice, investing nearly €4,700 more in Investment F (fixed frame fees) when the advisor recommends Investment F, compared to the case when the advisor recommends Investment P (percentage frame fees). However, advisees also respond to disclosure of biased incentives with contrary behaviour: when the advisor is biased to recommend Investment F (i.e. has aligned incentives), advisees trust their

advice less than the same advice from unbiased advisors, investing almost €1,600 less in the optimal investment. When the advisor is biased to recommend Investment P (i.e. has adversely-aligned incentives), advisees invested around €1,800 more in the optimal investment (Investment F). However, when the adversely-biased advisor could communicate freely with the advisee, that dropped to around just €300 more invested optimally than when the advisor had flat incentives. In other words, just as in Task A2, free communication enables a biased advisor to overcome much of the wariness induced by disclosure of biased incentives. Interestingly, free communication did not enable advisors with aligned incentives to overcome the same wariness, but remember that Experiment 1 showed that investors are already biased towards Investment P. In other words, these results suggest that free communication enables an incentivised advisor to exploit a behavioural bias but not to de-bias an advisee (although this hypothesis cannot be confirmed or rejected until a detailed content analysis of the free communication transcripts is conducted). Figure 8.4 shows the average amount of funds invested optimally in Task B, split by the advice received and the treatment groups, which clearly shows how subjects are less trusting of advice from biased advisors, regardless of whether or not that bias is aligned with the advisee's own best interest or not.

N	484
Subjects	242
Parameters	15

-2 Restricted LL	9006.3
AIC	9010.3
BIC	9018.6

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Intercept	2592.4	845.75	3.07	.002	927.06	4257.8
Advisor recommends Inv F	4667.3	345.12	13.52	.000	3989.1	5345.5
Biased & aligned	-1586.4	486.04	-3.26	.001	-2542.6	-630.17
Biased & not aligned	1808.6	548.28	3.30	.001	730.47	2886.7
Free communication	134.88	407.95	0.33	.741	-668.91	938.66
Aligned & Free comm..	-209.29	690.53	-0.30	.762	-1568.0	1149.4
Not aligned & Free comm.	-1517.7	726.96	-2.09	.038	-2947.7	-87.775
Second round	337.32	298.60	1.13	.260	-250.90	925.55
Germany	251.33	351.65	0.71	.475	-441.51	944.18
Czech Republic	110.96	353.35	0.31	.754	-585.24	807.15
Gender (M=0, F=1)	156.74	305.24	0.51	.608	-444.67	758.16
Self-rated maths ability	-51.555	78.247	-0.66	.511	-205.73	102.62
Self-rated risk appetite	13.348	70.462	0.19	.850	-125.49	152.18

Table 8.11 – Amount invested optimally in Task B

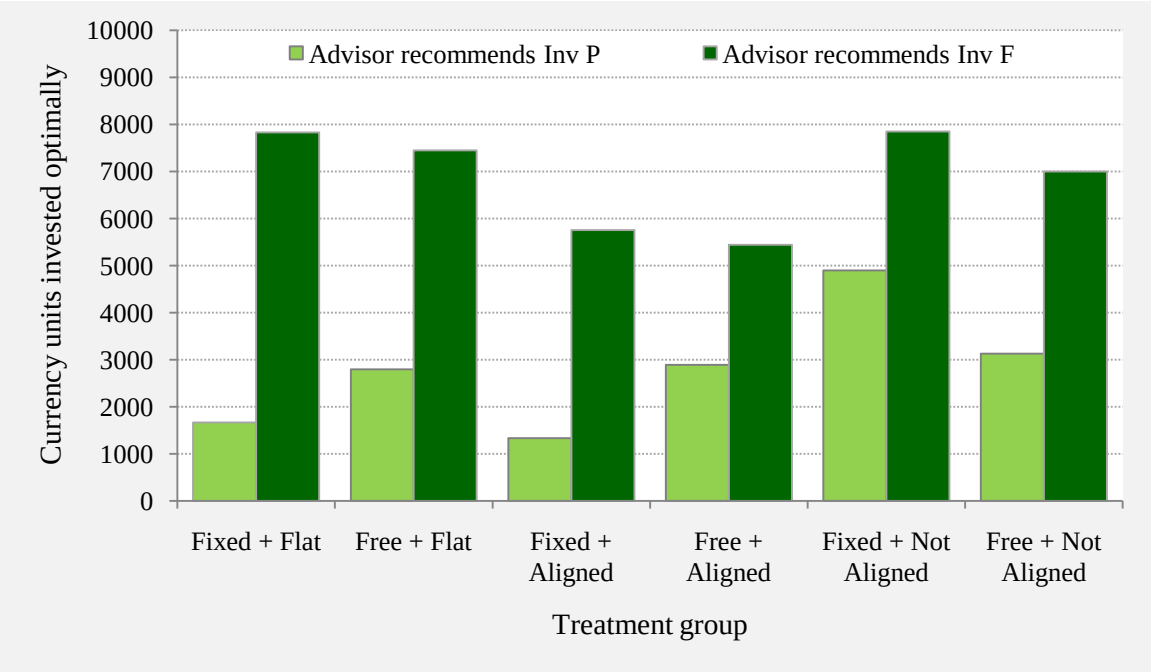


Figure 8.4 – Advisee investment in Task B (split by treatment and advice)

2.4 Block C – Pure Persuasion

570. Overall, advisors told the truth (i.e. recommended Investment S, the simple equity product not the complex structured product) on 54% of trials in Task C. All biased advisors are adversely biased in this task, hence in our truth-telling regression we simply have to distinguish two cases for the incentives: flat or biased. Table 8.12 shows the results (again we control for the usual set of covariates). As was to be expected, adversely-biased advisors are less likely to tell the truth. Biased incentives reduce truth-telling by some 35% relative to an unbiased advisor. Again, there are no interactions with communication and no effects of the controls.

N	484
Subjects	242
Parameters	12

-2 Restricted LL	650.56
AIC	654.56
BIC	662.88

Variable	Coeff.	Std. Err.	*t*	Prob>|*t*|	95% Confidence Interval	
Intercept	.84640	.14661	5.77	.000	.55758	1.1352
Biased incentives	-.35038	.07077	-4.95	.000	-.48981	-.21096
Free communication	-.03404	.07112	-0.48	.633	-.17417	.10609
Biased inc. & Free comm.	.03430	.09999	0.34	.732	-.16269	.23129
Second round	.05785	.03444	1.68	.094	-.01000	.12570
Germany	.05552	.06156	0.90	.368	-.06575	.17680
Czech Republic	.00931	.06134	0.15	.879	-.11154	.13016
Gender (M=0, F=1)	-.07274	.05188	-1.40	.162	-.17496	.02947
Self-rated maths ability	-.01407	.01465	-0.96	.338	-.04294	.01480
Self-rated risk appetite	-.00683	.01304	-0.52	.601	-.03252	.01886

Table 8.12 – Advisor truth-telling in Task C

571. On average, advisees invested 66.7% of funds optimally in Task C (i.e. about €6,670 was, on average, invested in Investment S). For the advisees in Task C there was an additional treatment variation: some advisees were informed about the net expected value of the two investment options (mirroring the policy treatment in Experiment 1) for which we have to control when we regress optimally invested-funds on treatments and controls. Table 8.13 shows the results. Once again, we find that advisees crucially depend on advice. If they are told to invest in Investment S, they optimally invest almost €4,000 more than when told to invest in Investment C. However, beyond that there is a striking result: advisees invest, on average, more funds optimally when they deal with biased advisors. This points at a strong dose of contrarianism in advisee behaviour (exactly as also seen in Task B above). When warned of the advisor's bias many advisees appear to assume that this automatically indicates an adverse bias and, consequently, they invest more into the option for which the advisor is not paid as

much. This is illustrated in Figure 8.5 which shows the amount of funds invested optimally, split by the advice received and the treatment groups. Unlike in Task B, free communication does not enable a biased advisor to overcome the advisee's wariness in Task C (although the effect is in the expected direction and approaches statistical significance). Providing the advisee with the net expected return of each investment has no significant impact on the amount invested optimally (although advisees were likely already strongly biased toward choosing the optimal investment, based on the findings of Experiment 1) but, again, the effect is in the predicted direction and approaches statistical significance.

N	484	-2 Restricted LL	8978.1
Subjects	242	AIC	8982.1
Parameters	14	BIC	8990.4

Variable	Coeff.	Std. Err.	*t*	Prob>|*t*|	95% Confidence Interval	
Intercept	2532.3	974.52	2.60	.010	613.16	4451.4
Advisor recommends Inv S	4009.3	290.36	13.81	.000	3438.6	4580.0
Net expected return shown	466.56	336.85	1.39	.167	-197.12	1130.2
Biased incentives	1530.8	482.18	3.17	.002	581.11	2480.6
Free communication	206.19	469.48	0.44	.661	-718.81	1131.2
Biased inc. & Free comm.	-912.26	661.06	-1.38	.169	-2214.7	390.20
Second round	528.39	236.91	2.23	.027	61.702	995.07
Germany	-31.771	405.81	-0.08	.938	-831.32	767.78
Czech Republic	255.69	406.59	0.63	.530	-545.39	1056.8
Gender (M=0, F=1)	-1037.7	351.89	-2.95	.004	-1731.0	-344.38
Self-rated maths ability	125.27	90.147	1.39	.166	-52.340	302.88
Self-rated risk appetite	52.381	81.209	0.65	.520	-107.62	212.38

Table 8.13 – Amount invested optimally in Task C

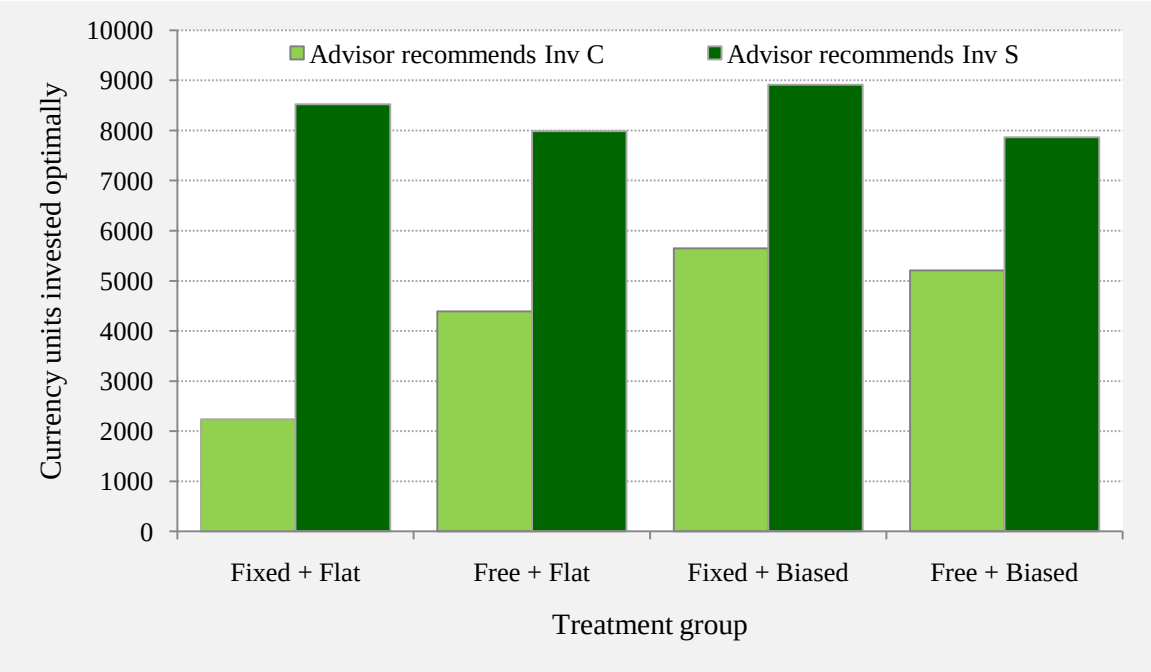


Figure 8.5 – Advisee investment in Task C (split by treatment and advice)

3 Conclusions

3.1 Advisee Response to Advice and Incentive Disclosure

572. Advisee subjects are strongly led by the advice received in each task of Experiment 3. In every advised task, advisees' investment choices were significantly and strongly influenced by the recommendation received from their advisor. However, we also find that – in contrast to Experiment 2 – advisee subjects do respond somewhat to disclosure of advisor incentives. In all four advised tasks there was a significant impact of disclosing biased incentives, with advisees being less likely to invest when they knew that their advisor would receive (more) money if they did so. This "contrarian" behaviour may be somewhat reflexive rather than properly thought through - for example, we see it also in Task A2 even when advisors (truthfully) reveal a successful investment outcome – but it is consistent and of a similar magnitude in each case.

573. It is not possible to say for sure why subjects in Experiment 3 were more sensitive to disclosed conflicts of interest than in Experiment 2, but there are a number of key differences between the two studies that may have played a role:

    a. The disclosure itself was much clearer and more transparent in the present study, with the actual incentives being disclosed rather than just a

(possibly hard-to-understand) description of the advisor's remuneration structure.

b. In a laboratory experiment subjects typically spend much longer doing the tasks and they are likely to pay more attention because outside distractions have been removed and an experimenter is monitoring their behaviour. We saw in Experiment 2 that subjects who took longer to complete the online tasks were more likely to respond to disclosed incentives (accompanied by a health warning), so we might expect a stronger effect of incentive disclosure in a laboratory setting.

c. The advisor-advisee interaction was more realistic and "live" in the laboratory setting, so subjects may have been more likely to ascribe strategic thinking and (selfish) motives to the advisor compared to when they received pre-determined advice online.

d. Experiments 1 and 2 were conducted on a wide cross-section of the general population while Experiment 3 was conducted on a convenience sample of well-educated student subjects, many of whom will have received some training in mathematics or economics (although performance on Tasks B and C was not noticeably better than in the equivalent tasks in Experiment 1).

574. It is not possible to say whether the tendency of advisees to follow advice or their contrarian response to disclosed conflicts of interest are detrimental or harmful to investors per se. That depends in part upon the degree to which advisors in the real world tend to have valuable private information or a greater ability to pick suitable investments in comparison to their clients, making their advice valuable and worth following. It also depends upon the extent to which advisors' incentives, such as bonuses and commission payments, are aligned (or not) with consumers' best interests. As we saw in Task B, when incentives are adversely-aligned then a contrarian response is beneficial for the advisee, but when incentives are aligned then a contrarian response is detrimental. Finally, it also depends upon the degree to which advisors in the real world actually respond to financial incentives to encourage investment or to promote one product rather than another. As we discuss below in more depth, while strong

conclusions about advisor behaviour cannot be drawn from a study using untrained student advisors, some of the results of Experiment 3 highlight some of the potential benefits, as well as the possible dangers, of incentivising advisors.

3.2 Impact of Free Communication

575. One of the primary motivations for the design of this study, in addition to corroborating some of the earlier findings in the controlled setting of a laboratory experiment, was to determine the impact of social influences in face-to-face advice situations, specifically the impact of free communication between advisor and advisee. Advisors could potentially use free communication to build rapport with advisees, demonstrate expertise, use persuasive arguments, or simply make unenforceable promises in order to influence and encourage advisees to behave in the way the advisor wants. Our results on the impact of free communication are mixed. Overall, there is little evidence of a strong or overpowering impact of free communication relative to pre-determined and impersonal recommendations, with no significant main effect of free communication in any of the advised tasks. This is encouraging news for the external validity of abstract laboratory experiments investigating advice and investment behaviour, as removing the social aspect of free communication does not have a strong effect on the outcome. Furthermore, it suggests that direct advice situations per se are not harmful to investors, as free communication does not appear to provide advisors with the ability to apply additional pressure to advisees. While advice is persuasive and tends to be followed, this is just as true in the absence of free communication as it is in a direct advised setting.

576. We do find evidence of some specific impacts of free communication: in some circumstances it seems to enable a biased advisor to overcome the contrarian reflex in advisees' behaviour when a conflict of interest is disclosed. Specifically in Task A2, when a biased advisor did not (or could not) reveal the investment outcome to the advisee, free communication meant that the advisor could successfully persuade the advisee that their non-disclosure was genuine (and so the advisee should invest according to their risk preferences) rather than a strategic decision to hide a bad outcome (in which case the advisee should invest less or nothing in the investment opportunity). Similarly, in Task B, free communication enabled biased advisors to neutralize the impact of disclosure of their incentives upon advisees' investment

decisions, but only when the advisor's incentives were adversely aligned with the advisee's interests (and hence aligned with the advisee's pre-existing behavioural bias). No significant effect of free communication on advisees' behaviour was found in Task A1, and while the impact of free communication in Task C was in the same direction as the previous tasks, the effect was not statistically significant. The only other effect of free communication was in Task A2, where advisors were more likely to (truthfully) reveal a successful investment outcome when they had to subsequently communicate with the advisee.

3.3 Advisor Behaviour

577. While we have, rightly, concentrated on understanding and describing advisees' behaviour and the factors that influence their decisions, it is also interesting to consider briefly the behaviour exhibited by the advisor subjects in Experiment 3. Largely, we find confirmation of the comparative statics of the theoretical benchmark: incentives matter and incentivised advisors behave differently from advisors with flat remuneration, being more likely to lie and deceive when it is in their interest to do so. However, there are some matters that complicate the picture. First of all, we find that incentivised advisors can outperform advisors with flat incentives as the latter tell or reveal the truth less often than we expected. Thus, advisees who are lucky enough to have an advisor whose incentives are aligned with their interests make better decisions than advisees who receive advice from "neutral" advisors. Neutral advisors might simply not care. Moreover, some of the negative consequences of biased advice are compensated by advisees who tend to discount advice from biased advisors and sometimes even act in a straightforward contrarian manner (which, of course, also wipes out some of the benefits from advice). In all, the interpretation of our findings crucially depends on how much external validity the lacklustre performance of unbiased advisors in our experiment has. If in real life "honour", "benevolence" or "reputation" are more important than in the laboratory, we underestimate the negative effects of biasing advisors through paying them commission etc.

3.4 External Validity, Limitations and Further Research Questions

578. In comparison to the previous online studies, the actual monetary incentives in this laboratory study were higher (although still small) and subjects spent considerably more

time on their hypothetical decisions. On the other hand, the sample size was much smaller and the subjects were drawn from a less-representative population. Thus it should not be automatically assumed that the laboratory results always have more (or less) external validity than online studies. In line with the previous studies, the real strengths of experiments such as this lie in the comparison of different treatments as experiment- or subject-pool-specific idiosyncrasies cancel out, lending such treatment comparisons higher degrees of external validity. Our main results concern the response of advisees to the disclosure of a conflict of interest created by their advisor's remuneration and incentives. The results of this study suggest a far stronger response to incentive disclosure than was observed previously in Experiment 2. Rather than attempting to decide which of the two studies has greater external validity – as both have strengths and weaknesses – we prefer to interpret the difference as indicating that the impact of incentive disclosure is sensitive to contextual factors. In particular, advisees' responses appear to be influenced by the amount of time and attention paid to the decision and the transparency of the particular form of incentive disclosure used.

579. The external validity of the results concerning the (lack of) effect of free communication depends upon the relative importance of free communication in comparison to other aspects of face-to-face advice situations that were not tested here. If, as we conjectured when designing the study, the ability to freely communicate is one of the key differences between a remote or non-advised investment decision and a face-to-face advised investment decision, then the results of Experiment 3 suggest that the impact of "social factors" is relatively small. If, on the other hand, some other difference – such as physical contact or the physical appearance of the advisor – are critical, then the results of Experiment 3 are likely to underestimate the impact of social factors in the real world. This is an empirical question, that can be answered with further experimental studies. Until that happens, the external validity of Experiment 3 as a test of "social factors" is difficult to judge. More narrowly, however, there is no reason to suspect that the way in which free communication was tested (using chat windows) should fail to accurately reflect free communication in the real world, so as a test of the impact of free communication in advised sales there is no reason to doubt the external validity of the findings.

580. A number of lines of further research are suggested by the findings of Experiment 3. The first is to identify and test other "social factors" in advised sales, ideally using between-subject treatments to isolate the impact of each factor on advisor and advisee behaviour. A second line of enquiry would be to trial and compare potential policy remedies if certain social factors were found to have a significant and detrimental effect upon consumer investment decision-making. Thirdly, given the differing impact of disclosing advisor incentives in Experiments 2 and 3, a more detailed study of the contextual factors that influence that impact – and hence how best to disclose incentives in order to encourage consumers to respond appropriately to a conflict of interest caused by advisor remuneration. Fourth, given the interesting findings with regard to advisor responses to incentives and the potential downside of removing incentives, further tests (perhaps involving real advisors and advice situations) would potentially shed light on the external validity of the lacklustre performance of our non-incentivised advisors.

581. In the following and final chapter of this report, we draw out some initial policy implications of the three experiments reported here. In particular we focus on key areas of regulatory concern, such as the appropriate disclosure of information to potential investors or the regulation of advised investment sales, and use the findings of these Behavioural Economics studies to illustrate how policy makers can take an "evidence-based" approach to designing consumer policy.

CHAPTER IX

CONCLUSIONS AND RECOMMENDATIONS

Retail Investment Services: Conclusions and Recommendations

1 Introduction

582. The purpose of this project was to study the decision-making processes of consumers in the market for Retail Investment Services (RIS). The objectives of the study were twofold: to obtain survey and experimental evidence regarding both the individual behavioural traits and the external factors most influencing consumers' decision-making in RIS, and to explore the effectiveness of different policy remedies in helping consumers make better decisions. In this final chapter we draw together some of the main findings from the evidence gathered as a result of our research, and draw some conclusions with respect to each objective. We also briefly reflect on the usefulness of experimental evidence for answering policy-relevant questions about consumer behaviour and decision-making. Finally, we make some recommendations with regard to consumer policy and future directions for policy research in the retail investment market.

583. As described in Chapter V, there are a number of features of the RIS market that may distinguish it from other markets. First, and perhaps most fundamentally, the sheer complexity of, and uncertainty associated with, investment products immediately pose the consumer substantial challenges. The difficulty is exacerbated further by the fact that many consumers are not confident with basic financial concepts and terminology. Second, most consumers will make major investment purchases, such as signing up to a savings and investment plan, life insurance policy or a company pension scheme, only infrequently. Third, insofar as feedback is ever available about whether the consumer has made a good or poor choice, it is likely to be delayed and confounded with exogenous factors such as market conditions. Fourth, retail investment products are primarily sold and not bought. This is a market in which there is little independent "shopping around" by consumers, and advice is ubiquitous.

584. Perhaps as a result and according to the fourth Consumer Markets Scoreboard, retail financial services are one of the sectors characterised by substantial market malfunctioning.[184] In particular, the 2010 Scoreboard shows that the market for

[184] SEC(2010)1257 "The Consumer Markets Scoreboard" 4th Edition – October 2010

"investments, pensions and securities" ranks worst out of fifty consumer markets for overall market performance. According to consumers with recent purchasing experience, it ranks worst for ease of comparing products and services sold by different suppliers, worst in trust that suppliers will respect consumer protection rules, fourth worst in experiencing problems, and worst for overall satisfaction. The inability of consumers to fully benefit from this market may in part be due to limited financial literacy or asymmetric information, but it may also be directly related to instincts driving consumers towards choices which are inconsistent with their long-term preferences. The findings of our research, reported in the previous chapters, directly address some of the root causes of these issues.

585. We begin by considering the various stages of the purchase decision process followed by a typical retail investor and describe some of the key findings from our review phase (a review of the Behavioural Economics (BE) literature, a review of the retail investment market, and an online consumer survey) and our behavioural experiments, which shed light on consumers' decision-making at each stage. We follow FSA (2008) in distinguishing between information seeking, regulated advice, purchase choice, and post-sales experience.[185] We then summarise the main behavioural traits that seem to drive consumer behaviour in the retail investment market (often due to the external market features described above), before outlining our experimental evidence on the effectiveness of different policy remedies.

2 Retail Investment Decision Process

2.1 Information Seeking

586. In our review of the BE literature, prior surveys indicated that many retail investors do little or no searching for information, nor do they shop around for the best deal. This was borne out in our online survey: only 33% of investors compare investments from more than one provider or consider more than one product from a single provider. Fewer than 30% of investors shop around to get the best deal. One possible explanation suggested by the prior literature is that consumers - especially the younger and less-educated - often lack "financial capability", that is they lack a basic knowledge and

[185] FSA Consumer Research 76 (2008) http://www.fsa.gov.uk/pubs/consumer-research/crpr76.pdf

understanding of financial products and concepts. We have both indirect and direct evidence of this. Our online survey showed that consumers are often confused about the true nature of their investment. For example, nearly 40% of investors in stocks and shares believe - wrongly – that their initial investment is protected. In particular, investors are often uncertain whether or not they are exposed to the risks of stocks and shares, especially purchasers of pensions and structured products. Only 48% of recent investors claimed to have been very well or quite well informed about financial products before making their purchase. In Experiment 1 we observed that less educated and less numerate subjects made worse investment decisions, and furthermore that subjects who scored well on a test of applied financial literacy also tended to make better investment decisions. Thus financial capability appears to be lacking for many consumers, which directly impacts upon their ability to search for information and identify the best deal.

2.2 Regulated Advice

587. Consistent with previous surveys, we find that advice is ubiquitous in the retail investment market: about 80% of investments are made in a face-to-face setting, usually with an employee of the investment provider or a professional advisor. Furthermore, 60% of investors say their final choice of product was influenced by an advisor, while the advisor initiated the purchase on a quarter of occasions. On average, investors speak to 1.4 financial professionals and the main advisor is twice as likely to be an employee of an investment provider (51% of purchases) than a professional financial advisor (25% of purchases). In general, participants in our online survey have little trust in financial institutions: fewer than 20% of them believe that their consumer rights are adequately protected or that they can trust financial advice they may receive. However, it is striking that amongst recent RIS purchasers - despite this general mistrust - trust in the main advisor they actually consulted is high: more than 80% of purchasers completely or mostly trusted the advice they received. As most transactions take place in a face-to-face context, the personal interaction with a specific advisor thus seems to dispel most of the mistrust, rightly or wrongly. Also, as we find that trust in financial institutions and in consumer rights is higher for actual purchasers of RIS, these may themselves be important determinants of consumers' financial decisions. As noted in our review of the BE literature, generalised trust, trust in advice and trust in consumer

rights have all been found to influence people's willingness to hold risky assets. This raises the question as to whether consumers are naïvely trusting or suitably wary about the quality of advice they received.

588. The survey evidence is that consumers are often unaware of potential conflicts of interest. The majority of investors (around 80%) thought their advisor was completely independent or that the advice given was only slightly biased. While a significant proportion of purchasers recognise that financial advisors, brokers, and doorstep and telephone salespeople earn a commission on sales (and that the commission is usually not contingent on the future performance of the investment), more than 40% of purchasers either do not know about the financial incentives of their advisor, or believe that the advisor has no financial incentive to encourage purchase. This uncertainty and confusion is much higher when the main contact is with an employee of a bank, insurance company or other investment provider. 37% of these RIS purchasers did not know about the financial incentives of their advisor, and another 32% thought that the advisor had no financial incentive to encourage them to make a purchase. Conflicts of interest are often only verbally disclosed, if at all, and most investors disregard the information or do not think about it.

589. Indications of somewhat naïve trust in advice were reflected in our experimental results, particularly for online subjects. In Experiment 2, subjects tended to follow the advice they received, being strongly swayed even by "cheap talk" from an advisor with obviously-biased incentives. While disclosure of advisor incentives did influence the behaviour of subjects in some contexts - which we describe in more detail in the following discussion of policy remedies - we also found that disclosing conflicts of interest elicits a "knee-jerk" reaction, which can be harmful as well as helpful. Subjects exhibit "contrarian" behaviour in their investment choices when biased incentives are disclosed, leading to better decisions when the advisor's and advisee's interests are adversely aligned, but worse decisions when their interests are aligned. As described in the literature review, disclosing conflicts of interest may also give advisors "moral licence" to act only in their own self-interest. In our laboratory experiment we also find that direct interaction enables advisors to exert additional influence on advisees: free communication between advisor and advisee tends to mitigate the reflexive loss of trust

resulting from disclosure of a conflict of interest, although we also found evidence that communication can be used to the disadvantage of advisees.

2.3 Purchase Choice

590. Our experimental evidence suggests that people struggle to make optimal investment choices, even in very simplified investment tasks. In Experiment 1, only 56% of funds were invested optimally. Just 25% of investment decisions were made completely optimally (i.e. all funds invested in the better of two available products) and only 1.4% of subjects made all five investment choices optimally. Older, female, less educated and less numerate subjects tended to make worse decisions. We also found that investment decisions are prone to biases and framing effects. Subjects made worse investment decisions when the optimal choice was harder to understand, for example when fees were framed as percentages or when annual returns were not compounded over the duration of the investment. Furthermore, subjects were disproportionately averse to uncertainty, ambiguity and product complexity in the context of our study. In real-world decisions risk neutrality may not be the optimal position, but at the very least we can conclude that attitudes to risk and uncertainty play an important role in investment decisions and that these attitudes may not always be appropriate to the choice at hand.

591. Given the extra complexity present in real-world investment decisions (e.g. more products, with a wider range of features), it seems reasonable to assume that all these cognitive limitations and choice biases will be at least as important there. In light of the difficulties consumers face in making optimal investment choices, it is perhaps not surprising that our survey evidence suggests that they often fall back on simple, but far from optimal, heuristics. Familiarity with the chosen option was the third most-cited reason (after perceived risk and potential return) for choosing an investment, followed by recommendations from financial advisors (31%) and banks or other financial companies (26%). Indeed, 17% of purchasers stated that their choice was mostly or entirely based on their advisor's recommendation, rather than being an active choice.

2.4 Post-Sales Experience

592. While our experimental evidence does not address the post-sales experience of investors, our survey evidence shows that a significant minority of retail investors are dissatisfied with their purchase. Almost one in five (19%) of investors were unsure

whether or not they had purchased a suitable investment, while a further 8% felt their investment was unsuitable. An even larger proportion of purchasers (28%) felt their investment was performing slightly worse or much worse than expected. 15% of purchasers remained mostly or entirely unclear about how their investment worked after purchasing it. As a result, 9% of investors slightly or strongly regretted their purchase. We do not, of course, have comparative evidence from other markets but external evidence such as the EC Consumer Scoreboard suggest such problems are worse in the RIS market than in most other sectors.

2.5 Behavioural Traits Influencing Retail Investment Decisions

593. Taking this evidence as a whole, we can conclude that certain behavioural traits exert a dominant influence on consumers' investment decisions. Our focus here is on factors influencing consumers making a choice between two or more investment products, rather than on the decision of whether or not an investment is necessary, or what kind of investment would be suitable for a given set of needs and circumstances. While a strict ranking is not possible - as not all of the factors were directly pitted against each other in a single test and our evidence is drawn from both experimental and survey findings - the main behavioural factors influencing retail investment choices, in approximate order of diminishing importance, are:

1. *Cognitive limitations* – consumers struggle with even very simple investment choices, especially if older or less educated.
2. *Trust in advice* – advice is ubiquitous in the RIS market and consumers are usually (and sometimes naïvely) trusting of advice they receive.
3. *Attitudes to risk and ambiguity* – investment choices are strongly influenced by perceived risk in investment returns or product complexity.
4. *Framing effects* – cognitively-limited consumers make worse decisions when investments are framed in harder-to-understand ways.
5. *Familiarity and other heuristics* – in the absence of advice, consumers may fall back on other (inappropriate) heuristics when making a choice.

594. As already described, these behavioural traits are exacerbated by (and may be a reason for) some of the external factors in the RIS market, such as product complexity and proliferation; risk and uncertainty; lack of learning caused by delay in feedback and infrequent purchasing; and the prevalence of advice. In the following section we review our experimental evidence for the effectiveness of different policy "levers" for helping consumers make better investment decisions. We first consider remedies related to the disclosure of product information, which is particularly relevant for behavioural traits (1), (3) and (4) above. We then consider remedies related to conflicts of interest, especially those caused by advisor remuneration, which are particularly relevant for (2) above.

3 Effectiveness of Policy Remedies

3.1 Product Information

595. Given the evidence of cognitive limitations and a lack of financial capability, it is important to ask whether policy interventions could improve market outcomes for consumers by helping them make better choices, with or without the help of an advisor. The findings of Experiment 1 are strong and unambiguous: simplifying and standardising product information can significantly improve investment decisions. In particular we find that:

i. Reducing the amount of information provided and standardising the content of that information helped subjects to identify the optimal choice between similar investments. In such decisions, subjects were prone to framing effects as well as being cognitively limited and lacking in financial capability. Simplification and standardisation of product information significantly reduced the detrimental impact of these factors.

ii. Providing directly comparable pre-calculated information on the net expected value of each investment helped subjects identify the optimal choice between dissimilar investments. In such decisions (typically between product classes rather than between two or more products of the same class), subjects were prone to fall back on inappropriate heuristics such as a strong aversion to risk or an aversion to ambiguity caused by

product complexity. Enabling simple comparisons on relevant attributes reduced subjects' reliance on such heuristics.

596. Overall, these results suggest that people can be helped to make better investment choices by reducing the cognitive load of comparing complex and disparate information between products, and thus enabling them to make reasoned choices rather than relying on heuristics to guide their decisions. While it is possible that the additional complexity of real-world choices could render these remedies ineffective, the evidence of our study suggests that making improvements to the way in which product information is disclosed, at the point at which consumers are deciding between products, is an effective policy lever.[186]

597. In contrast, alternative but related policy remedies proved ineffective even in the simplified choices used in our study. Highlighting the most relevant product information by presenting it more prominently did not appear to have the same beneficial effect as standardisation or simplification. Providing additional information to subjects, such as a glossary of financial terms, advice on how to make a good decision, or "de-biasing" information, also proved ineffective. It appears that trying to make a decision simpler has more impact than trying to equip people to make a complex decision, at least at the moment when that decision is being made. Our result on the efficacy of financial education is mixed but more limited. More educated subjects, especially those who rated themselves as numerate and financially literate do indeed make better investment decisions. However, we do not know whether, or to what extent, it is possible to improve these traits through education or information campaigns. Our review of the BE literature showed that evidence on the success of financial literacy programmes is currently limited. Finally, while subjects who spent longer on their decisions made significantly better choices, the size of the effect was tiny, so we find no evidence suggesting that policy interventions intended to encourage consumers to take more time over non-advised investment choices would be effective.

[186] Importantly, policy makers must take into account that risk and return characteristics of individual products are only meaningful for consumers in the context of their overall asset allocation and risk exposure. While not directly addressed in this study, more effective dislosure of product information may therefore involve making information more personally relevant as well as simpler and more easily comparable.

3.2 Conflicts of Interest

598. Our results suggest that many consumers lack the confidence and financial sophistication required to make appropriate choices about long-term retail investment products without some interaction with a third party. Thus, the provision of advice and assistance in investment decisions can be a major contribution of the financial services industry toward helping people look after their long-term future interests. But the process of sales and advice can also be fraught with problems since there is potential for conflicts of interests between the consumer being advised and the salesperson or advisor. The advisor may, for example, be remunerated in proportion to the size of the investment taken up. They may also receive very different levels of remuneration depending on both the class of investment product chosen, and (when not tied to a particular financial services institution) the choice of the provider of this type of product. Furthermore, the use of commission payments and sales targets may incentivise advisors to encourage excessive "churn" in the financial portfolios of their clients. As we discussed in our literature survey, such conflicts of interest have been recently documented in a number of contributions. One way of attempting to address any negative impacts of such conflicts of interests is to insist that advisors and salespeople disclose their incentives explicitly to the consumer, so that the consumer can - in principle - discount such advice appropriately. However, our experimental results raise doubts that disclosure can always be relied upon to help consumers understand that the advice that they are receiving may not necessarily reflect a choice that is solely in their own best interests.

599. First, we find that the impact of disclosing conflicts of interest is context-dependent. Online subjects hardly responded at all to disclosure of advisor remuneration. Only those subjects who took more time over their decisions reacted appropriately and even then only when the disclosure was flagged in a bold red font, for the simplest of decisions. In contrast, laboratory subjects, with more time and fewer distractions, exhibited a strong reaction to the disclosure of biased incentives, showing evident mistrust of advice. Thus our study provides indirect evidence that policy interventions encouraging consumers to take more time over advised decisions (e.g. mandatory cooling-off periods) *may* enable more people to attend to and appropriately respond to

disclosed conflicts of interest. However, further and more direct testing of such policy remedies would be needed before this hypothesis could be confirmed.

600. Second, we find that full and transparent disclosure and/or a "health warning" may be necessary for people to properly understand the implications of the information being disclosed to them. Online subjects, who were only told that their advisor was paid a commission, did not react to this disclosure unless it was accompanied by a "health warning". Laboratory subjects who were told the exact details of their advisor's remuneration structure responded to disclosure without such a warning. Thus, the effectiveness of conflict of interest disclosure as a policy lever crucially depends on the precise form and content of that disclosure. People do not appear to naturally recognise conflicts of interest and respond appropriately unless the implications are clearly spelled out to them in some fashion.

601. Third, we find that disclosing conflicts of interest sometimes simply elicits a "knee-jerk" reaction that can be harmful as well as helpful. Subjects in the laboratory exhibited "contrarian" behaviour in their investment choices when biased incentives were disclosed, investing significantly less in the recommended alternative. This led to better decisions when the advisor's and advisee's interests were adversely aligned but worse decisions when their interests were aligned. Subjects lost trust even when a "biased" advisor could not deceive them. Thus, disclosing conflicts of interest risks causing consumer detriment in cases where advisor incentives and consumers' interests are somewhat aligned. Our laboratory experiment showed that free communication between advisor and advisee tended to mitigate the "knee-jerk" loss of trust resulting from disclosure of a conflict of interest. On the other hand, there was also some evidence that communication enables advisors to exploit advisees' existing biases but not to "de-bias" them. Hence, the mitigating impact of free communication may be beneficial to advisors but not to consumers.

602. Overall, while our study shows that disclosing conflicts of interest caused by advisor remuneration *can* be an effective policy lever, some care must be taken in deciding when and how it should be employed. If consumers fail to pay attention to disclosure, fail to understand the implications, or simply react reflexively without considering an

appropriate response, then disclosure would be at best ineffective and at worst detrimental to investors.[187] Any future policy intervention that involves disclosure of conflicts of interest should be carefully tested to ensure that such negative consequences are avoided or minimised. However, in cases where there is clear evidence that conflicts of interest are causing detriment to consumers, carefully-designed disclosure may be cheaper, simpler and have fewer negative consequences than alternative remedies.

603. One alternative and more direct approach to the problem of conflicts of interest between advisors and consumers is to attempt to reduce those conflicts as far as possible by prohibiting payments from product providers and thereby forcing advisors to seek payment directly from consumers. Such regulation would shift the payment mechanism for financial advice to up-front fees, rather than the current system of commission-based remuneration. Yet in our experimental setting, we find that a significant minority of people are disproportionately averse to paying an up-front fee for advice. Between twenty and thirty percent of the online subjects displayed evidence of "narrow framing" and loss aversion making them excessively averse to an up-front fee. There was no strong socio-demographic or attitudinal signature for this group of people. If this proved a reliable finding in the real-world market for advice, it could be that a significant proportion of consumers may be excluded from much needed financial advice due to these behavioural traits. Worse, it could even be that too few people would be willing to pay sufficiently large sums up front for the provision of financial advice in order to support a flourishing advice industry. Our experimental evidence cannot tell us what the real-world impact would be, but it does raise a cautionary note for policy makers considering taking such a route.[188]

4 Experimental Evidence in Policy Making

604. The present project has generated a number of insights into the mechanisms underlying the sale of retail investment products with, we have argued, considerable relevance for policy makers. It is therefore worth reflecting finally on the degree to which methods from experimental economics can, more broadly, serve as a valuable addition to the

[187] This finding confirms the results of earlier work, e.g. FTC (2007).

[188] In order to gauge the long-term implications of offering different ways to pay for information upon consumers' take-up of advice, one would need to study this both in a more natural setting and, in particular, in a setting where subjects have time to learn and become acquainted with different ways to pay for information.

policy makers' armoury of research techniques, and how experimental methods can complement other methods.

605. Any policy recommendation must be based both on a set of assumptions about how consumers and firms behave in a given market and on theories of how policy interventions will interact with this behaviour. For instance, some of our analysis deals with the conflict of interest between advisors and advised customers and how disclosure of this conflict of interest will affect consumers' reaction to advice. Policy makers must ask not only to what extent are consumers wary about such a conflict, but also which form of disclosure will trigger a reaction and will this improve efficiency. In the real world, with very few exceptions, there will be little scope to test such policies in controlled field experiments. As we discussed in more detail in Chapter V, an alternative and very valuable approach is to conduct a randomised, controlled experiment. By directly manipulating factors of interest, it is possible to test directly (and to quantify in relative terms) the potential impact of policy measures on consumer behaviour. As this study has demonstrated, such experimental evidence can be used to determine which policy remedies are more or less likely to be effective in ameliorating an identified market failure.

606. In the foundational stages of such research, such as that reported here, it is important to isolate possible causal factors precisely, and hence necessary to use stripped-down and somewhat abstract decision-making scenarios (which are fully incentivised, so that the experimental subjects' choices are implemented "for real" rather than being purely hypothetical). Subsequent experimental work with more realistic financial products and with representative samples of consumers who are in the market for retail investment products, would ideally be conducted as a second step to determine how any proposed policy interventions might be best implemented. Even without this further research, however, we believe that the experimental evidence presented in this report can be of considerable value in providing an evidence base for future policy development.

5 Recommendations and Future Directions

607. It is important to note once more that experimental evidence alone cannot justify regulatory interventions in a market, as a clear market failure must be identified with empirical real-world evidence. Furthermore, any proposed policy action to correct a

market failure should ideally undergo further testing in more realistic (but less controlled) settings in order to assess the likely real-world impact and to determine the best way in which to implement the policy details. Nonetheless, our findings do point towards promising future directions for policy making and for policy research:

i. Simplification and standardisation of product information enables consumers to make better quality investment decisions, at least in our simple choice tasks. Providing pre-calculated and directly-comparable relevant information about investments enables better choices between dissimilar options, e.g. across product classes. These principles and ideas could be applied to current and future work on information disclosure, such as the Key Investor Information (KII) document.

ii. If disclosure of conflicts of interest, such as commission payments to advisors, is mandated then further research should be conducted to determine the best form and format for disclosure. Our findings point to the need for either full disclosure or an accompanying health warning to ensure that implications of disclosure are understood. Policy makers must also be careful not to simply elicit a "knee-jerk" loss of trust in advice that may not be in consumers' best interest, especially given their limited capacity to make good decisions without the help of an advisor.

APPENDIX A

HOUSEHOLD FINANCIAL PORTFOLIOS

Austria

	Q3 2009 (€BN)	2008 (€BN)	2007 (€BN)	Notes / Source
Cash deposits	**227.5**	**219.5**	**205.3**	21
Bank or postal deposits				a
Certificates of deposit				
Mutual funds	**39.8**	**36.9**	**49.7**	
Equity funds				
Balanced funds				
Bond funds				b
Money market funds				
Flexible open-end funds				
Passive/Index funds				
Foreign funds				
Real estate funds				
Other funds				
Equities	**58.3**	**54.4**	**67.2**	
Shares of listed companies	18.1	11.3	25.4	
Shares of unlisted companies	40.2	43.1	41.7	
Foreign shares				
Fixed income securities	**43.7**	**43.2**	**38.5**	c
Other securities with >1% share	**21.3**	**19.5**	**17.9**	d
Insurances	**85.6**	**75.9**	**75.6**	
Life insurance	64.3	61.7	61.2	
Pension	21.3	14.2	14.4	
Other insurances				e
Total	**476**	**449**	**454**	

Czech Republic

	Q3 2009 (€BN)	2008 (€BN)	2007 (€BN)	Notes / Source
Cash deposits	**73.1**	**66.8**	**59.6**	15
Bank or postal deposits	72.1	66.0	59.3	A
Certificates of deposit	1.0	0.8	0.4	
Mutual funds	**7.0**	**6.5**	**9.0**	
Equity funds				
Balanced funds				
Bond funds				B
Money market funds				
Flexible open-end funds				
Passive/Index funds				
Foreign funds				
Real estate funds				
Other funds				
Equities	**20.1**	**17.9**	**17.0**	
Shares of listed companies	1.8	1.7	2.0	
Shares of unlisted companies	10.2	8.7	7.6	
Foreign shares	8.0	7.5	7.4	
Fixed income securities	**0.9**	**0.7**	**0.3**	c
Other securities with >1% share				d
Insurances	**16.5**	**16.6**	**13.6**	
Life insurance	8.7	7.8	7.5	
Pension	7.8	7.0	6.1	
Other insurances				e
Total	**118**	**108**	**100**	

France

	Q3 2009 (€BN)	2008 (€BN)	2007 (€BN)	Notes / Source
Cash deposits	**1082.9**	**1071.8**	**1023.9**	2,3
Bank or postal deposits				a
Certificates of deposit				
Mutual funds	**322.5**	**268.4**	**297.0**	2,3
Equity funds	126.4	102.5	145.7	3
Balanced funds		63.5	69.0	3
Bond funds		22.9	23.3	b,3
Money market funds	39.5	45.8	38.7	3
Flexible open-end funds				
Passive/Index funds				
Foreign funds				
Real estate funds		17.3	16.9	
Other funds		16.3	28.9	
Equities	**452.0**	**357.1**	**565.1**	2,3
Shares of listed companies	126.0	94.2	166.0	3
Shares of unlisted companies	325.9	262.9	399.1	3
Foreign shares				
Fixed income securities	**66.8**	**62.2**	**60.9**	c
Other securities with >1% share	**146.5**	**138.6**	**138.6**	d,3
Insurances	**1340.8**	**1248.7**	**1239.6**	2,3
Life insurance	-	1101.4	1099.6	3
Pension	-	147.4	140.1	3
Other insurances				e
Total	**3,411**	**3,147**	**3,325**	2,3

Germany

	Q3 2009 (€BN)	2008 (€BN)	2007 (€BN)	Notes / Source
Cash deposits	**1739.1**	**1739.1**	**1622.5**	1
Bank or postal deposits	1737.5	1737.5	1620.8	a,1
Certificates of deposit	1.6	1.6	1.7	1
Mutual funds	**497.2**	**497.2**	**545.6**	1
Equity funds				
Balanced funds				
Bond funds				b
Money market funds				
Flexible open-end funds				
Passive/Index funds				
Foreign funds				
Real estate funds				
Other funds				
Equities	**344.1**	**344.1**	**547.1**	1
Shares of listed companies	165.9	165.9	375.3	1
Shares of unlisted companies	178.2	178.2	171.8	1
Foreign shares				
Fixed income securities	**302.8**	**302.8**	**350.9**	c,1
Other securities with >1% share	**39.8**	**39.8**	**42.6**	d,1
Insurances	**1489.8**	**1489.8**	**1443.0**	1
Life insurance	1228.9	1228.9	1187.9	1
Pension	260.9	260.9	255.1	1
Other insurances				e
Total	**4,413**	**4,413**	**4,552**	1

Italy

	Q3 2009 (€BN)	2008 (€BN)	2007 (€BN)	Notes / Source
Cash deposits	**1444.1**	**1444.1**	**994.6**	9
Bank or postal deposits				a,1
Certificates of deposit				
Mutual funds	**165.3**	**165.3**	**185.9**	
Equity funds				
Balanced funds				
Bond funds				b
Money market funds				
Flexible open-end funds				
Passive/Index funds				
Foreign funds				
Real estate funds				
Other funds	36.4	36.4	-	
Equities	**721.4**	**721.4**	**880.1**	
Shares of listed companies				
Shares of unlisted companies				
Foreign shares	69.0	69.0	-	
Fixed income securities	**234.7**	**234.7**	**584.1**	c
Other securities with >1% share	**275.6**	**275.6**	**442.7**	d
Insurances	**568.8**	**568.8**	**609.9**	
Life insurance	342.3	342.3	364.3	
Pension	226.6	226.6	245.6	
Other insurances				e
Total	**3,410**	**3,410**	**3,697**	

Latvia

	Q3 2009 (€BN)	2008 (€BN)	2007 (€BN)	Notes / Source
Cash deposits	**4.1**	**4.2**	**4.4**	18,19
Bank or postal deposits	1.9	1.9	2.4	a,18
Certificates of deposit	2.2	2.3	2.0	18
Mutual funds	**0.0**	**0.3**	**0.3**	19
Equity funds				
Balanced funds				
Bond funds				b
Money market funds				
Flexible open-end funds				
Passive/Index funds				
Foreign funds				
Real estate funds				
Other funds				
Equities	**0.0**	**0.1**	**0.2**	19
Shares of listed companies				
Shares of unlisted companies				
Foreign shares				
Fixed income securities	**0.0**	**0.1**	**0.1**	c,19
Other securities with >1% share				d
Insurances				
Life insurance				
Pension	1.1	0.8	0.4	19
Other insurances				e
Total	**4**	**5**	**5**	

Netherlands

	Q3 2009 (€BN)	2008 (€BN)	2007 (€BN)	Notes / Source
Cash deposits	**339.5**	**314.3**	**297.2**	12
Bank or postal deposits	338.3	314.3	297.2	a
Certificates of deposit	1.2	55.0	147.0	
Mutual funds	**43.7**	**33.7**	**52.2**	
Equity funds				
Balanced funds				
Bond funds				b
Money market funds				
Flexible open-end funds				
Passive/Index funds				
Foreign funds				
Real estate funds				
Other funds				
Equities	**23.6**	**16.6**	**30.7**	
Shares of listed companies				
Shares of unlisted companies				
Foreign shares				
Fixed income securities	**22.8**	**26.8**	**27.3**	c
Other securities with >1% share				d
Insurances	**853.6**	**848.8**	**734.6**	
Life insurance	248.6	241.5	244.3	
Pension	605.0	607.3	490.3	
Other insurances				e
Total	**1,283**	**1,240**	**1,142**	

Poland

	Q3 2009 (€BN)	2008 (€BN)	2007 (€BN)	Notes / Source
Cash deposits	**86.3**	**79.6**	**73.5**	14
Bank or postal deposits				a
Certificates of deposit				
Mutual funds	**11.8**	**10.6**	**30.9**	
Equity funds				
Balanced funds				
Bond funds				b
Money market funds				
Flexible open-end funds				
Passive/Index funds				
Foreign funds				
Real estate funds				
Other funds				
Equities	**9.2**	**6.4**	**15.7**	
Shares of listed companies				
Shares of unlisted companies				
Foreign shares				
Fixed income securities	**3.2**	**3.3**	**3.1**	c
Other securities with >1% share	**21.2**	**21.7**	**21.6**	d
Insurances	**47.0**	**39.3**	**48.8**	
Life insurance				
Pension				
Other insurances				e
Total	**179**	**161**	**194**	

Romania

	Q3 2009 (€BN)	2008 (€BN)	2007 (€BN)	Notes / Source
Cash deposits	**29.2**	**26.3**	**24.1**	16,17
Bank or postal deposits				a
Certificates of deposit				
Mutual funds	**0.8**	**0.1**	**0.2**	17,18
Equity funds				
Balanced funds				
Bond funds				b
Money market funds				
Flexible open-end funds				
Passive/Index funds				
Foreign funds				
Real estate funds				
Other funds				
Equities	**8.0**	**5.0**	**11.0**	17 (estimation)
Shares of listed companies				
Shares of unlisted companies				
Foreign shares				
Fixed income securities	**0.3**	**0.4**	**0.3**	c
Other securities with >1% share				d
Insurances	**1.7**	**1.5**	**1.1**	17 (estimation)
Life insurance		0.8	0.8	
Pension		0.2	0.0	
Other insurances		0.4	0.3	e
Total	**40**	**33**	**37**	17 (estimation)

Average Exchange Rates EUR to RON: 2009 - 4.228; 2008 - 3.985. Source: oanda.com

Spain

	Q3 2009 (€BN)	2008 (€BN)	2007 (€BN)	Notes / Source
Cash deposits	**731.0**	**714.0**	**641.0**	10
Bank or postal deposits				a
Certificates of deposit				
Mutual funds	**138.0**	**140.0**	**196.0**	10
Equity funds		6.0	22.5	11
Balanced funds		6.5	16.1	11
Bond funds		78.1	127.0	b,11
Money market funds		23.5	0.0	11
Flexible open-end funds				
Passive/Index funds				
Foreign funds				
Real estate funds				
Other funds				
Equities	**367.0**	**395.0**	**625.0**	10
Shares of listed companies				
Shares of unlisted companies				
Foreign shares				
Fixed income securities	**47.0**	**44.0**	**49.0**	c,10
Other securities with >1% share				d
Insurances	**255.0**	**250.0**	**258.0**	10
Life insurance		115.2	118.3	11
Pension		106.4	106.4	11
Other insurances				e
Total	**1,538**	**1,543**	**1,769**	

Sweden

	Q3 2009 (€BN)	2008 (€BN)	2007 (€BN)	Notes / Source
Cash deposits	**96.8**	**92.8**	**85.8**	13
Bank or postal deposits				a
Certificates of deposit				
Mutual funds	**41.0**	**32.0**	**49.4**	
Equity funds	26.2	18.7	33.1	
Balanced funds	2.0	2.4	1.7	
Bond funds				b
Money market funds				
Flexible open-end funds				
Passive/Index funds				
Foreign funds	5.3	5.3	7.1	
Real estate funds				
Other funds	7.4	5.7	7.5	
Equities	**53.3**	**36.8**	**59.1**	
Shares of listed companies	47.8	32.2	52.5	
Shares of unlisted companies				
Foreign shares	5.6	4.6	6.6	
Fixed income securities	**17.0**	**16.4**	**16.9**	c
Other securities with >1% share				d
Insurances				
Life insurance	81.8	66.6	77.6	
Pension	37.6	26.6	34.6	
Other insurances	119.5	107.2	105.7	e
Total	**208**	**178**	**211**	

United Kingdom

	Q3 2009 (€BN)	2008 (€BN)	2007 (€BN)	Notes / Source
Cash deposits	**1323.3**	**1480.8**	**1277.9**	4,5,6
Bank or postal deposits	1323.3	1480.9	1277.9	a,4
Certificates of deposit				
Mutual funds	**114.9**	**96.8**	**244.6**	
Equity funds				
Balanced funds				
Bond funds				b
Money market funds				
Flexible open-end funds				
Passive/Index funds				
Foreign funds				
Real estate funds				
Other funds				
Equities	**487.1**	**411.8**	**624.6**	4,5,6
Shares of listed companies	171.1	150.2	269.4	
Shares of unlisted companies	219.0	158.8	235.4	
Foreign shares	96.9	102.9	119.8	
Fixed income securities	**27.3**	**44.2**	**48.5**	c,4,5,6
Other securities with >1% share				d
Insurances	**2431.9**	**2373.8**	**3229.2**	4,6,7
Life insurance	2373.3	2322.2	3168.5	6,7
Pension				
Other insurances				e
Total	**4,384**	**4,407**	**5,425**	4

Average Exchange Rates GBP to EUR: 2009 - 1.122; 2008 - 1.259; 2007 - 1.461. Source: oanda.com

Notes

a. Germany and Austria: includes building society savings (Bauspareinlagen)

b. Sweden: includes money-market funds

c. Germany: includes certificates

d. Includes accumulated dividends in insurance policies in Germany and Austria

e. Sweden: collective insurances; A majority of employers in Sweden have collective agreements with trade unions under which they make payments to occupational pension and insurance plans for their employees;

Sources

1. Deutsche Bundesbank: "Ergebnisse der gesamtwirtschaftlichen Finanzierungsrechnung für Deutschland", June 2009.

2. OECD: OECD Annual Statistics on Households' Assets, http://stats.oecd.org/Index.aspx?DataSetCode=7HA

3. Banque de France: Quarterly financial accounts France, http://www.banque-france.fr/gb/stat_conjoncture/telechar/comptefi/2009_T3_france_tableaux_comptes_financiers-france.pdf

4. Office for National Statistics: Financial Statistics No 573 February 2010, London

5. Japan Post Bank: Business Overview: Household Financial Assets, 31.03.2009, http://www.jp-bank.japanpost.jp/en/aboutus/pdf/en2009_05.pdf

6. Eurostat: Datenbank "Vermögensbilanz", http://epp.eurostat.ec.europa.eu/portal/page/portal/financial_accounts/data/database

7. Oxera: Retail Distribution Review Proposals: Impact on market structure and competition, Oxford 2009, http://www.fsa.gov.uk/pubs/other/oxera_rdr.pdf

8. IFSL Research: Banking 2010, London, http://www.ifsl.org.uk/output/ReportItem.aspx?NewsID=29

9. Bank of Italy: Annual reports 2009, 2008

10. Banco de Espana: Boletín económico (2010): Evolución de la cartera financiera de los hogares en el contexto de la crisis

11. OECD Database: Households' financial and non-financial assets and liabilities, http://stats.oecd.org/index.aspx

12. De Nederlandsche Bank, "DNB-enquête 2009", May 2009.

13. Statistics Sweden (Statistiska Centralbyrån): Sparbarometern 2010-02-17, http://www.scb.se/Pages/ProductTables____7818.aspx

14. Analizy Online: "Oszczędności gospodarstw domowych " ("Households savings") 2.1.2010, 24.4.2009, 18.2.2008

15. Czech National Bank: Financial Accounts Statistics 2009

16. National Bank of Romania (BNR): Monthly Bulletin, December 2009

17. UniCredit Group: CEE Households' Wealth and Debt Monitor, January 2010, UniCredit Group CEE Strategic Analysis, pp. 28-29, 41

18. Bank of Latvia: Monetary Review 2-2009, 4-2008

19. Finance and Capital Markets Commission: http://www.fktk.lv/lv/statistika/jaunumi/

20. Asociatia Administratorilor de Fonduri din Romania: www.aaf.ro

21. Österreichische Nationalbank: "Geldvermögen des privaten Haushaltssektors", http://www.oenb.at/isaweb/report.do?lang=DE&report=8.3.1

APPENDIX B

ONLINE PROTOCOL FOR EXPERIMENTS 1 AND 2

PERSONAL FINANCE SURVEY 2010

[Start]

Before we begin, please answer the following questions...

a) In what year were you born?
[DROP DOWN: 1992 TO 1900]

b) How many people are there in total in your household (adults and children), including yourself?

c) Which of the following is your main country of residence:

Austria	Latvia
Belgium	Lithuania
Bulgaria	Luxembourg
Cyprus	Malta
Czech Republic	Netherlands
Denmark	Poland
Estonia	Portugal
Finland	Romania
France	Slovakia
Germany	Slovenia
Greece	Spain
Hungary	Sweden
Ireland	United Kingdom
Italy	

INTRODUCTION

Welcome to Decision Technology's Personal Finance Survey. Thank you for volunteering to take part in this survey. For many questions there is no right or wrong answer and you are free to choose whatever answer you feel is most appropriate. Please read all the information carefully and answer the questions accurately and honestly. The survey includes a brief money quiz, where you can test your knowledge of finance and investments. You can find out how you scored and the correct answers at the end of the survey.

In addition to your usual incentive for completing the survey, you will have the chance to earn up to X extra *MarketPoints* as a bonus. The number of points you earn will depend upon your performance in some simple investment tasks.

Please do not use your browser's refresh, back or forward buttons. Please complete the survey in one sitting. The survey should take approximately 20 minutes to complete.

In some sections of the survey we will ask questions about your personal finances. Your answers are completely confidential and your personal details will not be shared with any third parties. All results will be reported in an aggregated and anonymous format.

[Begin]

PART 1 – Investment Decisions

In this part of the survey you will be asked to make a series of five investment decisions. You may potentially earn extra *MarketPoints* based on your performance.

For each decision you will be presented with a choice of two investment products, and given [AMOUNT1] to invest. Imagine that you are investing your own money in these products, and you can choose to divide the amount between the two products in any way you like. For example you may choose to divide the money evenly between the two, or put more money into one investment, or put all your money into one and none into the other.

You will be given some basic information about the investments. Each will be described in terms of their annual returns and any fees you might have to pay. All of the products represent five year investments, and your final return will be calculated by simulating a five year period. For example, if you invest [AMOUNT1] in a product with a fixed annual return of 10%, the amount you end up with will be [AMOUNT1] x 110% x 110% x 110% x 110% x 110% = [AMOUNT2]

In addition to your usual MarketPoints reward of XXX, you will be paid a bonus dependent upon the returns your chosen investments make. For every $1 you make you will receive an extra YYY MarketPoints. For example, if your [AMOUNT1] investment is worth [AMOUNT3] at the end of the 5 years, you will have made [AMOUNT 3 – AMOUNT 1] and earned a bonus of 20*YYY MarketPoints.

There will be some products with fixed annual returns and some products where the returns are more risky e.g. a stock market investment. This riskiness will be simulated by randomly drawing from a list of historical returns from the US stock market, specifically the return for each of the five years will be drawn randomly from the list of annual returns from the Dow Jones index between 1900 and 2000. So year 1 may have a return of 15% (as seen in 1909), year 2 a return of -4% (as seen in 1984), etc.

The average annual return for the Dow Jones in this period was +7.6%.

[Continue]

Choice X of 5

You have [AMOUNT1] to invest and must choose how to allocate it between the following products:

5 Year Investment A	**5 Year Investment B**
[MONEY IMAGE]	[MONEY IMAGE]
3 BULLET POINTS	3 BULLET POINTS

How much would you like to invest in each product? Please enter a number between 0 and [AMOUNT1] in the boxes below, so that the total investment sums to [AMOUNT1]

Investment A: $ [TEXT BOX] Investment B: $ [TEXT BOX]

You currently have $LLL left to invest. Divide all the money between the investments before proceeding.

[Continue]

We will let you know how well your investments performed at the end of the survey. First, please answer the following questions about the choices you just made:

How did you feel about the decisions you were asked to make? Please rate how strongly you agree or disagree with the following statements.

I understood what I was being asked in each case.
I didn't really understand many of the financial terms used.
I had no idea how to calculate what the final value would be.
I understood what I was being asked but found it too difficult to calculate the right answer.
I found the calculations reasonably straight forward to make.
I am fairly confident I invested the money in the best way possible.
I am very unsure of whether I made the best choices, and guessed many answers.
I am familiar with making this type of decision.
I have never made this type of choice before.
I felt like I needed more information in order to choose the best investment.
The information provided was the most relevant for making the correct decision.

PART 2 – More Investment Decisions

In this part of the survey you will be asked to make some more investment decisions. However, this time you will only have one investment available and you must decide how much you want to invest and how much you want to keep. Imagine that you are investing your own money in these products, and you can choose to invest any of the available amount. For example you may choose to invest half the amount available, or all the amount, or not to invest anything.

You will be given some basic information about each investment. This time the likelihood that your investment is successful will depend upon the roll of a dice. Our computer will do this in a completely fair way, so that the outcome is totally random and each possible outcome has an equal chance of occurring (so the dice would be equally likely to land on 1, 2, 3, 4, 5 or 6).

You will also be able to pay for some advice, which will be information about whether or not your investment will be successful. You will need to decide whether or not it is worth paying the fee to receive this advice.

[Continue]

In this section you will be paid a bonus that depends upon the total amount you have after making each investment.

In this part of the survey we will give you "investment points", where 1 investment point = [YYY] MarketPoints.

[Continue]

Investment 1 of 5

In this investment you are given 16 points that you can invest. The investment can be profitable or a failure. For each point that you invest, you get 2 points in return if it is profitable. If it is a failure, the points that you invested are lost. As explained your remaining points will be converted to a reward at the end of this section.

The investment opportunity is profitable "2 out of 6 times". (Specifically, after you make your decision, the computer will throw a dice. The opportunity is profitable if the dice shows a 2 or lower.)

However, you now have the following choice. You can keep the 16 points and continue to the next question.

Alternatively, you can pay [PAY] points and learn whether the investment opportunity is profitable or not. Then, you can still decide whether you want to invest the remaining [16 minus PAY] points or not.

Would you rather keep the 16 points?

or

Do you want to pay [PAY] points to learn if the investment is profitable?

[Continue]

IF SUBJECT CHOOSES TO KEEP THE POINTS:

You chose not to invest. Your will find out the final amount of each investment at the end of the survey.

[Continue]

IF SUBJECT CHOOSES TO PAY:

You indicated that you would pay to learn if the investment is profitable.

[SHOW DICE]

The investment opportunity is: PROFITABLE (So each invested point will be doubled) / NOT PROFITABLE (So each invested point will be lost)

How many of your remaining [16 – PAY] points would you like to invest?

You will find out the result and your final amount for this investment at the end of the survey.

[Continue]

Investment 2 of 5

The following task is very similar to the previous one. This time you are given [XX2] points that you can invest. Again, when the investment is profitable, you can double your investment, if it is not profitable you will lose any points invested.

The investment opportunity is now profitable "[YY2] out of 6 times". (Specifically, the opportunity is profitable if the dice shows a [YY2] or lower.)

Again you can either keep the [XX2] points or pay to learn if the investment opportunity is profitable before investing. The cost is now [PAY2], after which you will have [XX2 – PAY2] left to invest.

Would you rather keep the [XX2] points?

or

Do you want to pay [PAY2] points to learn if the investment is profitable?

IF SUBJECT CHOOSES TO KEEP THE POINTS:

You chose not to invest. Your will find out the final amount of each investment at the end of the survey.

[Continue]

IF SUBJECT CHOOSES TO PAY:

You indicated that you would pay to learn if the investment is profitable.

[SHOW DICE]

The investment opportunity is: PROFITABLE (So each invested point will be doubled) / NOT PROFITABLE (So each invested point will be lost)

How many of your remaining [16 – PAY] points would you like to invest?

You will find out the result and your final amount for this investment at the end of the survey.

[Continue]

Investment 3 of 5

The next task is now much simpler. You are given 16 points.

This time, you cannot buy information. You will have to invest without knowing whether the investment opportunity is profitable or not. As in the first round the investment opportunity is profitable 2 out of 6 times. For each point that you invest, you get 2 points in return if it is profitable. If it is a failure, the points that you invested are lost.

You can now keep your 16 points. Or you can make an investment, but only after you have paid an “entry fee” of ONE point.

Do you want to keep your 16 points?

or

Do you want to pay ONE point as an entry fee and then decide to invest without further information?

IF SUBJECT CHOOSES TO KEEP THE POINTS:

You chose not to invest. You will find out the result and your final amount for this investment at the end of the survey.

[Continue]

IF SUBJECT CHOOSES TO PAY:

You indicated that you would pay one point to be able to invest without further information.

How many of your remaining 15 points would you like to invest?

You will find out the result and your final amount for this investment at the end of the survey.

[Continue]

(PAY-UP-FRONT TREATMENT)

Investment 4 of 5

Just as in the first investment, for this investment you have 16 points and the investment opportunity is profitable only "two out of 6 times".

But there is a difference. The difference is that now we have actually already rolled the dice (that determines whether the investment is a success or not). And, in a previous laboratory experiment, we have shown the outcome to an advisor. (Advisors had some training in economics and finance and were fully competent to be able to identify succesful investments).

As in the previous tasks you can buy information. But now the information will come from what the advisor has chosen to tell you. They can advise you to invest or not to invest.

[I1] The advisor was only paid a fixed participation fee

[I2] The advisor will be paid proportional to what you invest.

[I3] The advisor will be paid proportional to what you invest. Notice that this means that the advisor did not necessarily have your own investment earnings in mind when he gave his advice.

[I4] The advisor will be paid proportional to what you invest. **Notice that this means that the advisor did not necessarily have your own investment earnings in mind when he gave his advice.**

[I5] Notice that the advisor will receive a payment only when you choose to invest. He receives nothing when you choose not to invest.

You now have the following choice. You can keep the 16 points and continue with the next question. Alternatively, you can pay 1 point and learn what the advisor suggests.

Would you rather keep the 16 points?

or

Do you want to pay 1 point to obtain the advice?

IF SUBJECT CHOOSES TO KEEP THE POINTS:

You chose not to invest. You will find out the result and your final amount for this investment at the end of the survey.

[Continue]

IF SUBJECT CHOOSES TO PAY:

You indicated that you would pay to obtain advice.

The advice from the advisor is: INVEST /DON'T INVEST

How many of your remaining 15 points would you like to invest?

You will find out the result and your final amount for this investment at the end of the survey.

[Continue]

(FREE ADVICE TREATMENT)

Investment 4 of 5

Just as in the first investment, for this investment you have 16 points and the investment opportunity is profitable only "two out of 6 times".

But there is a difference. The difference is that now we have actually already rolled the dice (that determines whether the investment is a success or not). And, in a previous laboratory experiment, we have shown the outcome to an advisor. (Advisors had some training in economics and finance and were fully competent to be able to identify succesful investments).

The information you get will come from what the advisor has chosen to tell you. They can advise you to invest or not to invest.

[I1] The advisor was only paid a fixed participation fee

[I2] The advisor will be paid proportional to what you invest.

[I3] The advisor will be paid proportional to what you invest. Notice that this means that the advisor did not necessarily have your own investment earnings in mind when he gave his advice.

[I4] The advisor will be paid proportional to what you invest. **Notice that this means that the advisor did not necessarily have your own investment earnings in mind when he gave his advice.**

[I5] Notice that the advisor will receive a payment only when you choose to invest. He receives nothing when you choose not to invest.

Click "Continue" to learn what the advisor suggests and make a decision about how many points to invest.

[Continue]

The advice from the advisor is: INVEST /DON'T INVEST

How many of your 16 points would you like to invest?

You will find out the result and your final amount for this investment at the end of the survey.

[Continue]

(PAY-UP-FRONT TREATMENT)

Investment 5 of 5

For this final investment, once again you have 16 points.

However the situation is slightly more complex. Now two dice are rolled simultaneously The investment is only successful if both dice show 4 or less. So if one of or both of the dice show a 5 or 6, the investment is unsuccessful.

As in the previous investment, we have actually already rolled the two dice (that determine whether the investment is a success or not). And, in a previous laboratory experiment, we have shown the outcome to an advisor.

As in the previous tasks, you can buy information. This time an advisor, who saw the outcome of both dice, was asked to reveal one of the two dice to you. He cannot reveal two and he must reveal one. We will show you the outcome of the dice that the advisor chose to reveal.

[I1] The advisor was only paid a fixed participation fee

[I2] The advisor will be paid proportional to what you invest.

[I3] The advisor will be paid proportional to what you invest. Notice that this means that the advisor did not necessarily have your own investment earnings in mind when he gave his advice.

[I4] The advisor will be paid proportional to what you invest. **Notice that this means that the advisor did not necessarily have your own investment earnings in mind when he gave his advice.**

[I5] Notice that the advisor will receive a payment only when you choose to invest. He receives nothing when you choose not to invest.

You now have the following choice. You can keep the 16 points and continue with the next question. Alternatively, you can pay 1 point and learn the outcome of one dice from the advisor.

Would you rather keep the 16 points

or

Do you want to pay 1 point to learn the outcome of one dice.

IF SUBJECT CHOOSES TO KEEP THE POINTS:

You chose not to invest. You will find out the result and your final amount for this investment at the end of the survey.

[Continue]

IF SUBJECT CHOOSES TO PAY:

You indicated that you would pay to learn the outcome of one dice from the advisor.

The dice that the advisor shows you is a: [1/2/3/4/5/6]

(Recall that, for an investment to be successful, both dice have to show a 4 or lower.)

How many of your remaining 15 points would you like to invest?

(FREE ADVICE TREATMENT)

Investment 5 of 5

For this final investment, once again you have 16 points.

However the situation is slightly more complex. Now two dice are rolled simultaneously The investment is only successful if both dice show 4 or less. So if one of or both of the dice show a 5 or 6, the investment is unsuccessful.

As in the previous investment, we have actually already rolled the two dice (that determine whether the investment is a success or not). And, in a previous laboratory experiment, we have shown the outcome to an advisor.

This time an advisor, who saw the outcome of both dice, was asked to reveal one of the two dice to you. He cannot reveal two and he must reveal one. We will show you the outcome of the dice that the advisor chose to reveal.

[I1] The advisor was only paid a fixed participation fee

[I2] The advisor will be paid proportional to what you invest.

[I3] The advisor will be paid proportional to what you invest. Notice that this means that the advisor did not necessarily have your own investment earnings in mind when he gave his advice.

[I4] The advisor will be paid proportional to what you invest. **Notice that this means that the advisor did not necessarily have your own investment earnings in mind when he gave his advice.**

[I5] Notice that the advisor will receive a payment only when you choose to invest. He receives nothing when you choose not to invest.

Click "Continue" to learn the outcome of one of the dice and make a decision about how many points to invest.

[Continue]

The dice that the advisor shows you is a: [1/2/3/4/5/6]

(Recall that, for an investment to be successful, both dice have to show a 4 or lower.)

How many of your 16 points would you like to invest?

That is the end of this section. In the next section we will ask some short questions about you. After that we will reveal how all your investments performed, and tell you what the total bonus you have achieved is.

PART 3 - About You

1) How old are you?

2) Are you male or female?
   Male
   Female

3) How old were you when you stopped full-time education?
   12 or younger
   13, 14,…, 24
   25 or older

4) How much of your education was devoted to economics?
   A lot
   Some
   A little
   Hardly any
   None

5) How much of your education was devoted to mathematics?
   A lot
   Some
   A little
   Hardly any
   None

6) What is your annual household income before tax? (Include salaries, pensions, investments and any other source of regular income)
   [TEXT BOX]
   I would rather not say

7) What is your current employment status?
   Unemployed
   Student
   Employed Part-Time (less than 30 hours per week)
   Employed Full-Time (30 hours or more per week)
   Self-Employed or Company Owner
   Homemaker
   Retired
   Unpaid Carer
   Incapacitated through disability or illness
   Other

8) Do you currently or have you previously worked in the financial services industry?
   Yes
   No

9) How many adults (18 or over) are there in your household, including yourself?
   1 adult
   2 adults
   3 adults
   4 adults
   5 adults
   More than 5 adults

10) How many children (under 18) are there in your household?
   No Children
   1 Child
   2 Children
   3 Children
   4 Children
   5 Children
   More than 5 Children

11) Do you have any of the following financial products, either yourself or jointly with someone else? Please select all answers that apply.
   Insurance
   Bonds
   Stocks and Shares

A personal pension
Funds (e.g. investment funds, mutual funds, ETFs (exchange traded funds), etc.)
Structured products (e.g. guaranteed minimum return linked to investments)
Life insurance products that are primarily used for investment purposes

12) How would you rate your financial knowledge and expertise compared to the average person in your country?
Much better than average
A little better than average
About average
A little worse than average
Much worse than average

13) How do you see yourself: Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?
Please tick a box on the scale, where the value 0 means: 'completely unwilling to take risks' and the value 10 means: 'completely willing to take risks'

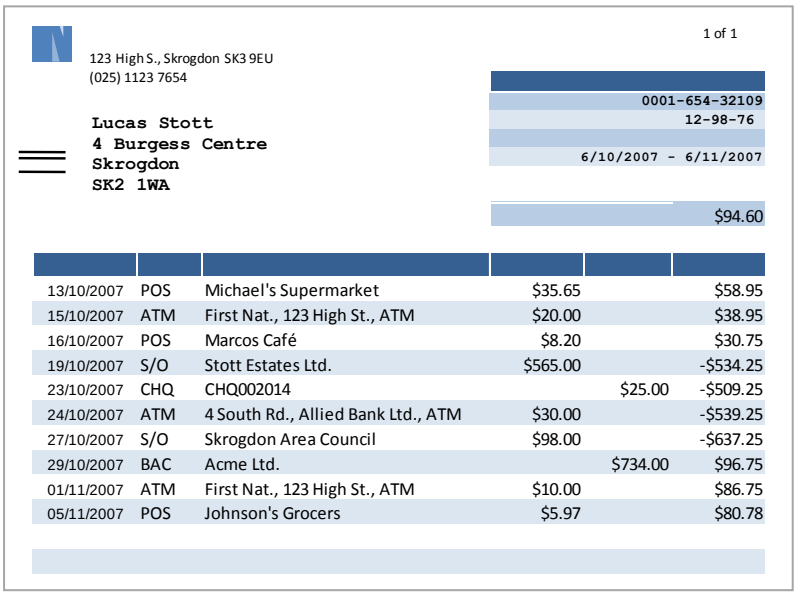
14) How would you rate your maths ability?
Please tick a box on the scale where the value 0 means 'completely helpless with mathematical problems'; and the value 10 means 'completely on top of maths problems'

15) To what extent do you agree or disagree with the following statements:
[Strongly agree / Somewhat agree / Somewhat disagree / Strongly disagree]
In general, one can trust people.
These days you cannot rely on anybody else.
When dealing with strangers it is better to be careful before you trust them.

16) Suppose that there is quite a rare disease: roughly 1/1000 people have it. The test for the disease is not perfectly accurate. If a person has the disease, then there is roughly a 99 out of 100 chance that the test will (correctly) be positive. If a person does not have the disease, then there is roughly a 1 in a 100 chance that the test will (wrongly) be positive.
If a patient gets a positive test result, what is the chance that they actually have the disease? Is it roughly:
1 in 100 chance
1 in 10 chance
1 in 2 chance
9 in 10 chance
99 in 100 chance

Money Quiz

Now is your chance to test your understanding of finance in our simple money quiz. You will be asked twelve questions concerning money and financial investments. There is a "Don't know" option for every question, but please try and guess an answer if at all possible.



1 of 1

123 High S., Skrogdon SK3 9EU
(025) 1123 7654

Lucas Stott
4 Burgess Centre
Skrogdon
SK2 1WA

0001-654-32109
12-98-76
6/10/2007 - 6/11/2007

$94.60

13/10/2007	POS	Michael's Supermarket	$35.65		$58.95
15/10/2007	ATM	First Nat., 123 High St., ATM	$20.00		$38.95
16/10/2007	POS	Marcos Café	$8.20		$30.75
19/10/2007	S/O	Stott Estates Ltd.	$565.00		-$534.25
23/10/2007	CHQ	CHQ002014		$25.00	-$509.25
24/10/2007	ATM	4 South Rd., Allied Bank Ltd., ATM	$30.00		-$539.25
27/10/2007	S/O	Skrogdon Area Council	$98.00		-$637.25
29/10/2007	BAC	Acme Ltd.		$734.00	$96.75
01/11/2007	ATM	First Nat., 123 High St., ATM	$10.00		$86.75
05/11/2007	POS	Johnson's Grocers	$5.97		$80.78

1) What is the final balance in the current account shown below?
   $94.60
   $80.78
   $5.97
   I don't know

2) Is there sufficient money in the account to cover an automatic payment of $50 that is due in 3 days' time, without going overdrawn?
   Yes
   No
   I don't know

3) If the inflation rate is 5% and the interest rate you get on your savings is 3%, will your savings have more or less buying power in a year's time?
   They will have more buying power
   They will have the same buying power
   They will have less buying power
   I don't know

4) When buying a television originally priced at $250, which is better – a cash discount of $30 or a 10% discount?
   A cash discount of $30

A 10% discount
There is no difference
I don't know

5) For a typical investment in stocks and shares, how does the risk of losing some or all of your initial investment change when you keep the investment for a longer time?
The risk gets lower the longer you keep the investment
The risk remains the same
The risk gets higher the longer you keep the investment
I don't know

6) Which of these is most suitable for a safe place to keep money that might be needed in the short-term?
Bank deposit account
Stocks and shares
I don't know

7) Where would the pension fund of a thirty year old looking to maximise their retirement income typically be invested?
Bank deposit account
Stocks and shares
I don't know

8) Do the annual returns of high-risk investments vary more or less from year-to-year than the annual returns of low-risk investments?
The annual returns vary more from year-to year
The annual returns are equally as variable
The annual returns vary less from year-to-year
I don't know

9) Do high risk investments typically offer a higher or lower average return than low risk investments?
Higher average return
The same average return
Lower average return
I don't know

10) Is it riskier to invest all your money in a single investment fund or to spread your money across a number of different funds?
The risk is identical in both cases
It is riskier to invest in just one fund
It is riskier to invest in lots of funds
I don't know

PART 1 FEEDBACK

In the first part of this survey we asked you to decide how to share money between a series of investment funds, each representing 5 year investments.

Here is how each of your investments performed over the 5 years:

	Final value	**Final return**
Investment 1		
Investment 2		
Investment 3		
Investment 4		
Investment 5		
Total		

So the total return is:

This corresponds to a bonus of RRR MarketPoints for Part 1

[Continue]

PART 2 FEEDBACK

In the second part of the survey we asked you to make a series of investments based on the roll of a dice. Here are the outcomes:

	You decided	**Amount Invested**	**Dice Result**	**Final amount**
Investment 1	Don't buy advice			16
Investment 2	Buy advice	15	1	30
Investment 3	Paid to invest	15	5	0
Investment 4	Buy advice	16	4	32
Investment 5	Buy advice	16	5 and 2	0
			Total	78

In total you have earned RR2 MarketPoints for this section.

Along with the RR1 MarketPoints in the first section that means you have earned a total bonus of RRR MarketPoints (in addition to your usual reward for completing this survey).

Click "continue" to submit your answers and earn your reward

[Continue]

APPENDIX C

EXPERIMENT 1 REGRESSION TABLES

Table C1 – Investment optimality in Task 1 with exogenous control variables

N	6003
F(20,5982)	6.91
Prob>*F*	0.0000
R-squared	0.0226
Adj. R-squared	0.0193
Root MSE	.35346

Source	***SS***	***df***	***MS***
Model	17.272	20	.86362
Residual	747.36	5982	.12493
Total	764.63	6002	.12740

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	-.04559	.00939	-4.86	0.000	-.06399	-.02720
Incentive	.00023	.00005	4.48	0.000	.00013	.00033
Pre-Calculation (A)	.02283	.01788	1.28	0.202	-.01223	.05789
Simplification (B)	-.01178	.01835	-0.64	0.521	-.04775	.02419
Standardisation (C)	-.05967	.01857	-3.21	0.001	-.09607	-.02327
Prominence (D)	-.00623	.01813	-0.34	0.731	-.04178	.02931
Financial Glossary (E)	-.02269	.01805	-1.26	0.209	-.05807	.01268
Decision Advice (F)	.00830	.01826	0.45	0.649	-.02750	.04410
De-Biasing (G)	.00136	.01798	0.08	0.940	-.03389	.03662
Age (years)	.00722	.00204	3.54	0.000	.00322	.01122
Age squared	-.00008	.00002	-3.35	0.001	-.00013	-.00003
Gender (M=0, F=1)	-.02719	.00915	-2.97	0.003	-.04513	-.00925
Age left education (years)	.00530	.00153	3.46	0.001	.00230	.00830
Germany	.01448	.01861	0.78	0.437	-.02200	.05097
Poland	-.06047	.01904	-3.18	0.002	-.09780	-.02314
France	.02734	.01842	1.48	0.138	-.00878	.06346
Italy	-.01992	.01861	-1.07	0.284	-.05640	.01655
Czech Republic	-.01616	.01840	-0.88	0.380	-.05222	.01990
Romania	-.05211	.01933	-2.70	0.007	-.09001	-.01421
Sweden	-.05850	.01863	-3.14	0.002	-.09502	-.02199
Intercept	.39324	.05192	7.57	0.000	.29146	.49503

Table C2 – Investment optimality in Task 2 with exogenous control variables

N	6003
F(20,5982)	5.29
Prob>*F*	0.0000
R-squared	0.0174
Adj. R-squared	0.0141
Root MSE	.35046

Source	***SS***	***df***	***MS***
Model	12.999	20	.64995
Residual	734.70	5982	.12282
Total	747.70	6002	.12458

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	-.06736	.01532	-4.40	0.000	-.09740	-.03733
Incentive	.00022	.00004	6.05	0.000	.00015	.00029
Pre-Calculation (A)	.02553	.01773	1.44	0.150	-.00923	.06029
Simplification (B)	-.00184	.01819	-0.10	0.920	-.03750	.03382
Standardisation (C)	-.04931	.01841	-2.68	0.007	-.08539	-.01322
Prominence (D)	.01198	.01798	0.67	0.505	-.02327	.04723
Financial Glossary (E)	.00392	.01789	0.22	0.826	-.03115	.03900
Decision Advice (F)	.01706	.01811	0.94	0.346	-.01845	.05257
De-Biasing (G)	.00074	.01784	0.04	0.967	-.03422	.03571
Age (years)	.00238	.00202	1.18	0.239	-.00159	.00635
Age squared	-.00003	.00002	-1.09	0.274	-.00007	.00002
Gender (M=0, F=1)	-.03442	.00907	-3.79	0.000	-.05220	-.01664
Age left education (years)	.00656	.00152	4.32	0.000	.00358	.00953
Germany	-.06165	.01845	-3.34	0.001	-.09782	-.02547
Poland	-.06378	.01888	-3.38	0.001	-.10079	-.02677
France	-.05335	.01827	-2.92	0.004	-.08917	-.01754
Italy	-.04606	.01845	-2.50	0.013	-.08222	-.00989
Czech Republic	-.04168	.01824	-2.28	0.022	-.07743	-.00592
Romania	-.07657	.01917	-3.99	0.000	-.11414	-.03900
Sweden	-.05449	.01847	-2.95	0.003	-.09070	-.01828
Intercept	.40221	.05156	7.80	0.000	.30114	.50328

Table C3 – Investment optimality in Task 3 with exogenous control variables

N	6003
F(20,5982)	39.37
Prob>*F*	0.0000
R-squared	0.1163
Adj. R-squared	0.1134
Root MSE	.30133

Source	***SS***	***df***	***MS***
Model	71.499	20	3.5750
Residual	543.18	5982	.09080
Total	614.68	6002	.10241

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	-.27056	.01186	-22.82	0.000	-.29380	-.24731
Incentive	.00009	.00001	7.25	0.000	.00007	.00011
Pre-Calculation (A)	.06875	.01525	4.51	0.000	.03886	.09864
Simplification (B)	-.01756	.01564	-1.12	0.262	-.04822	.01310
Standardisation (C)	.00925	.01583	0.58	0.559	-.02179	.04029
Prominence (D)	-.01351	.01546	-0.87	0.382	-.04382	.01680
Financial Glossary (E)	.00603	.01539	0.39	0.695	-.02414	.03620
Decision Advice (F)	.01024	.01558	0.66	0.511	-.02030	.04077
De-Biasing (G)	.00230	.01533	0.15	0.881	-.02776	.03236
Age (years)	-.00033	.00174	-0.19	0.848	-.00375	.00308
Age squared	.00001	.00002	0.29	0.771	-.00003	.00005
Gender (M=0, F=1)	-.00943	.00780	-1.21	0.227	-.02472	.00586
Age left education (years)	.00041	.00130	0.31	0.755	-.00215	.00296
Germany	-.03157	.01587	-1.99	0.047	-.06268	-.00046
Poland	.00917	.01623	0.56	0.572	-.02265	.04100
France	-.01113	.01571	-0.71	0.479	-.04192	.01967
Italy	-.01584	.01586	-1.00	0.318	-.04694	.01526
Czech Republic	-.01001	.01568	-0.64	0.523	-.04075	.02074
Romania	-.00030	.01648	-0.02	0.985	-.03262	.03201
Sweden	.00481	.01588	0.30	0.762	-.02633	.03594
Intercept	.62277	.04427	14.07	0.000	.53597	.70956

Table C4 – Investment optimality in Task 4 with exogenous control variables

N	6003
F(20,5982)	8.49
Prob>*F*	0.0000
R-squared	0.0276
Adj. R-squared	0.0243
Root MSE	.35641

Source	***SS***	***df***	***MS***
Model	21.557	20	1.0779
Residual	759.90	5982	.12703
Total	781.46	6002	.13020

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	.08439	.02028	4.16	0.000	.04463	.12415
Incentive	.00003	.00006	0.41	0.679	-.00010	.00015
Pre-Calculation (A)	.01798	.01804	1.00	0.319	-.01739	.05334
Simplification (B)	-.03888	.01850	-2.10	0.036	-.07514	-.00262
Standardisation (C)	-.08423	.01873	-4.50	0.000	-.12094	-.04752
Prominence (D)	-.01796	.01829	-0.98	0.326	-.05380	.01789
Financial Glossary (E)	-.01009	.01819	-0.55	0.579	-.04575	.02558
Decision Advice (F)	.00623	.01842	0.34	0.735	-.02987	.04233
De-Biasing (G)	-.02582	.01813	-1.42	0.155	-.06137	.00973
Age (years)	-.00137	.00206	-0.67	0.505	-.00541	.00266
Age squared	.00002	.00002	0.72	0.472	-.00003	.00006
Gender (M=0, F=1)	-.01110	.00922	-1.20	0.229	-.02918	.00698
Age left education (years)	.00612	.00154	3.97	0.000	.00310	.00914
Germany	-.02247	.01877	-1.20	0.231	-.05928	.01433
Poland	-.02853	.01920	-1.49	0.137	-.06618	.00911
France	-.04148	.01858	-2.23	0.026	-.07790	-.00506
Italy	-.04602	.01876	-2.45	0.014	-.08280	-.00924
Czech Republic	-.02461	.01855	-1.33	0.185	-.06099	.01176
Romania	-.07195	.01949	-3.69	0.000	-.11016	-.03374
Sweden	.00220	.01879	0.12	0.907	-.03464	.03904
Intercept	.47969	.05247	9.14	0.000	.37683	.58255

Table C5 – Investment optimality in Task 5 with exogenous control variables

N	6003
F(20,5982)	15.72
Prob>*F*	0.0000
R-squared	0.0499
Adj. R-squared	0.0468
Root MSE	.33733

Source	***SS***	***df***	***MS***
Model	35.774	20	1.7887
Residual	680.71	5982	.11379
Total	716.48	6002	.11937

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	.14519	.00892	16.28	0.000	.12771	.16267
Incentive	.00002	.00001	1.90	0.057	.00000	.00004
Pre-Calculation (A)	.07157	.01707	4.19	0.000	.03810	.10504
Simplification (B)	.01097	.01752	0.63	0.531	-.02337	.04532
Standardisation (C)	.02613	.01772	1.47	0.140	-.00860	.06087
Prominence (D)	.01749	.01731	1.01	0.312	-.01645	.05142
Financial Glossary (E)	.01485	.01723	0.86	0.389	-.01892	.04862
Decision Advice (F)	.03836	.01743	2.20	0.028	.00418	.07254
De-Biasing (G)	.01125	.01717	0.66	0.512	-.02241	.04490
Age (years)	.00234	.00195	1.20	0.230	-.00148	.00616
Age squared	-.00003	.00002	-1.10	0.271	-.00007	.00002
Gender (M=0, F=1)	-.00208	.00873	-0.24	0.812	-.01920	.01504
Age left education (years)	.00092	.00146	0.63	0.528	-.00194	.00378
Germany	.02487	.01776	1.40	0.162	-.00995	.05970
Poland	-.00218	.01818	-0.12	0.905	-.03781	.03345
France	.02074	.01759	1.18	0.238	-.01374	.05521
Italy	.00011	.01776	0.01	0.995	-.03470	.03493
Czech Republic	-.00386	.01756	-0.22	0.826	-.03829	.03057
Romania	-.02266	.01845	-1.23	0.219	-.05883	.01351
Sweden	.01283	.01778	0.72	0.471	-.02202	.04768
Intercept	.33171	.04945	6.71	0.000	.23477	.42864

Table C6 – Investment optimality in Task 1 with all control variables

N	6003
F(26,5976)	6.82
Prob>*F*	0.0000
R-squared	0.0288
Adj. R-squared	0.0246
Root MSE	.35251

Source	***SS***	***df***	***MS***
Model	22.044	26	.84786
Residual	742.59	5976	.12426
Total	764.63	6002	.12740

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	-.04516	.00936	-4.82	0.000	-.06352	-.02681
Incentive	.00023	.00005	4.54	0.000	.00013	.00033
Pre-Calculation (A)	.02498	.01784	1.40	0.161	-.00999	.05996
Simplification (B)	-.01105	.01831	-0.60	0.546	-.04694	.02485
Standardisation (C)	-.05547	.01854	-2.99	0.003	-.09181	-.01912
Prominence (D)	-.00347	.01810	-0.19	0.848	-.03896	.03202
Financial Glossary (E)	-.02022	.01800	-1.12	0.261	-.05551	.01507
Decision Advice (F)	.00911	.01822	0.50	0.617	-.02661	.04483
De-Biasing (G)	.00339	.01794	0.19	0.850	-.03178	.03856
Age (years)	.00741	.00205	3.62	0.000	.00340	.01142
Age squared	-.00008	.00002	-3.47	0.001	-.00013	-.00004
Gender (M=0, F=1)	-.01740	.00951	-1.83	0.067	-.03605	.00125
Age left education (years)	.00350	.00156	2.24	0.025	.00043	.00656
Mathematics education	-.00319	.00436	-0.73	0.464	-.01174	.00535
Economics education	-.00095	.00551	-0.17	0.863	-.01175	.00985
Self-rated maths ability	.00726	.00258	2.81	0.005	.00220	.01233
Self-rated finance ability	.02283	.00595	3.84	0.000	.01117	.03449
Self-rated risk appetite	-.00723	.00221	-3.28	0.001	-.01156	-.00290
Financial asset holding	.00202	.00326	0.62	0.535	-.00438	.00842
Germany	.02040	.01874	1.09	0.277	-.01634	.05714
Poland	-.04713	.01923	-2.45	0.014	-.08484	-.00943
France	.04529	.01876	2.41	0.016	.00851	.08208
Italy	-.00906	.01888	-0.48	0.631	-.04606	.02795
Czech Republic	-.00739	.01849	-0.40	0.689	-.04364	.02885
Romania	-.04065	.01998	-2.03	0.042	-.07981	-.00149
Sweden	-.04583	.01890	-2.43	0.015	-.08288	-.00878
Intercept	.36266	.05503	6.59	0.000	.25477	.47054

Table C7 – Investment optimality in Task 2 with all control variables

N	6003
F(26,5976)	4.94
Prob>*F*	0.0000
R-squared	0.0210
Adj. R-squared	0.0168
Root MSE	.34998

Source	***SS***	***df***	***MS***
Model	15.734	26	.60514
Residual	731.97	5976	.12248
Total	747.70	6002	.12458

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	-.06632	.01531	-4.33	0.000	-.09633	-.03632
Incentive	.00021	.00004	5.99	0.000	.00014	.00028
Pre-Calculation (A)	.02710	.01772	1.53	0.126	-.00763	.06182
Simplification (B)	-.00121	.01817	-0.07	0.947	-.03684	.03442
Standardisation (C)	-.04653	.01840	-2.53	0.011	-.08260	-.01045
Prominence (D)	.01376	.01798	0.77	0.444	-.02148	.04900
Financial Glossary (E)	.00569	.01787	0.32	0.750	-.02935	.04073
Decision Advice (F)	.01745	.01810	0.96	0.335	-.01802	.05293
De-Biasing (G)	.00232	.01782	0.13	0.896	-.03261	.03725
Age (years)	.00248	.00203	1.22	0.223	-.00150	.00646
Age squared	-.00003	.00002	-1.18	0.238	-.00007	.00002
Gender (M=0, F=1)	-.02663	.00944	-2.82	0.005	-.04514	-.00812
Age left education (years)	.00526	.00155	3.39	0.001	.00221	.00830
Mathematics education	-.00391	.00432	-0.90	0.366	-.01239	.00457
Economics education	.00212	.00547	0.39	0.698	-.00860	.01284
Self-rated maths ability	.00507	.00256	1.98	0.048	.00004	.01009
Self-rated finance ability	.01595	.00591	2.70	0.007	.00437	.02753
Self-rated risk appetite	-.00541	.00219	-2.47	0.014	-.00971	-.00112
Financial asset holding	.00316	.00324	0.97	0.330	-.00320	.00951
Germany	-.05707	.01861	-3.07	0.002	-.09354	-.02060
Poland	-.05311	.01910	-2.78	0.005	-.09055	-.01568
France	-.03915	.01863	-2.10	0.036	-.07568	-.00262
Italy	-.03674	.01874	-1.96	0.050	-.07347	.00000
Czech Republic	-.03502	.01836	-1.91	0.056	-.07101	.00096
Romania	-.06566	.01983	-3.31	0.001	-.10454	-.02678
Sweden	-.04523	.01877	-2.41	0.016	-.08202	-.00844
Intercept	.37603	.05474	6.87	0.000	.26871	.48334

Table C8 – Investment optimality in Task 3 with all control variables

N	6003
F(26,5976)	30.66
Prob>*F*	0.0000
R-squared	0.1177
Adj. R-squared	0.1139
Root MSE	.30125

Source	***SS***	***df***	***MS***
Model	72.348	26	2.7826
Residual	542.33	5976	.09075
Total	614.68	6002	.10241

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	-.27030	.01186	-22.79	0.000	-.29355	-.24705
Incentive	.00009	.00001	7.19	0.000	.00007	.00011
Pre-Calculation (A)	.06965	.01525	4.57	0.000	.03976	.09954
Simplification (B)	-.01648	.01564	-1.05	0.292	-.04715	.01418
Standardisation (C)	.01066	.01585	0.67	0.501	-.02041	.04173
Prominence (D)	-.01259	.01547	-0.81	0.416	-.04292	.01775
Financial Glossary (E)	.00663	.01539	0.43	0.667	-.02354	.03680
Decision Advice (F)	.01070	.01558	0.69	0.492	-.01985	.04124
De-Biasing (G)	.00254	.01533	0.17	0.869	-.02753	.03260
Age (years)	-.00026	.00175	-0.15	0.881	-.00369	.00317
Age squared	.00000	.00002	0.24	0.811	-.00003	.00004
Gender (M=0, F=1)	-.00567	.00813	-0.70	0.486	-.02161	.01027
Age left education (years)	-.00018	.00134	-0.13	0.893	-.00280	.00244
Mathematics education	.00130	.00372	0.35	0.728	-.00600	.00860
Economics education	-.00254	.00471	-0.54	0.589	-.01177	.00669
Self-rated maths ability	.00620	.00221	2.81	0.005	.00188	.01053
Self-rated finance ability	-.00288	.00508	-0.57	0.571	-.01285	.00709
Self-rated risk appetite	-.00061	.00189	-0.32	0.747	-.00431	.00309
Financial asset holding	.00179	.00279	0.64	0.521	-.00368	.00726
Germany	-.03028	.01602	-1.89	0.059	-.06168	.00112
Poland	.01119	.01644	0.68	0.496	-.02103	.04342
France	-.00842	.01604	-0.53	0.600	-.03986	.02302
Italy	-.01601	.01613	-0.99	0.321	-.04764	.01561
Czech Republic	-.00958	.01580	-0.61	0.544	-.04056	.02139
Romania	-.00123	.01707	-0.07	0.942	-.03470	.03223
Sweden	.00636	.01615	0.39	0.694	-.02531	.03802
Intercept	.60257	.04706	12.81	0.000	.51032	.69481

Table C9 – Investment optimality in Task 4 with all control variables

N	6003
F(26,5976)	7.75
Prob>*F*	0.0000
R-squared	0.0326
Adj. R-squared	0.0284
Root MSE	.35567

Source	***SS***	***df***	***MS***
Model	25.486	26	.98021
Residual	755.97	5976	.12650
Total	781.46	6002	.13020

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	.08175	.02026	4.03	0.000	.04203	.12147
Incentive	.00003	.00006	0.54	0.591	-.00009	.00016
Pre-Calculation (A)	.01989	.01801	1.10	0.269	-.01541	.05520
Simplification (B)	-.03813	.01847	-2.06	0.039	-.07433	-.00192
Standardisation (C)	-.08032	.01871	-4.29	0.000	-.11699	-.04364
Prominence (D)	-.01578	.01827	-0.86	0.388	-.05159	.02004
Financial Glossary (E)	-.00802	.01816	-0.44	0.659	-.04362	.02759
Decision Advice (F)	.00676	.01839	0.37	0.713	-.02928	.04281
De-Biasing (G)	-.02422	.01810	-1.34	0.181	-.05971	.01126
Age (years)	-.00129	.00206	-0.62	0.533	-.00533	.00276
Age squared	.00002	.00002	0.64	0.522	-.00003	.00006
Gender (M=0, F=1)	-.00071	.00960	-0.07	0.941	-.01952	.01810
Age left education (years)	.00440	.00158	2.79	0.005	.00131	.00750
Mathematics education	-.00358	.00440	-0.81	0.416	-.01220	.00504
Economics education	-.00219	.00556	-0.39	0.694	-.01309	.00871
Self-rated maths ability	.00778	.00261	2.98	0.003	.00267	.01289
Self-rated finance ability	.01897	.00600	3.16	0.002	.00720	.03074
Self-rated risk appetite	-.00503	.00223	-2.26	0.024	-.00939	-.00066
Financial asset holding	.00312	.00329	0.95	0.343	-.00333	.00958
Germany	-.01631	.01892	-0.86	0.388	-.05340	.02077
Poland	-.01677	.01941	-0.86	0.388	-.05483	.02128
France	-.02476	.01893	-1.31	0.191	-.06188	.01236
Italy	-.03583	.01904	-1.88	0.060	-.07317	.00150
Czech Republic	-.01690	.01866	-0.91	0.365	-.05347	.01968
Romania	-.06214	.02015	-3.08	0.002	-.10164	-.02263
Sweden	.01230	.01908	0.64	0.519	-.02510	.04970
Intercept	.44506	.05565	8.00	0.000	.33597	.55415

Table C10 – Investment optimality in Task 5 with all control variables

N	6003
F(26,5976)	12.19
Prob>*F*	0.0000
R-squared	0.0504
Adj. R-squared	0.0462
Root MSE	.33742

Source	***SS***	***df***	***MS***
Model	36.093	26	1.3882
Residual	680.39	5976	.11385
Total	716.48	6002	.11937

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	.14538	.00892	16.29	0.000	.12789	.16287
Incentive	.00002	.00001	1.85	0.065	.00000	.00004
Pre-Calculation (A)	.07193	.01709	4.21	0.000	.03844	.10542
Simplification (B)	.01109	.01753	0.63	0.527	-.02328	.04546
Standardisation (C)	.02625	.01774	1.48	0.139	-.00854	.06103
Prominence (D)	.01789	.01733	1.03	0.302	-.01608	.05187
Financial Glossary (E)	.01529	.01724	0.89	0.375	-.01850	.04908
Decision Advice (F)	.03845	.01745	2.20	0.028	.00425	.07265
De-Biasing (G)	.01191	.01718	0.69	0.488	-.02176	.04558
Age (years)	.00243	.00196	1.24	0.214	-.00141	.00627
Age squared	-.00003	.00002	-1.16	0.248	-.00007	.00002
Gender (M=0, F=1)	-.00133	.00911	-0.15	0.884	-.01918	.01652
Age left education (years)	.00087	.00150	0.58	0.560	-.00206	.00380
Mathematics education	-.00216	.00417	-0.52	0.605	-.01033	.00602
Economics education	.00599	.00527	1.14	0.256	-.00435	.01632
Self-rated maths ability	-.00125	.00247	-0.51	0.613	-.00609	.00360
Self-rated finance ability	.00449	.00569	0.79	0.431	-.00668	.01565
Self-rated risk appetite	-.00196	.00211	-0.93	0.353	-.00610	.00218
Financial asset holding	.00018	.00312	0.06	0.954	-.00594	.00631
Germany	.02550	.01794	1.42	0.155	-.00967	.06067
Poland	.00060	.01841	0.03	0.974	-.03550	.03669
France	.02409	.01796	1.34	0.180	-.01113	.05930
Italy	.00327	.01807	0.18	0.857	-.03216	.03869
Czech Republic	-.00230	.01770	-0.13	0.897	-.03700	.03241
Romania	-.01819	.01912	-0.95	0.341	-.05568	.01929
Sweden	.01616	.01809	0.89	0.372	-.01931	.05162
Intercept	.32507	.05263	6.18	0.000	.22189	.42824

Table C11 – Investment optimality in Task 1 with simplicity dummy variables

N	6003
F(9,5993)	7.28
Prob>*F*	0.0000
R-squared	0.0108
Adj. R-squared	0.0093
Root MSE	.35526

Source	***SS***	***df***	***MS***
Model	8.2719	9	.91910
Residual	756.36	5993	.12621
Total	764.63	6002	.12740

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	-.04685	.00942	-4.97	0.000	-.06532	-.02838
Incentive	.00023	.00005	4.44	0.000	.00013	.00033
Pre-Calculation (A)	.02628	.01795	1.46	0.143	-.00891	.06148
Complex	-.05824	.01863	-3.13	0.002	-.09476	-.02171
Standardised	.04659	.01895	2.46	0.014	.00943	.08375
Prominent	.00792	.01852	0.43	0.669	-.02839	.04423
Financial Glossary (E)	-.02042	.01811	-1.13	0.260	-.05592	.01508
Decision Advice (F)	.01105	.01834	0.60	0.547	-.02491	.04700
De-Biasing (G)	.00386	.01806	0.21	0.831	-.03153	.03926
Intercept	.61273	.01487	41.22	0.000	.58359	.64187

Table C12 – Investment optimality in Task 2 with simplicity dummy variables

N	6003
F(9,5993)	6.56
Prob>*F*	0.0000
R-squared	0.0098
Adj. R-squared	0.0083
Root MSE	.35149

Source	***SS***	***df***	***MS***
Model	7.2953	9	.81059
Residual	740.41	5993	.12355
Total	747.70	6002	.12458

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	-.06735	.01536	-4.38	0.000	-.09745	-.03724
Incentive	.00022	.00004	6.09	0.000	.00015	.00029
Pre-Calculation (A)	.02599	.01776	1.46	0.143	-.00883	.06081
Complex	-.04862	.01843	-2.64	0.008	-.08475	-.01249
Standardised	.04687	.01875	2.50	0.012	.01011	.08363
Prominent	.01758	.01833	0.96	0.337	-.01834	.05351
Financial Glossary (E)	.00718	.01792	0.40	0.689	-.02795	.04230
Decision Advice (F)	.02023	.01815	1.11	0.265	-.01536	.05581
De-Biasing (G)	.00248	.01787	0.14	0.890	-.03255	.03751
Intercept	.51868	.01533	33.84	0.000	.48863	.54873

Table C13 – Investment optimality in Task 3 with simplicity dummy variables

N	6003
F(9,5993)	86.12
Prob>*F*	0.0000
R-squared	0.1145
Adj. R-squared	0.1132
Root MSE	.30136

Source	***SS***	***df***	***MS***
Model	70.394	9	7.8215
Residual	544.29	5993	.09082
Total	614.68	6002	.10241

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	-.27052	.01184	-22.84	0.000	-.29374	-.24731
Incentive	.00009	.00001	7.22	0.000	.00007	.00011
Pre-Calculation (A)	.06849	.01523	4.50	0.000	.03864	.09834
Complex	.00948	.01581	0.60	0.549	-.02151	.04048
Standardised	-.02605	.01608	-1.62	0.105	-.05758	.00548
Prominent	.00404	.01571	0.26	0.797	-.02676	.03484
Financial Glossary (E)	.00667	.01537	0.43	0.664	-.02345	.03679
Decision Advice (F)	.01077	.01556	0.69	0.489	-.01974	.04128
De-Biasing (G)	.00297	.01532	0.19	0.846	-.02706	.03299
Intercept	.61711	.01254	49.21	0.000	.59253	.64170

Table C14 – Investment optimality in Task 4 with simplicity dummy variables

N	6003
F(9,5993)	14.70
Prob>*F*	0.0000
R-squared	0.0216
Adj. R-squared	0.0201
Root MSE	.35718

Source	***SS***	***df***	***MS***
Model	16.884	9	1.8760
Residual	764.57	5993	.12758
Total	781.46	6002	.13020

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	.08722	.02030	4.30	0.000	.04743	.12701
Incentive	.00001	.00006	0.24	0.811	-.00011	.00014
Pre-Calculation (A)	.01824	.01806	1.01	0.312	-.01715	.05364
Complex	-.08473	.01874	-4.52	0.000	-.12146	-.04800
Standardised	.04549	.01907	2.39	0.017	.00810	.08288
Prominent	.02325	.01863	1.25	0.212	-.01326	.05976
Financial Glossary (E)	-.00752	.01820	-0.41	0.679	-.04321	.02816
Decision Advice (F)	.00815	.01844	0.44	0.659	-.02800	.04430
De-Biasing (G)	-.02407	.01815	-1.33	0.185	-.05966	.01151
Intercept	.54981	.01527	36.00	0.000	.51987	.57974

Table C15 – Investment optimality in Task 5 with simplicity dummy variables

N	6003
F(9,5993)	33.47
Prob>*F*	0.0000
R-squared	0.0479
Adj. R-squared	0.0464
Root MSE	.33739

Source	***SS***	***df***	***MS***
Model	34.285	9	3.8095
Residual	682.20	5993	.11383
Total	716.48	6002	.11937

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Inv1 Optimal	.14546	.00891	16.32	0.000	.12799	.16294
Incentive	.00002	.00001	1.90	0.057	.00000	.00004
Pre-Calculation (A)	.07328	.01705	4.30	0.000	.03985	.10671
Complex	.02640	.01769	1.49	0.136	-.00829	.06109
Standardised	-.01541	.01800	-0.86	0.392	-.05070	.01988
Prominent	.00665	.01759	0.38	0.705	-.02784	.04114
Financial Glossary (E)	.01477	.01720	0.86	0.391	-.01895	.04849
Decision Advice (F)	.03912	.01742	2.25	0.025	.00497	.07328
De-Biasing (G)	.01215	.01715	0.71	0.479	-.02147	.04577
Intercept	.40116	.01401	28.63	0.000	.37369	.42864

Table C16 – Impact of subject characteristics on investment performance with endogenous factors included (all tasks)

N	6003
F(19,5983)	11.74
Prob>*F*	0.0000
R-squared	0.0359
Adj. R-squared	0.0329
Root MSE	.16575

Source	***SS***	***df***	***MS***
Model	6.1289	19	.32257
Residual	164.37	5983	.02747
Total	170.50	6002	.02841

Variable	**Coeff.**	**Std. Err.**	***t***	**Prob>|*t*|**	**95% Confidence Interval**	
Age (years)	.00194	.00096	2.01	0.044	.00005	.00383
Age squared	-.00002	.00001	-2.16	0.031	-.00005	.00000
Gender (M=0, F=1)	-.00770	.00448	-1.72	0.086	-.01649	.00108
Age left education (years)	.00195	.00074	2.64	0.008	.00050	.00340
Mathematics education	-.00296	.00205	-1.45	0.148	-.00697	.00105
Economics education	.00050	.00259	0.19	0.848	-.00458	.00557
Money quiz result	.00943	.00115	8.23	0.000	.00719	.01168
Self-rated maths ability	.00350	.00123	2.85	0.004	.00109	.00590
Self-rated finance ability	.00989	.00282	3.51	0.000	.00436	.01541
Self-rated risk appetite	-.00333	.00104	-3.21	0.001	-.00537	-.00130
Financial asset holding	.00177	.00154	1.15	0.248	-.00124	.00478
Study completion time (seconds)	.00000	.00000	3.34	0.001	.00000	.00000
Germany	-.00351	.00885	-0.40	0.691	-.02086	.01383
Poland	-.01845	.00904	-2.04	0.041	-.03618	-.00072
France	.01017	.00887	1.15	0.252	-.00722	.02756
Italy	-.01016	.00891	-1.14	0.254	-.02763	.00731
Czech Republic	-.01402	.00870	-1.61	0.107	-.03107	.00303
Romania	-.03011	.00945	-3.19	0.001	-.04863	-.01159
Sweden	-.00313	.00891	-0.35	0.726	-.02060	.01435
Intercept	.40330	.02546	15.84	0.000	.35340	.45320

APPENDIX D

EXPERIMENT 2 FORMAL THEORY AND REGRESSION TABLES

Tasks 1 and 2: Test for "Standard Preferences"

608. We begin by deriving a theoretical foundation for this test and providing more details. Tasks 1 and 2 were analogous. In each case, a subject was given a fixed number of investment points, a. In Task 1, we set a_1 = 16 points. This is what the subject could keep unless he decided to obtain information and then possibly invest. Each subject was first asked whether he was willing to pay z investment points to learn the outcome of an investment opportunity, where z varied randomly between treatments. In Task 1, the three treatments were z_1 = 4, 3 or 2 (treatment groups A, B and C). When the subject decided to purchase information, he had $a - z$ points left at his disposal. A priori, the investment opportunity was profitable with probability 1/3 (we refer to this as $r_1 = 1/3$). If the investment was profitable, each point invested was doubled. If it was unprofitable, each point invested was lost. When they paid for information, subjects learned with certainty whether or not the investment was profitable, and they could invest accordingly. A rational subject would be expected to invest either everything or nothing. Depending on the subject's decision regarding whether to pay for information in Task 1, the parameters for Task 2 were chosen.

609. We now provide some formal theory to explain how the parameters for Task 2 were chosen. Let us reconsider the decision problem. The subject could keep a points. Alternatively, after paying z points there is a probability of r that the investment is successful in which case he should invest all remaining points and make $2(a - z)$ points. With probability $1 - r$ the investment would be unprofitable and the subject should not invest, thereby realising $a - z$ points. Hence, the choice problem was between a sure payoff of a and a risky payoff, which represents a lottery over two outcomes: $a - z$ with probability $1 - r$ and $2(a - z)$ with probability r.

610. We consider two such problems, which can be identified as (a_1, z_1, r_1) and (a_2, z_2, r_2). A key specification is that we keep the following constant across the two problems: the lowest possible realisation, $x_L = a_1 - z_1 = a_2 - z_2$ and, thus, the highest possible realisation, $x_H = 2(a_1 - z_1) = 2(a_2 - z_2)$. Note, however, that across the two tasks, all parameters vary. The specific variation, conditional on the subject's choice in the first task, is made so as to provide a test that allows us to possibly reject the presence of "standard" preferences (thus suggesting, instead, a particularly "high" reluctance to pay up-front for information, at least for some subjects).

611. Such "standard" preferences are captured as follows. According to these preferences, a subject would, in each task, apply over the respective outcomes the same utility function, which maps monetary outcomes (points) into perceived utility.[189] We denote this utility function by $u(x)$, so that $u_L = u(x_L)$ and $u_H = u(x_H)$. Then, the subject would only pay for advice in Task 1 if:

$$r_1 u_H + (1 - r_1)u_L \geq u(a_1)$$

The right-hand side of this inequality refers to the subject's utility when information is not purchased and the subject keeps all of the a_1 points. This inequality can be rewritten as follows:

$$r_1(u_H - u_L) + u_L - u(a_1) \geq 0 \qquad (1)$$

Similarly, a subject would also chose to buy information in Task 2 only if:

$$r_2(u_H - u_L) + u_L - u(a_2) \geq 0 \qquad (2)$$

We ask when, without making further assumptions about the utility function, (2) is implied by (1). Put differently, we ask the following: when a subject chooses to pay for information in Task 1, for which parameters in Task 2 can we conclude that he *must* also choose to pay for information provided that he has "standard" preferences? Note that from (1), we have also that:

$$u_H - u_L \geq \frac{u(a_1) - u_L}{r_1},$$

so that (2) holds if:

$$r_2 \frac{u(a_1) - u_L}{r_1} + u_L - u(a_2) \geq 0$$

and, thus, if:

$$\frac{r_2}{r_1} \geq \frac{u(a_2) - u_L}{u(a_1) - u_L} = 1 + \frac{u(a_2) - u(a_1)}{u(a_1) - u_L}.$$

[189] Assuming that the same utility function applies for each task independently embodies the assumption of "narrow framing", as discussed above.

612. We next derive an *upper* boundary for the right-hand side. For this, we have to rely on the standard assumption of risk aversion. Risk aversion is equivalent to decreasing marginal utility, as captured by the second derivative $u'' < 0$. When we specify $a_2 \geq a_1$, we have that:

$$u(a_2) - u(a_1) \leq u'(a_1)(a_2 - a_1)$$

$$u(a_1) - u_L \leq u'(a_1)(z_1)$$

which uses $x_L = a_1 - z_1$. From this, we have that:

$$\frac{u(a_2) - u(a_1)}{u(a_1) - u_L} \leq \frac{u'(a_1)(a_2 - a_1)}{u'(a_1)(z_1)} = \frac{a_2 - a_1}{z_1}$$

so that condition (2) holds for sure if:

$$\frac{r_2}{r_1} \geq 1 + \frac{a_2 - a_1}{z_1}.$$

This can be written in different ways, such as $r_2 z_1 \geq r_1(a_2 - a_1 + z_1)$ or $r_2(a_1 - x_L) \geq r_1(a_2 - x_L)$ and thus:

$$a_2 - a_1 \leq z_1 \frac{r_2 - r_1}{r_1} \qquad (3)$$

613. Recall that the two tasks must also satisfy the requirement that $x_L = a_1 - z_1 = a_2 - z_2$. In summary, when the subject paid for advice and "accepted" the lottery in Task 1, and when we then choose the parameters in Task 2 so that (3) holds, then a risk-averse subject with "standard" preferences should also have "accepted" the lottery in Task 2. For the experiment, we chose a_2 to be larger than a_1.

614. Suppose that a subject did not behave in this way and chose not to pay for information in Task 2 even though they had chosen to pay for information in Task 1. Why could this be the case? Note that as $a_2 > a_1$ and as the "lowest realisation" stays the same (i.e. $x_L = a_1 - z_1 = a_2 - z_2$) then the "loss" that paying for advice (and then not investing) would generate is higher in Task 2 than in Task 1. If this loss - compared to the

reference point of not paying for advice and pocketing a_2 for sure - "looms larger" than gains, then a subject may indeed want to reject Task 2, even though he accepted Task 1. In Experiment 2, we chose the following specifications, contingent on the observation that the subject paid for information in Task 1:

Treatment group A: With (16, 4, 1/3) in Task 1 use (18, 6, 1/2) in Task 2

Treatment group B: With (16, 3, 1/3) in Task 1 use (17, 4, 1/2) in Task 2

Treatment group C: With (16, 2, 1/3) in Task 1 use (17, 3, 1/2) for Task 2

615. It remains to determine the specification for Task 2 when the subject did *not* pay for advice in Task 1. Now, the procedure is reversed: we have to find a specification for Task 2 so that a subject with "standard preferences" would again not want to pay for advice, while a subject with "reference-point-dependent preferences" might now choose to pay. In this case, we chose $a_2 < a_1$, so that it is now in Task 1 that the respective "losses" would loom larger. Following a similar procedure, we obtain the following specifications, contingent on the observation that the subject did not pay for information in Task 1:

Treatment group A: With (16, 4, 1/3) in Task 1 use (14, 2, 1/6) in Task 2

Treatment group B: With (16, 3, 1/3) in Task 1 use (15, 2, 1/6) in Task 2

Treatment group C: With (16, 2, 1/3) in Task 1 use (15, 1, 1/6) in Task 2

Overall, to test our hypothesis of an "excessive" reluctance to pay up-front for information, we are interested in the fraction of subjects who choose to pay in one task but not in the other task.

Table D1 – Consistency of decisions between Tasks 1 and 2 (marginal effects)

N	6003
Pseudo R-squared	.0102

Variable	Coeff.	*t*	Prob>|*t*|
Invested in Task 3	.0333	2.77	<0.01
Age (years)	-.00105	-0.39	
Age squared	.0000112	-0.36	
Gender (M=0, F=1)	.0340	2.76	<0.01
Age left education (years)	.000346	0.17	
Self-rated risk appetite	.00410	1.42	
Trust index	.000571	0.15	
Self-rated maths ability	-.00106	-0.35	
Self-rated finance ability	-.00229	-0.30	
Financial asset holding	.00100	0.24	
Work experience in finance	-.00943	-0.48	
Money quiz result	-.00534	-1.71	<0.1
Germany	-.0428	-1.84	<0.1
Poland	.0265	1.05	
France	-.0320	-1.36	
Italy	.0435	1.73	<0.1
Czech Republic	.0111	-0.47	
Romania	-.000448	-0.02	
Sweden	.0194	0.78	

Table D2 – Pay for Advice (Task 4; marginal effects relative to "fixed compensation")

N	2355
Pseudo R-squared	.0850

Variable	Coeff.	*t*	Prob>|*t*|
All proportional treatments	-.0413	-1.88	<0.1
Invested in Task 3	.232	11.95	<0.01
Age (years)	.00439	1.01	
Age squared	-.0000732	-1.46	
Gender (M=0, F=1)	-.00958	-0.47	
Age left education (years)	.00499	1.50	
Self-rated risk appetite	.00623	1.32	
Trust index	.00472	0.76	
Self-rated maths ability	.0127	2.56	<0.05
Self-rated finance ability	-.0242	-1.97	<0.05
Financial asset holding	.00132	0.19	
Work experience in finance	-.0559	-1.63	
Money quiz result	.0310	6.03	<0.01
Germany	.00175	0.04	
Poland	-.130	-2.81	<0.01
France	-.0209	-0.51	
Italy	-.0626	-1.46	
Czech Republic	.0100	0.25	
Romania	-.0712	-1.55	
Sweden	-.0912	-2.03	<0.05

Table D3 – Pay for Advice (Task 4; marginal effects relative to "fixed compensation")

N	2965
Pseudo R-squared	.0899

Variable	Coeff.	*t*	Prob>|*t*|
All commission treatments	-.0280	-1.32	
Invested in Task 3	.236	13.72	<0.01
Age (years)	.00122	0.32	
Age squared	-.0000349	-0.79	
Gender (M=0, F=1)	-.000975	-0.05	
Age left education (years)	.00456	1.55	
Self-rated risk appetite	.00740	1.78	<0.1
Trust index	.00299	0.55	
Self-rated maths ability	.00903	2.05	<0.05
Self-rated finance ability	-.0320	-2.94	<0.01
Financial asset holding	.00553	0.90	
Work experience in finance	-.0463	-1.53	
Money quiz result	.0351	7.70	<0.01
Germany	.00226	0.06	
Poland	-.118	-2.91	<0.01
France	-.0189	-0.52	
Italy	-.0579	-1.53	
Czech Republic	.0252	0.71	
Romania	-.0475	-1.20	
Sweden	-.0712	-1.83	<0.1

Table D4 – Pay for Advice (Task 4; marginal effects relative to "fixed compensation")

Errors clustered by country for robustness (raises standard errors).

N	2965
Pseudo R-squared	.0948

Variable	Coeff.	*t*	Prob>|*t*|
Proportional	.0138	0.33	
Proportional + Mild Warning	-.0513	-1.47	
Proportional + Strong Warning	-.0843	-2.63	<0.01
Only-if-Invested	.00805	0.24	
Invested in Task 3	.235	9.15	<0.01
Age (years)	.000935	0.36	
Age squared	-.0000313	-1.05	
Gender (M=0, F=1)	.000324	.0227	
Age left education (years)	.00491	2.00	<0.05
Self-rated risk appetite	.00706	1.95	<0.1
Trust index	.00352	0.68	
Self-rated maths ability	.00988	1.90	<0.1
Self-rated finance ability	-.0328	-3.64	<0.01
Financial asset holding	.00552	1.06	
Work experience in finance	-.0451	-1.41	
Money quiz result	.0348	9.60	<0.01
Germany	.00349	0.50	
Poland	-.119	-9.45	<0.01
France	-.0178	-1.85	<0.1
Italy	-.0569	-7.01	<0.01
Czech Republic	.0284	4.90	<0.01
Romania	-.0477	-3.42	<0.01
Sweden	-.0697	-7.65	<0.01

Table D5 – Pay for Advice (Task 4; marginal effects relative to "fixed compensation")

Errors clustered by country for robustness (raises standard errors).

N	2355
Pseudo R-squared	.0850

Variable	Coeff.	*t*	Prob>|*t*|
All proportional treatments	-.0413	-1.31	
Invested in Task 3	.232	9.07	<0.01
Age (years)	.00439	1.44	
Age squared	-.0000732	-1.92	<0.1
Gender (M=0, F=1)	-.00958	-0.45	
Age left education (years)	.00499	2.57	<0.05
Self-rated risk appetite	.00623	1.54	
Trust index	.00472	1.03	
Self-rated maths ability	.0127	1.88	<0.1
Self-rated finance ability	-.0242	-2.05	<0.05
Financial asset holding	.00132	0.27	
Work experience in finance	-.0559	-1.95	<0.1
Money quiz result	.0310	7.81	<0.01
Germany	.00175	0.25	
Poland	-.130	-13.93	<0.01
France	-.0209	-2.23	<0.05
Italy	-.0626	-8.28	<0.01
Czech Republic	.0100	1.88	<0.1
Romania	-.0712	-6.69	<0.01
Sweden	-.0912	-10.94	<0.01

Table D6 – Pay for Advice (Task 4; marginal effects relative to "fixed compensation")

Errors clustered by country for robustness (raises standard errors).

N	2965
Pseudo R-squared	.0899

Variable	Coeff.	*t*	Prob>|*t*|
All commission treatments	-.0280	-0.88	
Invested in Task 3	.236	9.50	<0.01
Age (years)	.00122	0.47	
Age squared	-.0000349	-1.19	
Gender (M=0, F=1)	-.000975	-0.07	
Age left education (years)	.00456	1.89	<0.1
Self-rated risk appetite	.00740	2.05	<0.05
Trust index	.00299	0.56	
Self-rated maths ability	.00903	1.76	<0.1
Self-rated finance ability	-.0320	-3.80	<0.01
Financial asset holding	.00553	1.05	
Work experience in finance	-.0463	-1.44	
Money quiz result	.0351	9.91	<0.01
Germany	.00226	0.32	
Poland	-.118	-9.49	<0.01
France	-.0189	-1.98	<0.05
Italy	-.0579	-6.95	<0.01
Czech Republic	.0252	4.40	<0.01
Romania	-.0475	-3.51	<0.01
Sweden	-.0712	-8.30	<0.01

Table D7 – Amount invested after free advice "Invest" (Task 4; marginal effects)

N	1439
Pseudo R-squared	.088

Variable	Coeff.	*t*	Prob>|*t*|
All proportional treatments	.0000312	0.00	
Invested in Task 3	.550	2.29	<0.05
Age (years)	0.169	3.19	<0.01
Age squared	-.00169	-2.73	<0.01
Gender (M=0, F=1)	-.576	-2.33	<0.05
Age left education (years)	-.0207	-0.51	
Self-rated risk appetite	.203	3.57	<0.01
Trust index	.160	2.13	<0.05
Self-rated maths ability	.0673	1.12	
Self-rated finance ability	.0325	0.21	
Financial asset holding	.147	1.74	<0.1
Work experience in finance	-.282	-0.73	
Money quiz result	.0994	1.63	
Germany	-.868	-1.80	<0.1
Poland	1.700	3.40	<0.01
France	.149	0.31	
Italy	.0201	0.04	
Czech Republic	1.446	3.12	<0.01
Romania	.320	0.63	
Sweden	-.134	-0.28	

Table D8 – Amount invested after free advice "Invest" (Task 4; marginal effects)

N	1868
Pseudo R-squared	.076

Variable	Coeff.	*t*	Prob>|*t*|
All commission treatments	.0501	0.16	
Invested in Task 3	.535	2.52	<0.05
Age (years)	.156	3.33	<0.01
Age squared	-.00152	-2.81	<0.01
Gender (M=0, F=1)	-.478	-2.19	<0.05
Age left education (years)	-.0177	-0.50	
Self-rated risk appetite	.233	4.64	<0.01
Trust index	.0792	1.19	
Self-rated maths ability	.0961	1.79	<0.1
Self-rated finance ability	.0287	0.21	
Financial asset holding	.114	1.53	
Work experience in finance	-.461	-1.32	
Money quiz result	.122	2.27	<0.05
Germany	-.472	-1.10	
Poland	1.554	3.56	<0.01
France	.154	0.37	
Italy	.0466	0.11	
Czech Republic	1.089	2.61	<0.01
Romania	.602	1.33	
Sweden	-.0966	-0.23	

Table D9 – Extra amount invested after free advice "Invest" (Task 4–Task 3)

N	1056
Pseudo R-squared	.034

Variable	Coeff.	*t*	Prob>|*t*|
Proportional	-.306	-0.69	
Proportional + Mild Warning	-.258	-0.57	
Proportional + Strong Warning	-.991	-2.26	<0.05
Only-if-Invested	.0361	0.08	
Gender (M=0, F=1)	.111	0.43	
Age left education (years)	.00515	0.12	
Self-rated risk appetite	.0190	0.31	
Trust index	-.0432	-0.55	
Self-rated maths ability	.121	1.82	<0.1
Self-rated finance ability	.123	0.76	
Financial asset holding	-.138	-1.56	
Work experience in finance	.429	1.01	
Money quiz result	.181	2.68	<0.01

Table D10 – Extra amount invested after free advice "Invest" (Task 4–Task 3)

N	1056
Pseudo R-squared	.029

Variable	Coeff.	*t*	Prob>|*t*|
All proportional treatments	-.555	-2.14	<0.05
Gender (M=0, F=1)	.142	0.54	
Age left education (years)	.00454	0.11	
Self-rated risk appetite	.0249	0.41	
Trust index	-.0385	-0.49	
Self-rated maths ability	.122	1.85	<0.1
Self-rated finance ability	.124	0.77	
Financial asset holding	-.142	1.60	
Work experience in finance	.380	0.89	
Money quiz result	.182	2.69	<0.01

Table D11 – Extra amount invested after free advice "Invest" (Task 4–Task 3)

N	1056
Pseudo R-squared	.026

Variable	Coeff.	*t*	Prob>|*t*|
All commission treatments	-.387	-1.02	
Gender (M=0, F=1)	.112	0.43	
Age left education (years)	.00190	0.05	
Self-rated risk appetite	.0288	0.47	
Trust index	-.0442	-0.56	
Self-rated maths ability	.122	1.84	<0.1
Self-rated finance ability	.123	0.77	
Financial asset holding	-.142	-1.60	
Work experience in finance	.324	0.76	
Money quiz result	.180	2.65	<0.01

Table D12 – Extra investment after free advice "Invest" (Task 4–Task 3; split by time)

N	478
Pseudo R-squared	.045

N	578
Pseudo R-squared	.058

	Below-median time			Above-median time		
Variable	Coeff.	*t*	Prob>|*t*|	Coeff.	*t*	Prob>|*t*|
Proportional	.0272	0.04		-.685	-1.18	
Proportional + MW	.384	0.57		-.935	-1.56	
Proportional + SW	-.260	-0.40		-1.688	-2.89	<0.01
Only-if-Invested	.461	0.69		-.573	-0.99	
Gender (M=0, F=1)	-.286	-0.73		.268	0.76	
Age left education (years)	-.0857	-1.35		.0706	1.28	
Self-rated risk appetite	-.0116	-0.12		.0314	0.39	
Trust index	-.162	-1.39		.0424	0.40	
Self-rated maths ability	.0535	0.55		.188	2.11	<0.05
Self-rated finance ability	.114	0.47		.260	1.20	
Financial asset holding	-.107	-0.82		-.172	-1.44	
Work experience in finance	.795	1.22		.121	0.22	
Money quiz result	.227	2.57	<0.05	-.177	-1.52	

Table D13 – Amount invested after advice "Invest" (Task 4; free or purchased advice)

N	3125
Pseudo R-squared	.070

Variable	Coeff.	*t*	Prob>|*t*|
Proportional	.398	1.41	
Proportional + Mild Warning	-.0828	-0.29	
Proportional + Strong Warning	-.718	-2.53	<0.05
Only-if-Invested	.0919	0.33	
Paid for advice in Task 4	.00633	3.92	<0.01
Invested in Task 3	.144	0.88	
Gender (M=0, F=1)	-.460	-2.79	<0.01
Age left education (years)	-.00531	-0.20	
Self-rated risk appetite	.207	5.36	<0.01
Trust index	.0478	0.94	
Self-rated maths ability	.0558	1.36	
Self-rated finance ability	-.0174	-0.17	
Financial asset holding	.0704	1.25	
Work experience in finance	-.420	-1.57	
Money quiz result	.113	2.63	<0.01

Table D14 – Amount invested after advice "Invest" (Task 4; free or purchased advice)

N	2385
Pseudo R-squared	.070

Variable	Coeff.	*t*	Prob>|*t*|
All proportional treatments	-.127	-0.51	
Paid for advice in Task 4	.00677	3.66	<0.01
Invested in Task 3	.163	0.87	
Gender (M=0, F=1)	-.560	-2.96	<0.01
Age left education (years)	-.0216	-0.69	
Self-rated risk appetite	.165	3.72	<0.01
Trust index	.0884	1.52	
Self-rated maths ability	.0187	0.40	
Self-rated finance ability	0.189	0.16	
Financial asset holding	.111	1.71	<0.1
Work experience in finance	-.441	-1.45	
Money quiz result	.0971	1.98	<0.05

Table D15 – Amount invested after advice "Invest" (Task 4; free or purchased advice)

N	3125
Pseudo R-squared	.063

Variable	Coeff.	*t*	Prob>|*t*|
All commission treatments	-.0699	-0.29	
Paid for advice in Task 4	.00661	4.09	<0.01
Invested in Task 3	.138	0.84	
Gender (M=0, F=1)	-.455	-2.75	<0.01
Age left education (years)	-.00719	-0.27	
Self-rated risk appetite	.211	5.42	<0.01
Trust index	.0443	0.87	
Self-rated maths ability	.0533	1.30	
Self-rated finance ability	-.0190	-0.19	
Financial asset holding	.0713	1.26	
Work experience in finance	-.437	-1.63	
Money quiz result	.115	2.69	<0.01

Table D16 – Amount invested after free advice "Don't Invest" (Task 4; marginal effects)

N	1161
Pseudo R-squared	.161

Variable	Coeff.	*t*	Prob>|*t*|
Proportional	.0317	0.09	
Proportional + Mild Warning	.575	1.66	<0.1
Proportional + Strong Warning	.387	1.03	
Only-if-Invested	-.492	-1.35	
Invested in Task 3	.281	1.13	
Gender (M=0, F=1)	-.715	-2.82	<0.01
Age left education (years)	-.0265	-0.63	
Self-rated risk appetite	.420	7.16	<0.01
Trust index	.0599	0.74	
Self-rated maths ability	.0718	1.14	
Self-rated finance ability	-.278	-1.78	<0.1
Financial asset holding	.0296	0.34	
Work experience in finance	1.168	2.97	<0.01
Money quiz result	-.524	-7.96	<0.01

Table D17 – Amount invested after free advice "Don't Invest" (Task 4; marginal effects)

N	979
Pseudo R-squared	.155

Variable	Coeff.	*t*	Prob>|*t*|
All proportional treatments	.336	1.25	
Invested in Task 3	.457	1.66	<0.1
Gender (M=0, F=1)	-.821	-2.94	<0.01
Age left education (years)	-.0427	-0.90	
Self-rated risk appetite	.425	6.60	<0.01
Trust index	.108	1.22	
Self-rated maths ability	.0359	0.53	
Self-rated finance ability	-.288	-1.69	<0.1
Financial asset holding	.0219	0.23	
Work experience in finance	1.185	2.76	<0.01
Money quiz result	-.531	-7.31	<0.01

Table D18 – Amount invested after free advice "Don't Invest" (Task 4; marginal effects)

N	1161
Pseudo R-squared	.156

Variable	Coeff.	*t*	Prob>|*t*|
All commission treatments	.138	0.55	
Invested in Task 3	.285	1.14	
Gender (M=0, F=1)	-.716	-2.83	
Age left education (years)	-.0283	-0.67	
Self-rated risk appetite	.414	7.06	<0.01
Trust index	.0606	0.75	
Self-rated maths ability	.0682	1.09	
Self-rated finance ability	-.282	-1.81	<0.1
Financial asset holding	.0370	0.43	
Work experience in finance	1.184	3.00	<0.01
Money quiz result	-.516	-7.83	<0.01

Table D19 – Paid for advice (Task 4; marginal effects split by trust)

N	2210
Pseudo R-squared	.106

N	755
Pseudo R-squared	.115

	Trust Index: Low			Trust Index: High		
Variable	**Coeff.**	***t***	**Prob>|*t*|**	**Coeff.**	***t***	**Prob>|*t*|**
Proportional	-.0146	-0.45		.0942	1.89	<0.1
Proportional + MW	-.0639	-1.89	<0.1	-.00508	-0.09	
Proportional + SW	-.0974	-2.89	<0.01	-.0401	-0.71	
Only-if-Invested	-.0164	-0.50		.0800	1.59	
Invested in Task 3	.231	11.45	<0.01	.269	7.95	<0.01
Gender (M=0, F=1)	.00806	0.39		-.0375	-1.04	
Age left education (years)	.00391	1.15		.0103	1.70	<0.1
Self-rated risk appetite	.00480	0.95		.0133	1.76	<0.1
Self-rated maths ability	.0127	2.42	<0.05	.00451	0.54	
Self-rated finance ability	-.0427	-3.34	<0.01	.00237	0.11	
Financial asset holding	.0160	2.26	<0.05	-.0289	-2.28	<0.05
Work experience in finance	-.0723	-2.01	<0.05	.0205	0.35	
Money quiz result	.0428	8.16	<0.01	.00722	0.73	

Table D20 – Amount invested after free advice "Invest" (Task 4; split by trust)

N	1344
Pseudo R-squared	.074

N	524
Pseudo R-squared	.139

	Trust Index: Low			Trust Index: High		
Variable	**Coeff.**	***t***	**Prob>|*t*|**	**Coeff.**	***t***	**Prob>|*t*|**
Proportional	.846	1.94	<0.1	-.503	-0.72	
Proportional + MW	.454	1.03		-1.383	-1.93	<0.1
Proportional + SW	-.367	-0.84		-1.129	-1.65	<0.1
Only-if-Invested	.202	0.47		-.0671	-0.10	
Invested in Task 3	.261	1.03		1.109	2.77	<0.01
Gender (M=0, F=1)	-.271	-1.04		-1.088	-2.69	<0.01
Age left education (years)	-.0215	-0.51		-.00852	-0.13	
Self-rated risk appetite	.180	2.95	<0.01	.372	4.20	<0.01
Self-rated maths ability	.129	1.95	<0.1	.00197	0.02	
Self-rated finance ability	-.0138	-.0848		.135	0.56	
Financial asset holding	.179	2.03	<0.05	-.0773	-0.55	
Work experience in finance	-.204	-0.49		-1.057	-1.63	
Money quiz result	.102	1.63		.128	1.20	

Table D21 – Paid for advice (Task 4; marginal effects split by performance in Exp 1)

N	1526	*N*	1439
Pseudo R-squared	.104	Pseudo R-squared	.0921

	Exp 1 Performance: Low			Exp 1 Performance: High		
Variable	**Coeff.**	***t***	**Prob>|*t*|**	**Coeff.**	***t***	**Prob>|*t*|**
Proportional	.0220	0.57		.0111	0.29	
Proportional + MW	-.0639	-0.81		-.0639	-1.54	
Proportional + SW	-.0865	-2.15	<0.05	-.0746	-1.80	<0.1
Only-if-Invested	.00776	0.20		.0128	0.33	
Invested in Task 3	.241	9.96	<0.01	.226	9.13	<0.01
Gender (M=0, F=1)	.0191	0.73		.0191	0.73	
Self-rated risk appetite	.00792	1.32		.00670	1.14	
Self-rated maths ability	.0125	2.03	<0.05	.00864	1.36	
Self-rated finance ability	-.0442	-2.89	<0.01	-.0185	-1.19	
Financial asset holding	.00308	0.36		.00790	0.90	
Work experience in finance	-.0125	-0.30		-.0760	-1.74	<0.1
Money quiz result	.0361	5.81	<0.01	.0347	5.15	<0.01

Table D22 – Amount invested after free advice "Invest" (Task 4; split by performance)

N	938	*N*	930
Pseudo R-squared	.090	Pseudo R-squared	.107

	Exp 1 Performance: Low			Exp 1 Performance: High		
Variable	**Coeff.**	***t***	**Prob>|*t*|**	**Coeff.**	***t***	**Prob>|*t*|**
Proportional	-.0367	-0.07		1.422	2.73	<0.01
Proportional + MW	-.596	-1.11		.677	1.30	
Proportional + SW	-.898	-1.70	<0.1	-.0930	-0.18	
Only-if-Invested	.0594	0.11		.485	0.97	
Invested in Task 3	.561	1.85	<0.1	.589	1.99	<0.05
Gender (M=0, F=1)	-.346	-1.13		-.733	-2.34	<0.05
Self-rated risk appetite	.231	3.14	<0.01	.204	2.96	<0.01
Self-rated maths ability	.141	1.84	<0.1	.0378	0.50	
Self-rated finance ability	.339	1.76	<0.1	-.251	-1.35	
Financial asset holding	-.0409	-0.38		.248	2.42	<0.05
Work experience in finance	-.594	-1.23		-.164	-0.32	
Money quiz result	.0231	0.31		.194	2.52	<0.05

Table D23 – Pay for Advice (Task 5; marginal effects relative to "fixed compensation")

N	2351
Pseudo R-squared	.0700

Variable	Coeff.	*t*	Prob>|*t*|
All proportional treatments	-.0325	-1.47	
Invested in Task 3	0.212	10.84	<0.01
Age (years)	-.00499	-1.15	
Age squared	.0000208	0.42	
Gender (M=0, F=1)	.0192	0.95	
Age left education (years)	.00512	1.55	
Self-rated risk appetite	.00617	1.31	
Trust index	-.00254	-0.41	
Self-rated maths ability	.00388	0.77	
Self-rated finance ability	-.0207	-1.68	<0.1
Financial asset holding	-.00526	-0.76	
Work experience in finance	.00606	0.19	
Money quiz result	.0302	5.89	<0.01
Germany	-.0339	-0.81	
Poland	-.127	-2.76	<0.01
France	.0195	0.50	
Italy	-.0437	-1.05	
Czech Republic	-.00384	-0.09	
Romania	-.0517	-1.15	
Sweden	-.0324	-0.76	

Table D24 – Pay for Advice (Task 5; marginal effects relative to "fixed compensation")

N	2958
Pseudo R-squared	.0788

Variable	Coeff.	*t*	Prob>|*t*|
All commission treatments	-.0265	-1.24	
Invested in Task 3	0.235	13.57	<0.01
Age (years)	-.00531	-1.37	
Age squared	.0000247	0.55	
Gender (M=0, F=1)	.000289	0.02	
Age left education (years)	.00472	1.61	
Self-rated risk appetite	.00631	1.50	
Trust index	.00140	0.26	
Self-rated maths ability	.00309	0.69	
Self-rated finance ability	-.0258	-2.35	<0.05
Financial asset holding	-.00310	-0.50	
Work experience in finance	.00275	0.10	
Money quiz result	.0298	6.50	<0.01
Germany	-.0305	-0.83	
Poland	-0.112	-2.77	<0.01
France	.0342	1.00	
Italy	-.0181	-0.50	
Czech Republic	-.00303	-0.08	
Romania	-.0321	-0.82	
Sweden	-.0219	-0.59	

Table D25 – Amount invested after free advice "bad" die (Task 5; marginal effects)

N	1308
Pseudo R-squared	.073

Variable	Coeff.	*t*	Prob>|*t*|
Proportional	.0207	0.05	
Proportional + Mild Warning	-.142	-0.35	
Proportional + Strong Warning	-.0509	-0.13	
Only-if-Invested	0.124	0.30	
Invested in Task 3	-.279	-1.05	
Age (years)	.0220	0.38	
Age squared	-.000377	-0.56	
Gender (M=0, F=1)	-.736	-2.67	<0.01
Age left education (years)	-.0441	-0.98	
Self-rated risk appetite	.252	3.89	<0.01
Trust index	.219	2.58	<0.05
Self-rated maths ability	.106	1.56	
Self-rated finance ability	.0776	0.45	
Financial asset holding	-.0747	-0.82	
Work experience in finance	-.668	-1.54	
Money quiz result	.0735	1.03	
Germany	-1.471	-2.80	<0.01
Poland	.213	0.39	
France	-.0325	-0.06	
Italy	-.258	-0.49	
Czech Republic	.719	1.36	
Romania	1.124	2.00	<0.05
Sweden	.347	0.65	

Table D26 – Amount invested after free advice "bad" die (Task 5; marginal effects)

N	1066
Pseudo R-squared	.075

Variable	Coeff.	*t*	Prob>|*t*|
All proportional treatments	-.0529	-0.17	
Invested in Task 3	-.384	-1.31	
Age (years)	.0385	0.61	
Age squared	-.000576	-0.79	
Gender (M=0, F=1)	-.680	-2.24	<0.05
Age left education (years)	-.0329	-0.64	
Self-rated risk appetite	.233	3.30	<0.01
Trust index	.176	1.89	<0.1
Self-rated maths ability	.142	1.92	<0.1
Self-rated finance ability	.0312	0.17	
Financial asset holding	.0308	0.31	
Work experience in finance	-.924	-2.01	<0.05
Money quiz result	.0691	0.86	
Germany	-1.960	-3.38	<0.01
Poland	-.685	-1.13	
France	-.109	-0.18	
Italy	-1.058	-1.78	<0.1
Czech Republic	.222	0.38	
Romania	.706	1.15	
Sweden	-.239	-0.41	

Table D27 – Amount invested after free advice "bad" die (Task 5; marginal effects)

N	1308
Pseudo R-squared	.072

Variable	Coeff.	*t*	Prob>|*t*|
All commission treatments	-.0128	-0.04	
Invested in Task 3	-.278	-1.04	
Age (years)	.0221	0.38	
Age squared	-.000375	-0.56	
Gender (M=0, F=1)	-.736	-2.68	<0.01
Age left education (years)	-.0444	-0.99	
Self-rated risk appetite	.253	3.91	<0.01
Trust index	.217	2.57	<0.05
Self-rated maths ability	.106	1.56	
Self-rated finance ability	.0782	0.46	
Financial asset holding	-.0749	-0.83	
Work experience in finance	-.673	-1.56	
Money quiz result	.0730	1.03	
Germany	-1.456	-2.78	<0.01
Poland	.223	0.41	
France	-.0130	-0.02	
Italy	-.249	-0.47	
Czech Republic	.717	1.36	
Romania	1.122	2.00	<0.05
Sweden	.354	0.67	

Table D28 – Amount invested after free advice "bad" die (Task 5; above-median time)

N	651
Pseudo R-squared	.091

Variable	Coeff.	*t*	Prob>|*t*|
Proportional	-.617	-1.09	
Proportional + Mild Warning	-.843	-1.44	
Proportional + Strong Warning	-.746	-1.29	
Only-if-Invested	-.223	-0.39	
Invested in Task 3	-.194	-0.51	
Gender (M=0, F=1)	-0.57	-1.46	
Age left education (years)	-.0405	-0.63	
Self-rated risk appetite	.261	2.93	<0.01
Trust index	.0190	0.16	
Self-rated maths ability	.217	2.18	<0.05
Self-rated finance ability	.0921	0.38	
Financial asset holding	-.181	-1.36	
Work experience in finance	-1.146	-1.92	<0.1
Money quiz result	.171	1.44	

Table D29 – Amount invested after free advice "bad" die (Task 5; above-median time)

N	519
Pseudo R-squared	.102

Variable	Coeff.	*t*	Prob>|*t*|
All proportional treatments	-.750	-1.63	
Invested in Task 3	-.589	-1.42	
Gender (M=0, F=1)	-.742	-1.71	<0.1
Age left education (years)	-.0214	-0.29	
Self-rated risk appetite	.232	2.38	<0.05
Trust index	.0116	0.09	
Self-rated maths ability	.224	2.10	<0.05
Self-rated finance ability	-.0407	-0.15	
Financial asset holding	-.100	-0.69	
Work experience in finance	-1.536	-2.40	<0.05
Money quiz result	0.200	1.47	

Table D30 – Amount invested after free advice "bad" die (Task 5; above-median time)

N	651
Pseudo R-squared	.089

Variable	Coeff.	*t*	Prob>|*t*|
All commission treatments	-.598	-1.33	
Invested in Task 3	-.203	-0.54	
Gender (M=0, F=1)	-.548	-1.41	
Age left education (years)	-.0437	-0.68	
Self-rated risk appetite	.260	2.94	<0.01
Trust index	.0233	0.20	
Self-rated maths ability	.222	2.24	<0.05
Self-rated finance ability	.0934	0.38	
Financial asset holding	-.180	-1.37	
Work experience in finance	-1.173	-1.97	<0.05
Money quiz result	.165	1.40	

Table D31 – Extra amount invested after free advice "Invest" (Task 5–Task 3)

N	749
Pseudo R-squared	.080

Variable	Coeff.	*t*	Prob>|*t*|
Proportional	-.353	-0.65	
Proportional + Mild Warning	-1.131	-2.08	<0.05
Proportional + Strong Warning	.0235	0.04	
Only-if-Invested	-.727	-1.32	
Gender (M=0, F=1)	-.230	-0.62	
Age left education (years)	.0157	0.26	
Self-rated risk appetite	.00731	0.08	
Trust index	.0853	0.76	
Self-rated maths ability	.253	2.73	<0.01
Self-rated finance ability	.0409	0.18	
Financial asset holding	-.282	-2.31	<0.05
Work experience in finance	-1.062	-1.71	<0.1
Money quiz result	.154	1.56	

Table D32 – Extra amount invested after free advice "Invest" (Task 5–Task 3)

N	604
Pseudo R-squared	.079

Variable	Coeff.	*t*	Prob>|*t*|
All proportional treatments	-.491	-1.12	
Gender (M=0, F=1)	-.230	-0.62	
Age left education (years)	.0157	0.26	
Self-rated risk appetite	.00731	0.08	
Trust index	.0853	0.76	
Self-rated maths ability	.253	2.73	<0.01
Self-rated finance ability	.0409	0.18	
Financial asset holding	-.282	-2.31	<0.05
Work experience in finance	-1.062	-1.71	<0.1
Money quiz result	.154	1.59	

Table D33 – Extra amount invested after free advice "Invest" (Task 5–Task 3)

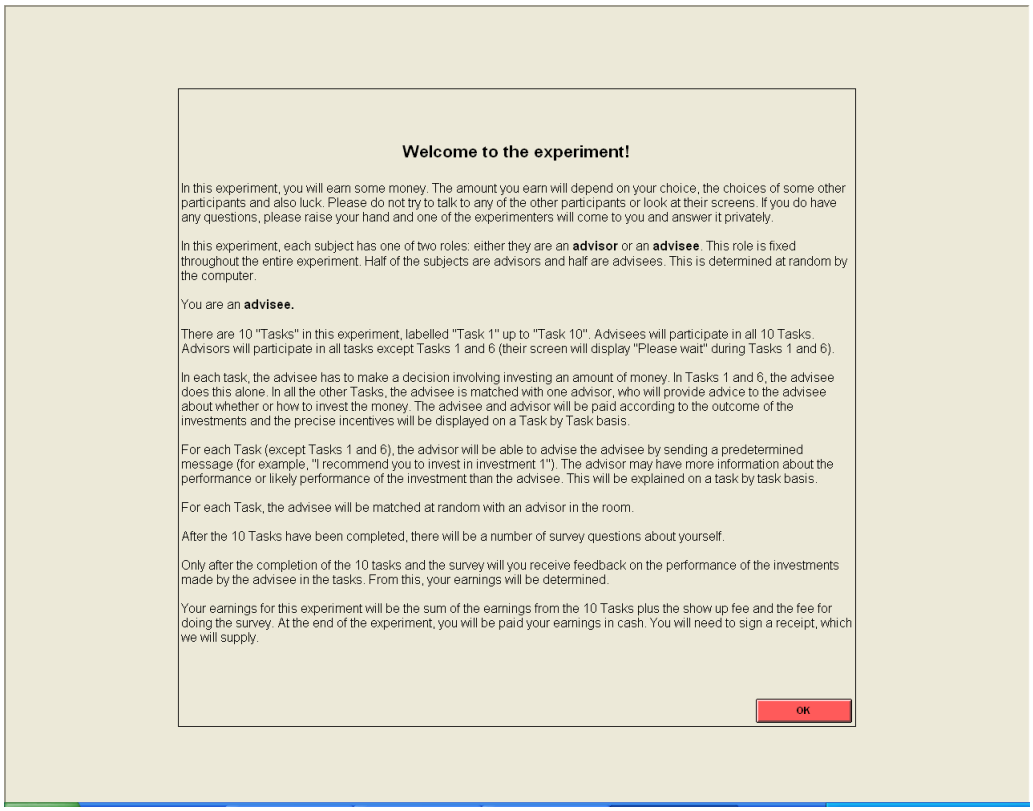
N	749
Pseudo R-squared	.074

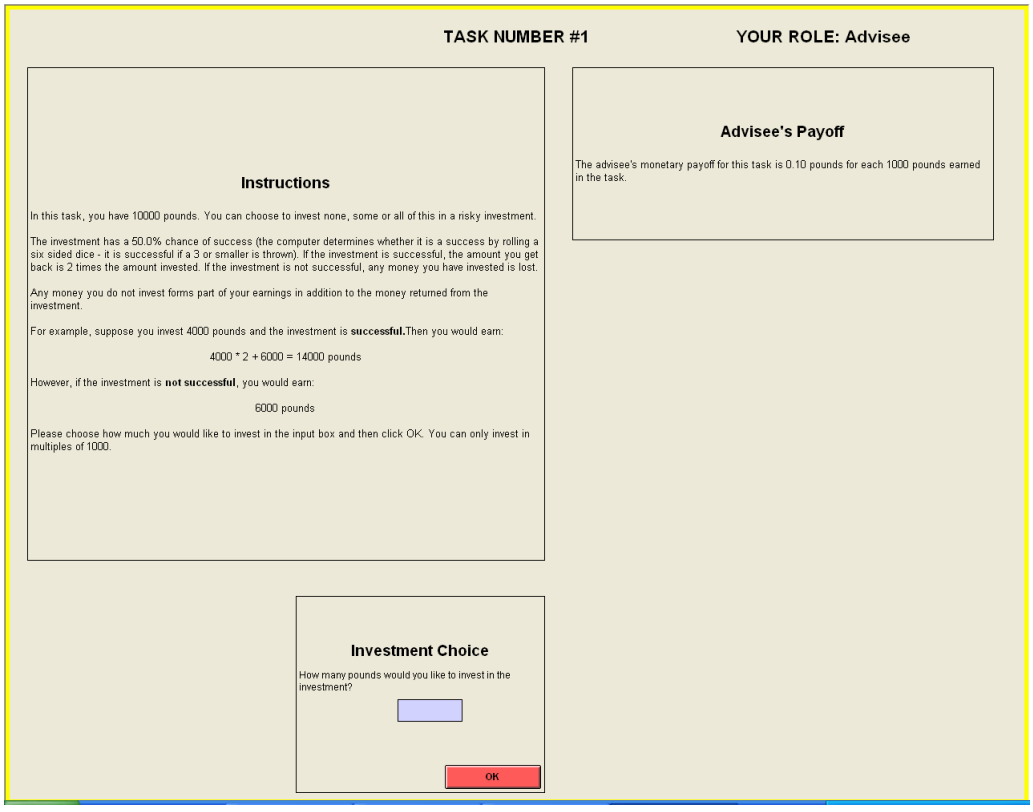
Variable	Coeff.	*t*	Prob>|*t*|
All commission treatments	-.559	-1.31	
Gender (M=0, F=1)	-.263	-0.71	
Age left education (years)	.0137	0.23	
Self-rated risk appetite	-.00771	-0.09	
Trust index	.0654	0.58	
Self-rated maths ability	.263	2.84	<0.01
Self-rated finance ability	.0590	0.26	
Financial asset holding	-.282	-2.31	<0.01
Work experience in finance	-.969	-1.57	
Money quiz result	.158	1.62	

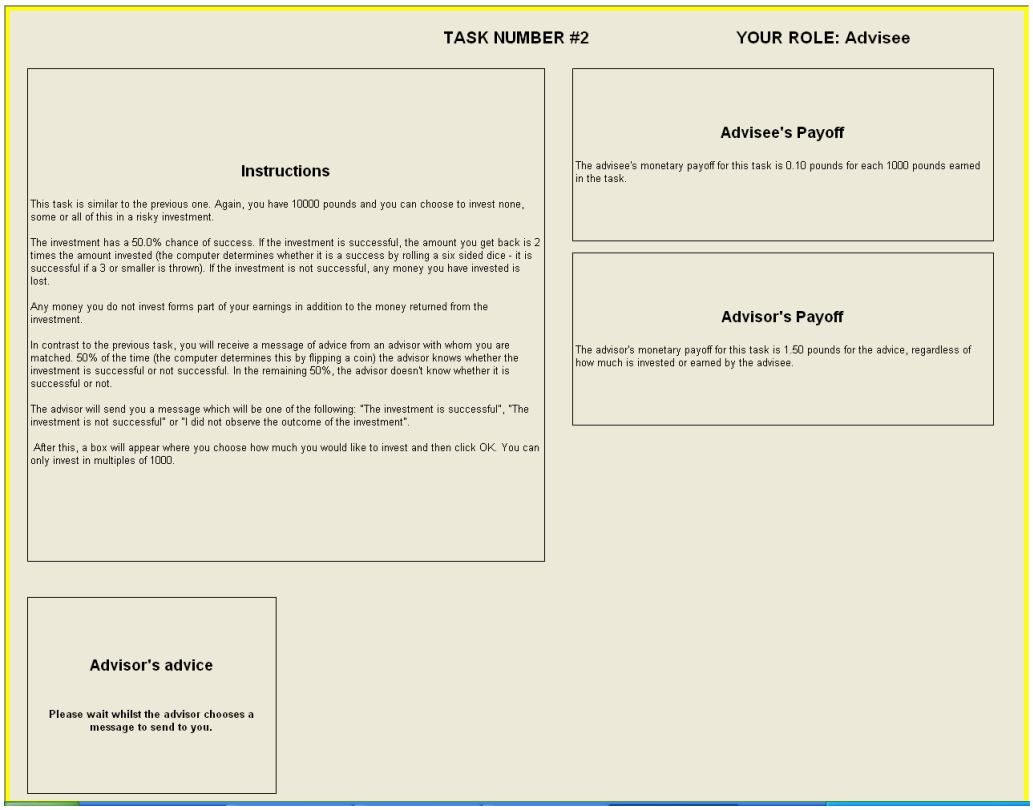
APPENDIX E

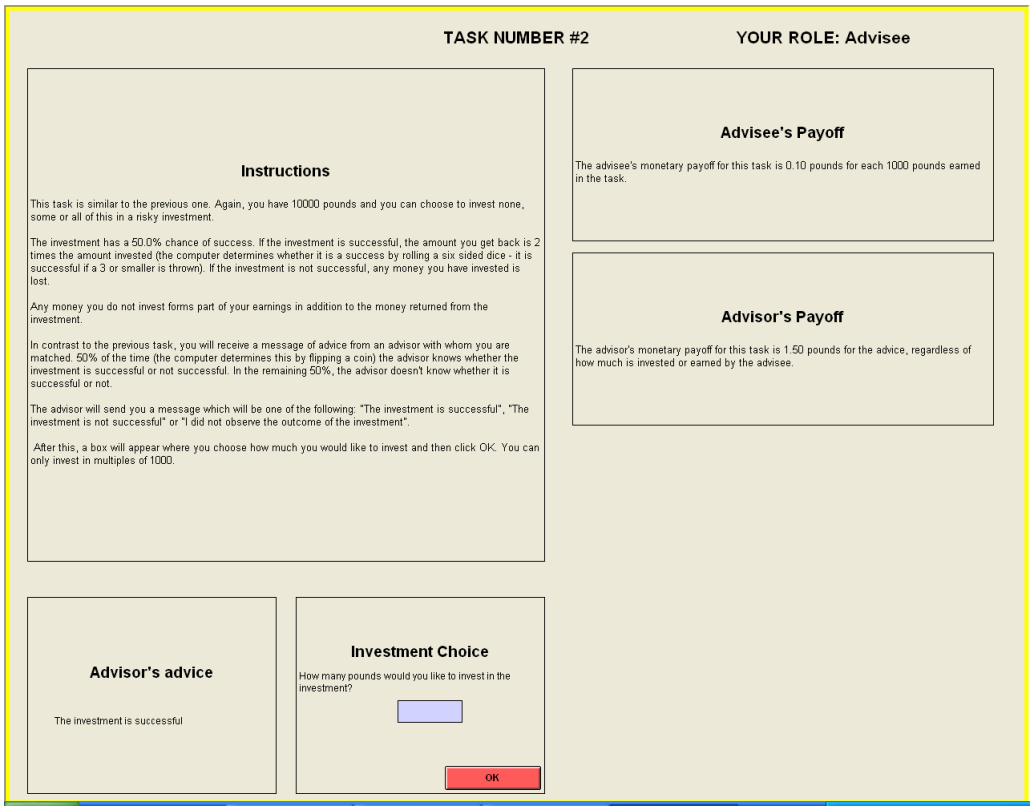
EXPERIMENT 3 PROTOCOL

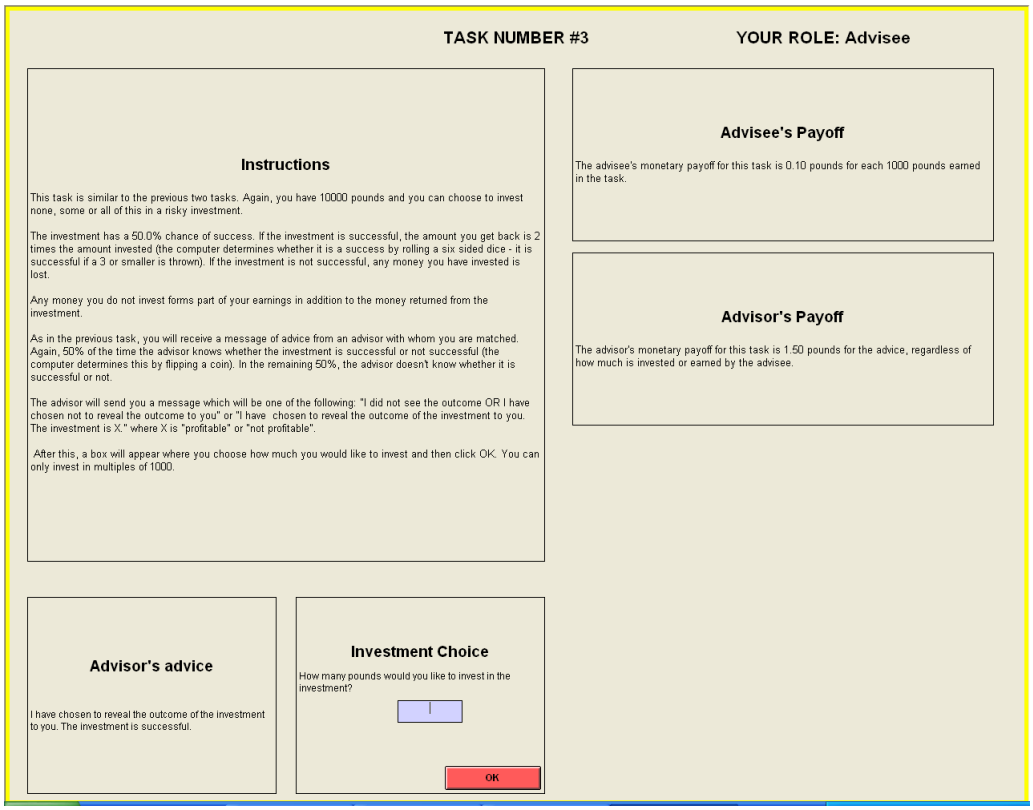
Advisee Screenshots

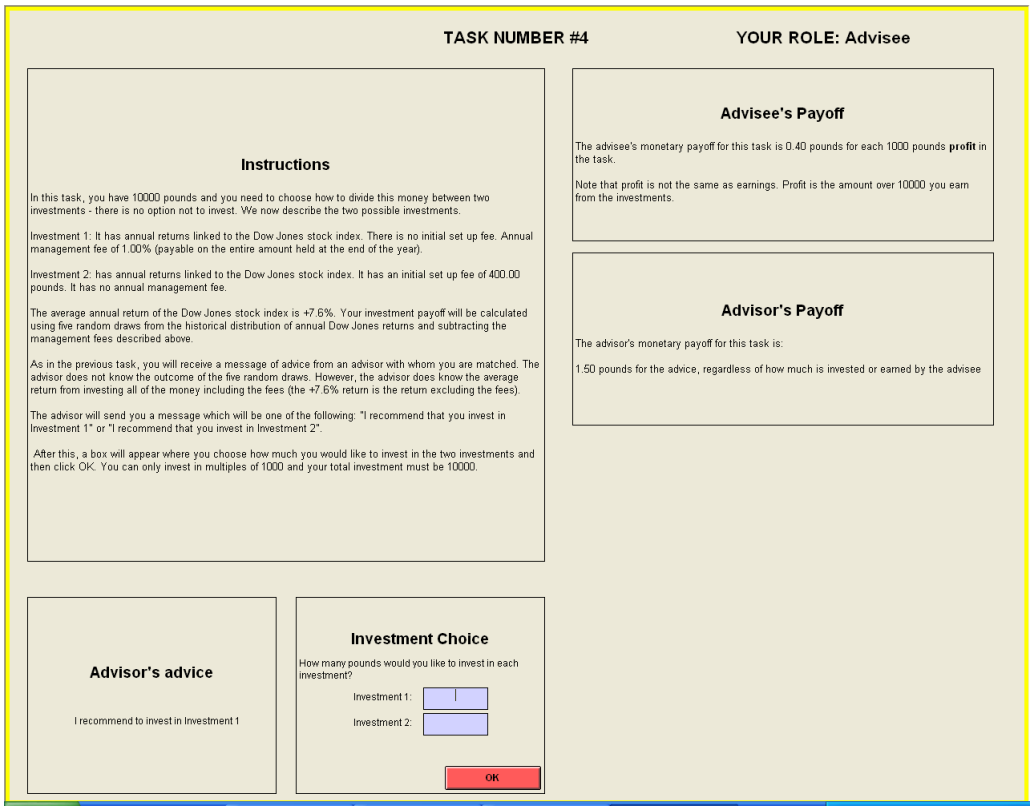


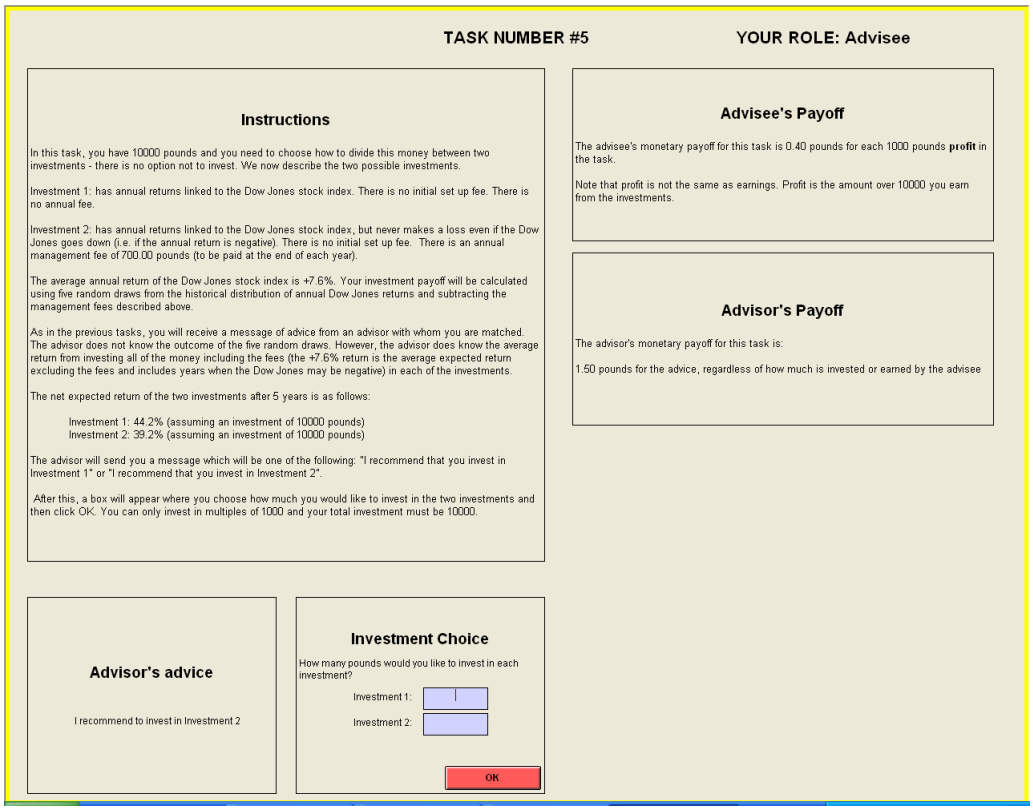


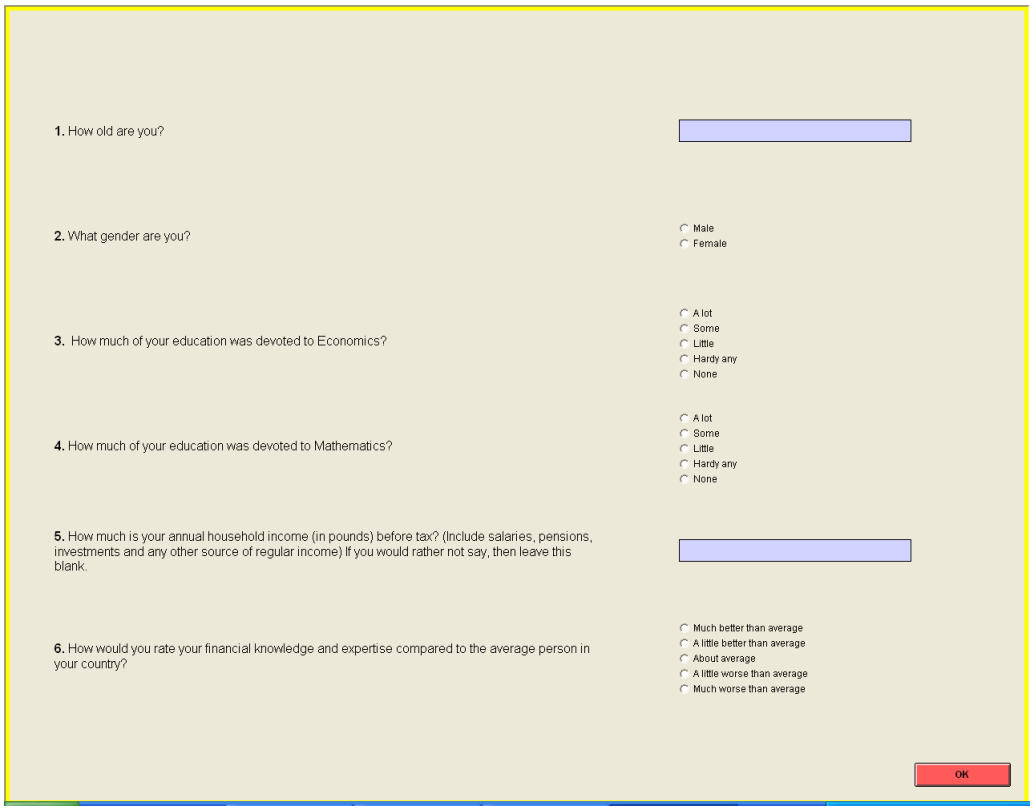

TASK NUMBER #2
YOUR ROLE: Advisee
Instructions
This task is similar to the previous one. Again, you have 10000 pounds and you can choose to invest none, some or all of this in a risky investment.
The investment has a 50.0% chance of success. If the investment is successful, the amount you get back is 2 times the amount invested (the computer determines whether it is a success by rolling a six sided dice - it is successful if a 3 or smaller is thrown). If the investment is not successful, any money you have invested is lost.
Any money you do not invest forms part of your earnings in addition to the money returned from the investment.
In contrast to the previous task, you will receive a message of advice from an advisor with whom you are matched. 50% of the time (the computer determines this by flipping a coin) the advisor knows whether the investment is successful or not successful. In the remaining 50%, the advisor doesn't know whether it is successful or not.
The advisor will send you a message which will be one of the following: "The investment is successful", "The investment is not successful" or "I did not observe the outcome of the investment".
After this, a box will appear where you choose how much you would like to invest and then click OK. You can only invest in multiples of 1000.
Advisee's Payoff
The advisee's monetary payoff for this task is 0.10 pounds for each 1000 pounds earned in the task.
Advisor's Payoff
The advisor's monetary payoff for this task is 1.50 pounds for the advice, regardless of how much is invested or earned by the advisee.
Advisor's advice
Please wait whilst the advisor chooses a message to send to you.

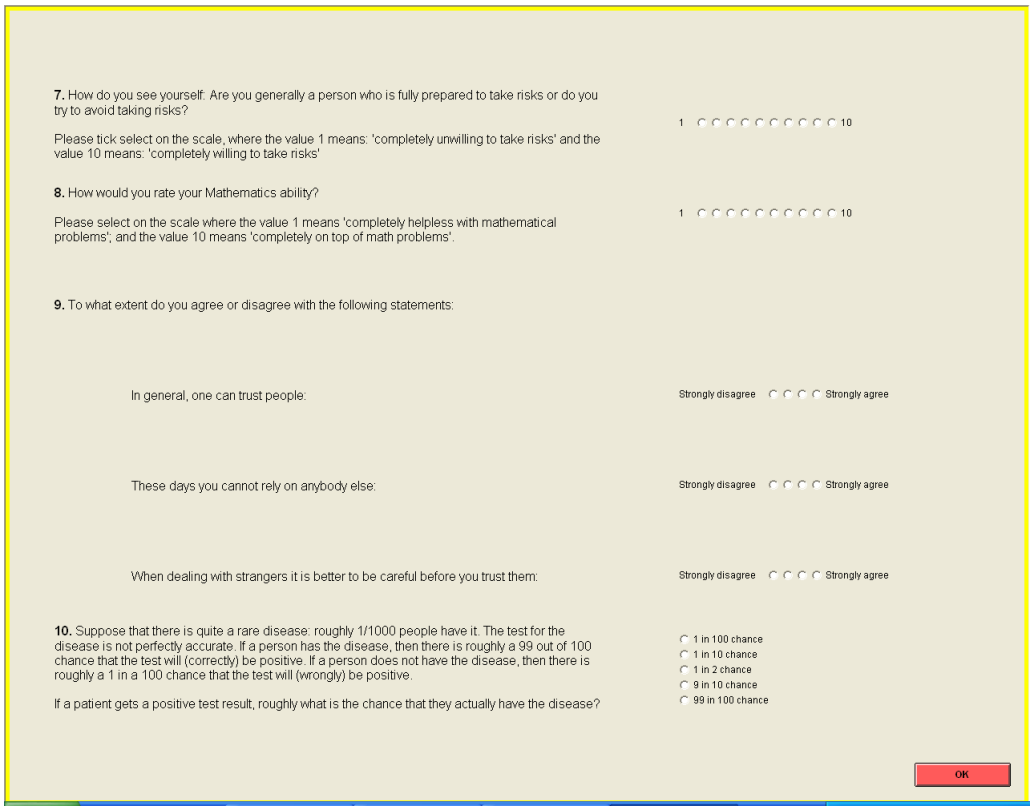

TASK NUMBER #2
YOUR ROLE: Advisee
Instructions
This task is similar to the previous one. Again, you have 10000 pounds and you can choose to invest none, some or all of this in a risky investment.
The investment has a 50.0% chance of success. If the investment is successful, the amount you get back is 2 times the amount invested (the computer determines whether it is a success by rolling a six sided dice - it is successful if a 3 or smaller is thrown). If the investment is not successful, any money you have invested is lost.
Any money you do not invest forms part of your earnings in addition to the money returned from the investment.
In contrast to the previous task, you will receive a message of advice from an advisor with whom you are matched. 50% of the time (the computer determines this by flipping a coin) the advisor knows whether the investment is successful or not successful. In the remaining 50%, the advisor doesn't know whether it is successful or not.
The advisor will send you a message which will be one of the following: "The investment is successful", "The investment is not successful" or "I did not observe the outcome of the investment".
After this, a box will appear where you choose how much you would like to invest and then click OK. You can only invest in multiples of 1000.
Advisee's Payoff
The advisee's monetary payoff for this task is 0.10 pounds for each 1000 pounds earned in the task.
Advisor's Payoff
The advisor's monetary payoff for this task is 1.50 pounds for the advice, regardless of how much is invested or earned by the advisee.
Advisor's advice
The investment is successful
Investment Choice
How many pounds would you like to invest in the investment?
OK


TASK NUMBER #3
YOUR ROLE: Advisee
Instructions
This task is similar to the previous two tasks. Again, you have 10000 pounds and you can choose to invest none, some or all of this in a risky investment.
The investment has a 50.0% chance of success. If the investment is successful, the amount you get back is 2 times the amount invested (the computer determines whether it is a success by rolling a six sided dice - it is successful if a 3 or smaller is thrown). If the investment is not successful, any money you have invested is lost.
Any money you do not invest forms part of your earnings in addition to the money returned from the investment.
As in the previous task, you will receive a message of advice from an advisor with whom you are matched. Again, 50% of the time the advisor knows whether the investment is successful or not successful (the computer determines this by flipping a coin). In the remaining 50%, the advisor doesn't know whether it is successful or not.
The advisor will send you a message which will be one of the following: "I did not see the outcome OR I have chosen not to reveal the outcome to you" or "I have chosen to reveal the outcome of the investment to you. The investment is X." where X is "profitable" or "not profitable".
After this, a box will appear where you choose how much you would like to invest and then click OK. You can only invest in multiples of 1000.
Advisee's Payoff
The advisee's monetary payoff for this task is 0.10 pounds for each 1000 pounds earned in the task.
Advisor's Payoff
The advisor's monetary payoff for this task is 1.50 pounds for the advice, regardless of how much is invested or earned by the advisee.
Advisor's advice
I have chosen to reveal the outcome of the investment to you. The investment is successful.
Investment Choice
How many pounds would you like to invest in the investment?
OK


TASK NUMBER #4
YOUR ROLE: Advisee
Instructions
In this task, you have 10000 pounds and you need to choose how to divide this money between two investments - there is no option not to invest. We now describe the two possible investments.
Investment 1: It has annual returns linked to the Dow Jones stock index. There is no initial set up fee. Annual management fee of 1.00% (payable on the entire amount held at the end of the year).
Investment 2: has annual returns linked to the Dow Jones stock index. It has an initial set up fee of 400.00 pounds. It has no annual management fee.
The average annual return of the Dow Jones stock index is +7.6%. Your investment payoff will be calculated using five random draws from the historical distribution of annual Dow Jones returns and subtracting the management fees described above.
As in the previous task, you will receive a message of advice from an advisor with whom you are matched. The advisor does not know the outcome of the five random draws. However, the advisor does know the average return from investing all of the money including the fees (the +7.6% return is the return excluding the fees).
The advisor will send you a message which will be one of the following: "I recommend that you invest in Investment 1" or "I recommend that you invest in Investment 2".
After this, a box will appear where you choose how much you would like to invest in the two investments and then click OK. You can only invest in multiples of 1000 and your total investment must be 10000.
Advisee's Payoff
The advisee's monetary payoff for this task is 0.40 pounds for each 1000 pounds profit in the task.
Note that profit is not the same as earnings. Profit is the amount over 10000 you earn from the investments.
Advisor's Payoff
The advisor's monetary payoff for this task is:
1.50 pounds for the advice, regardless of how much is invested or earned by the advisee
Advisor's advice
I recommend to invest in Investment 1
Investment Choice
How many pounds would you like to invest in each investment?
Investment 1:
Investment 2:
OK


TASK NUMBER #5
YOUR ROLE: Advisee
Instructions
In this task, you have 10000 pounds and you need to choose how to divide this money between two investments - there is no option not to invest. We now describe the two possible investments.
Investment 1: has annual returns linked to the Dow Jones stock index. There is no initial set up fee. There is no annual fee.
Investment 2: has annual returns linked to the Dow Jones stock index, but never makes a loss even if the Dow Jones goes down (i.e. if the annual return is negative). There is no initial set up fee. There is an annual management fee of 700.00 pounds (to be paid at the end of each year).
The average annual return of the Dow Jones stock index is +7.6%. Your investment payoff will be calculated using five random draws from the historical distribution of annual Dow Jones returns and subtracting the management fees described above.
As in the previous tasks, you will receive a message of advice from an advisor with whom you are matched. The advisor does not know the outcome of the five random draws. However, the advisor does know the average return from investing all of the money including the fees (the +7.6% return is the average expected return excluding the fees and includes years when the Dow Jones may be negative) in each of the investments.
The net expected return of the two investments after 5 years is as follows:
Investment 1: 44.2% (assuming an investment of 10000 pounds)
Investment 2: 39.2% (assuming an investment of 10000 pounds)
The advisor will send you a message which will be one of the following: "I recommend that you invest in Investment 1" or "I recommend that you invest in Investment 2".
After this, a box will appear where you choose how much you would like to invest in the two investments and then click OK. You can only invest in multiples of 1000 and your total investment must be 10000.
Advisee's Payoff
The advisee's monetary payoff for this task is 0.40 pounds for each 1000 pounds **profit** in the task.
Note that profit is not the same as earnings. Profit is the amount over 10000 you earn from the investments.
Advisor's Payoff
The advisor's monetary payoff for this task is:
1.50 pounds for the advice, regardless of how much is invested or earned by the advisee
Advisor's advice
I recommend to invest in Investment 2
Investment Choice
How many pounds would you like to invest in each investment?
Investment 1:
Investment 2:
OK


1. How old are you?
2. What gender are you?
Male
Female
3. How much of your education was devoted to Economics?
A lot
Some
Little
Hardy any
None
4. How much of your education was devoted to Mathematics?
A lot
Some
Little
Hardy any
None
5. How much is your annual household income (in pounds) before tax? (Include salaries, pensions, investments and any other source of regular income) If you would rather not say, then leave this blank.
6. How would you rate your financial knowledge and expertise compared to the average person in your country?
Much better than average
A little better than average
About average
A little worse than average
Much worse than average
OK

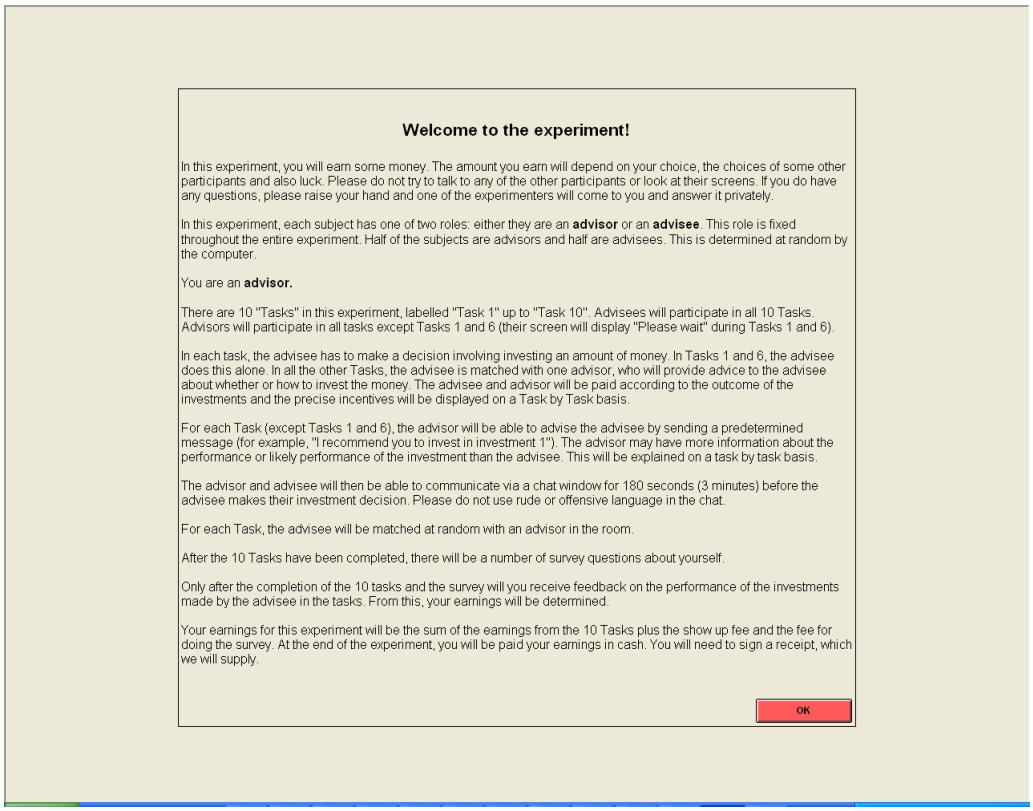

7. How do you see yourself: Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?
Please tick select on the scale, where the value 1 means: 'completely unwilling to take risks' and the value 10 means: 'completely willing to take risks'
1 10
8. How would you rate your Mathematics ability?
Please select on the scale where the value 1 means 'completely helpless with mathematical problems', and the value 10 means 'completely on top of math problems'.
1 10
9. To what extent do you agree or disagree with the following statements:
In general, one can trust people:
Strongly disagree Strongly agree
These days you cannot rely on anybody else:
Strongly disagree Strongly agree
When dealing with strangers it is better to be careful before you trust them:
Strongly disagree Strongly agree
10. Suppose that there is quite a rare disease: roughly 1/1000 people have it. The test for the disease is not perfectly accurate. If a person has the disease, then there is roughly a 99 out of 100 chance that the test will (correctly) be positive. If a person does not have the disease, then there is roughly a 1 in a 100 chance that the test will (wrongly) be positive.
If a patient gets a positive test result, roughly what is the chance that they actually have the disease?
1 in 100 chance
1 in 10 chance
1 in 2 chance
9 in 10 chance
99 in 100 chance
OK

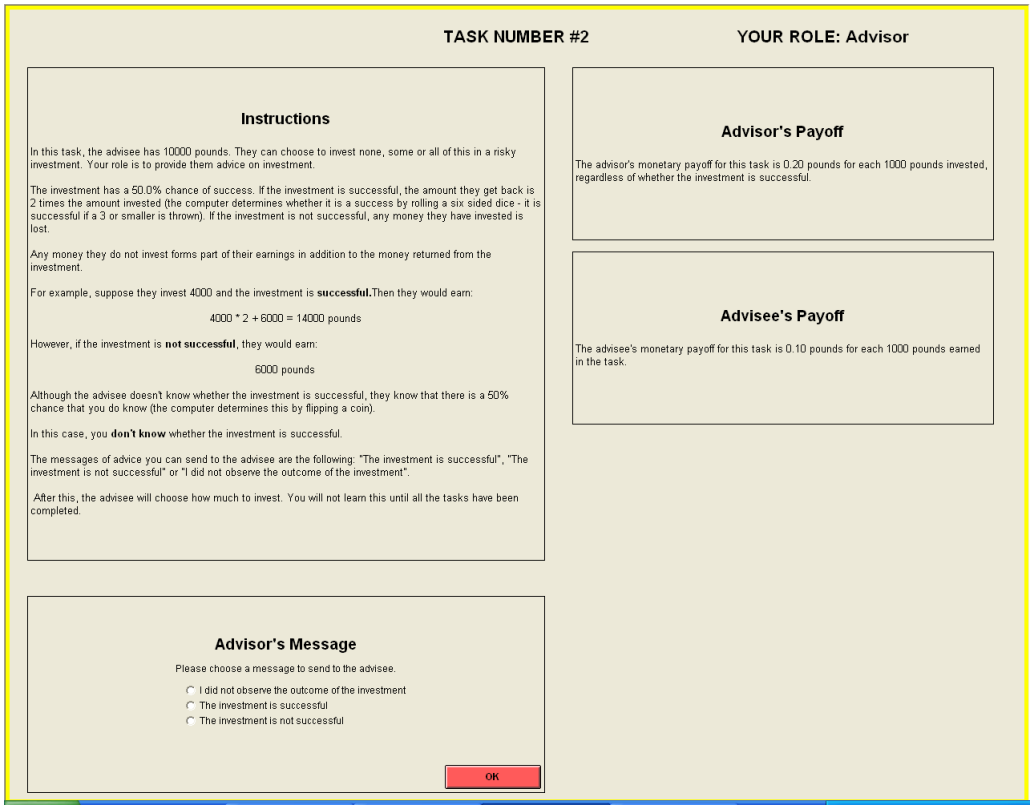

11. Given your academic performance so far how would you rank yourself?
Among the best
Better than average
Average
Lower than average
Among the worst
12. Do you have any of the following financial products, either yourself or jointly with someone else? Please tick all answers that apply.
Insurance
Bonds
Stocks and Shares
A personal pension
Funds (e.g. investment, mutual, ETFs, etc.)
Structured products (e.g. guaranteed minimum return linked to investments)
Life insurance products that are primarily used for investment purposes
OK

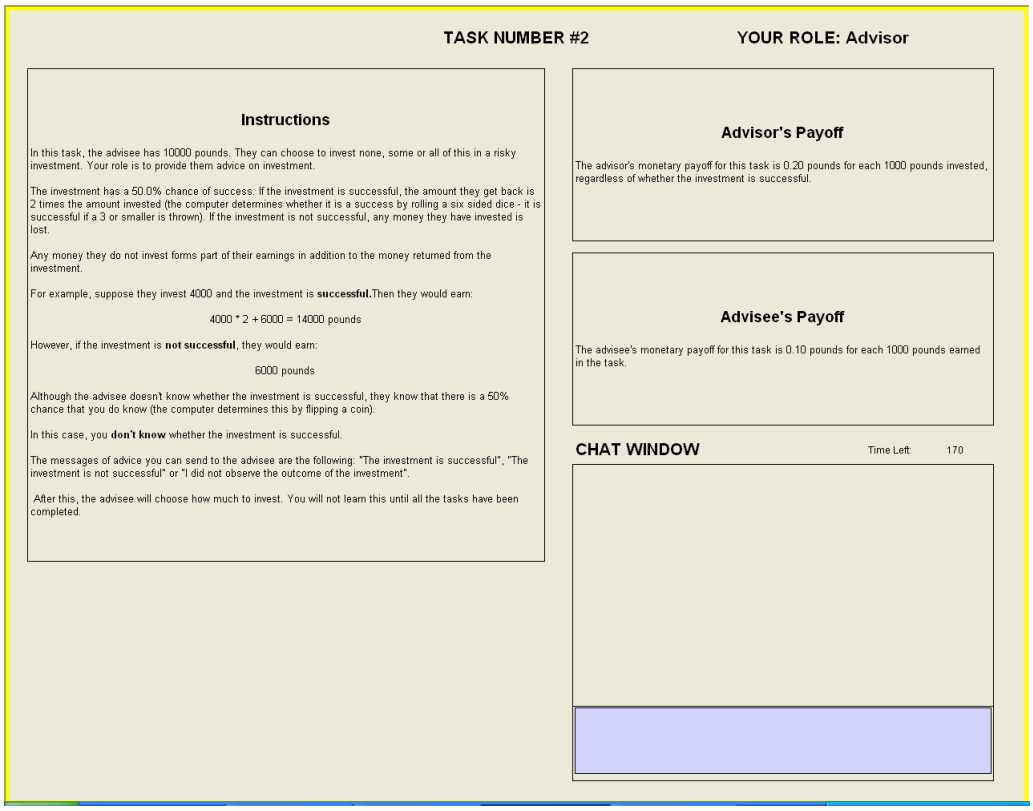

Please best describe yourself using the quiz below.
If you strongly agree with a statement, choose the left hand radio button.
If you strongly disagree, choose the right hand one.
I see myself as:
Extraverted, enthusiastic: Agree Disagree
Critical, quarrelsome: Agree Disagree
Dependable, self-disciplined: Agree Disagree
Anxious, easily upset: Agree Disagree
Open to new experiences, complex: Agree Disagree
Reserved, quiet: Agree Disagree
Sympathetic, warm: Agree Disagree
Disorganized, careless: Agree Disagree
Calm, emotionally stable: Agree Disagree
Conventional, uncreative: Agree Disagree
OK

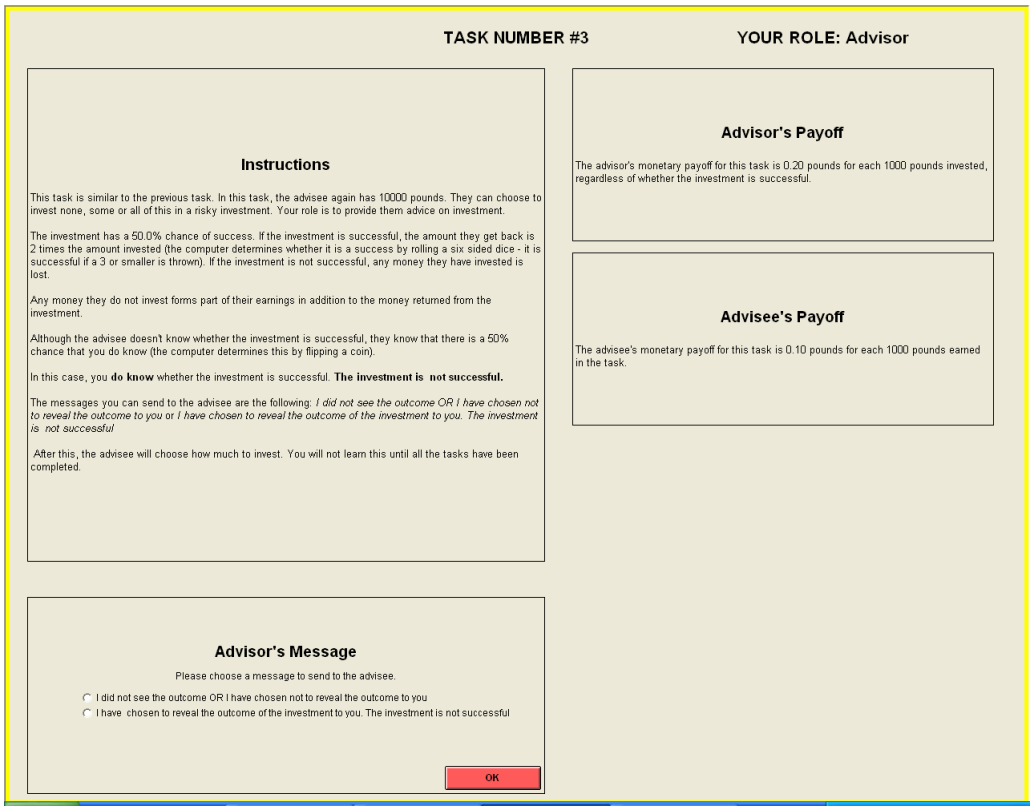

Please best describe yourself using the quiz below.
If you strongly agree with a statement, choose the left hand radio button.
If you strongly disagree, choose the right hand one.
A group member should do nothing that contradicts group-norms or rules: Agree Disagree
A group member may act differently from demands of group rules: Agree Disagree
A group member should always obey group rules: Agree Disagree
Sometimes a group member may counteract group rules: Agree Disagree
A group member who has violated group rules should be punished severely: Agree Disagree
A group member has not necessarily to be punished very hard if he has offended against group rules once: Agree Disagree
A group member who has counteracted group norms should always be called to account: Agree Disagree
If a group member has violated group rules, he or she does not necessarily have to be punished: Agree Disagree
If a group has a leader, group members have to respect and obey him in any case: Agree Disagree
If a group member does not agree with decisions of a group leader, he or she should not follow his orders: Agree Disagree
Instructions of group leaders should be obeyed under all circumstances: Agree Disagree
A group member should only obey orders of his group leader if they match his own interests: Agree Disagree
OK

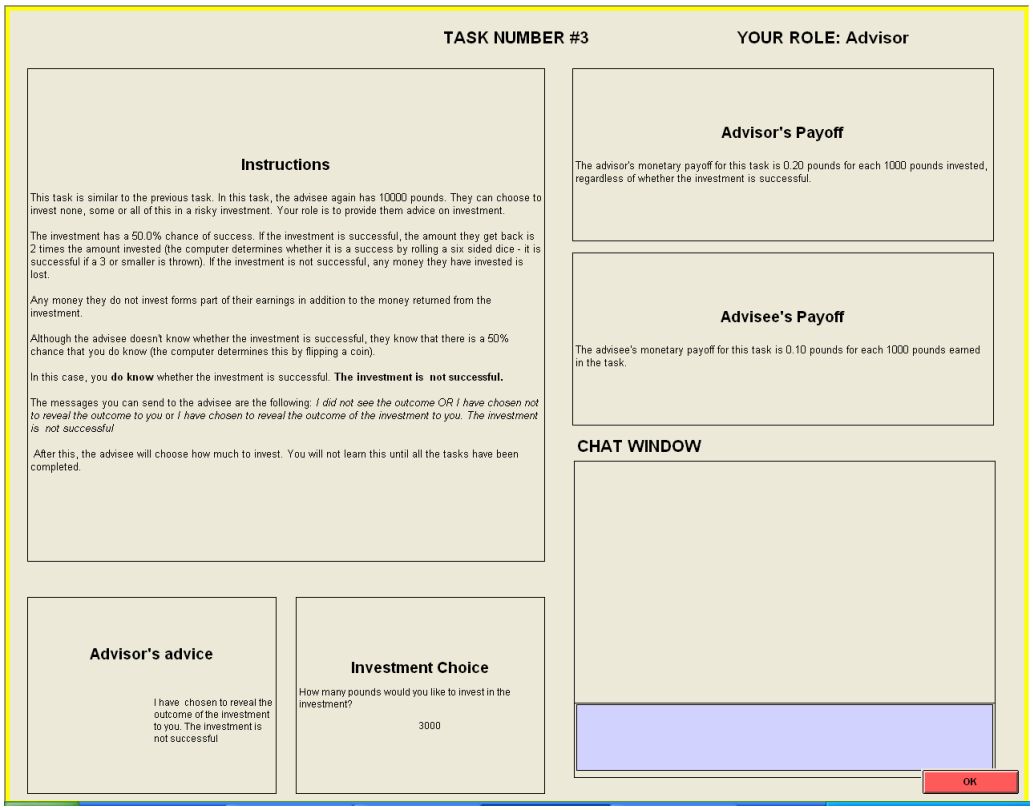
Advisor Screenshots

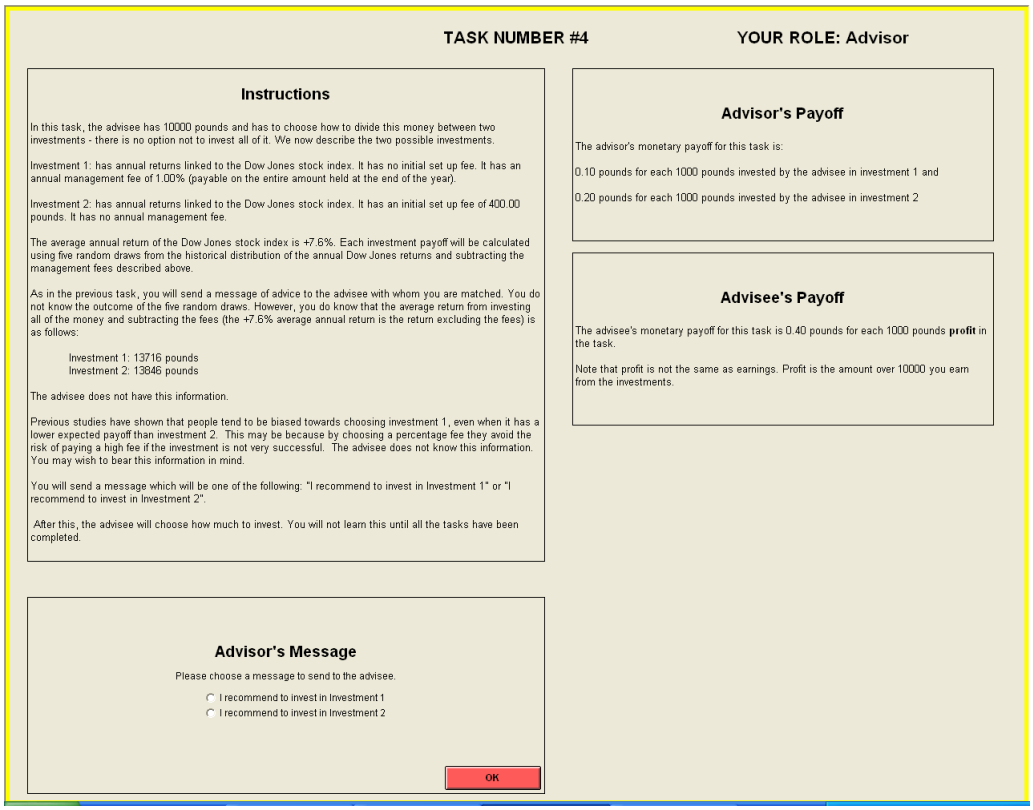


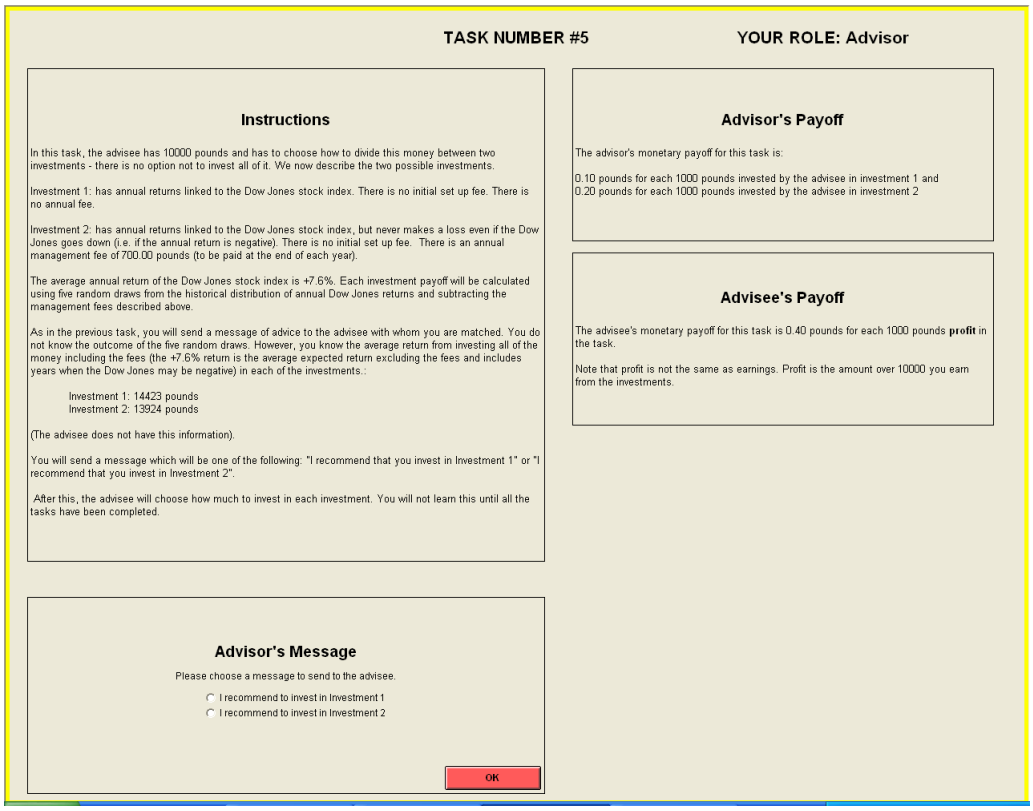


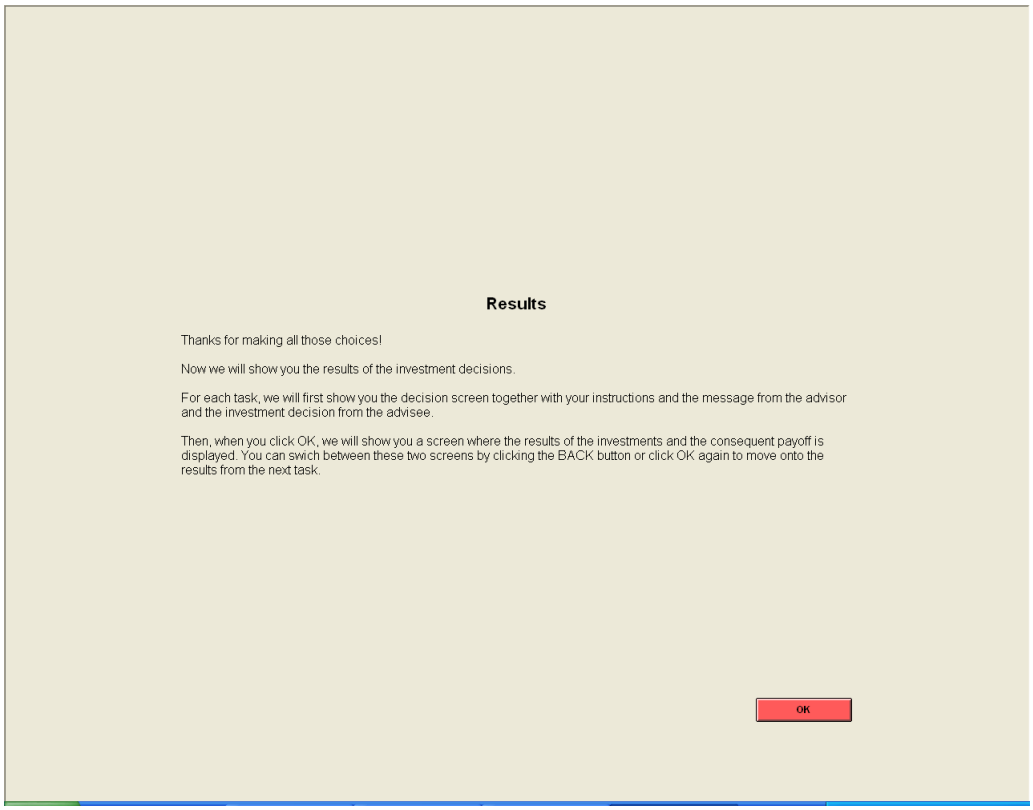

TASK NUMBER #2
YOUR ROLE: Advisor
Instructions
In this task, the advisee has 10000 pounds. They can choose to invest none, some or all of this in a risky investment. Your role is to provide them advice on investment.
The investment has a 50.0% chance of success. If the investment is successful, the amount they get back is 2 times the amount invested (the computer determines whether it is a success by rolling a six sided dice - it is successful if a 3 or smaller is thrown). If the investment is not successful, any money they have invested is lost.
Any money they do not invest forms part of their earnings in addition to the money returned from the investment.
For example, suppose they invest 4000 and the investment is successful.Then they would earn:
4000 * 2 + 6000 = 14000 pounds
However, if the investment is not successful, they would earn:
6000 pounds
Although the advisee doesn't know whether the investment is successful, they know that there is a 50% chance that you do know (the computer determines this by flipping a coin).
In this case, you don't know whether the investment is successful.
The messages of advice you can send to the advisee are the following: "The investment is successful", "The investment is not successful" or "I did not observe the outcome of the investment".
After this, the advisee will choose how much to invest. You will not learn this until all the tasks have been completed.
Advisor's Payoff
The advisor's monetary payoff for this task is 0.20 pounds for each 1000 pounds invested, regardless of whether the investment is successful.
Advisee's Payoff
The advisee's monetary payoff for this task is 0.10 pounds for each 1000 pounds earned in the task.
CHAT WINDOW
Time Left: 170

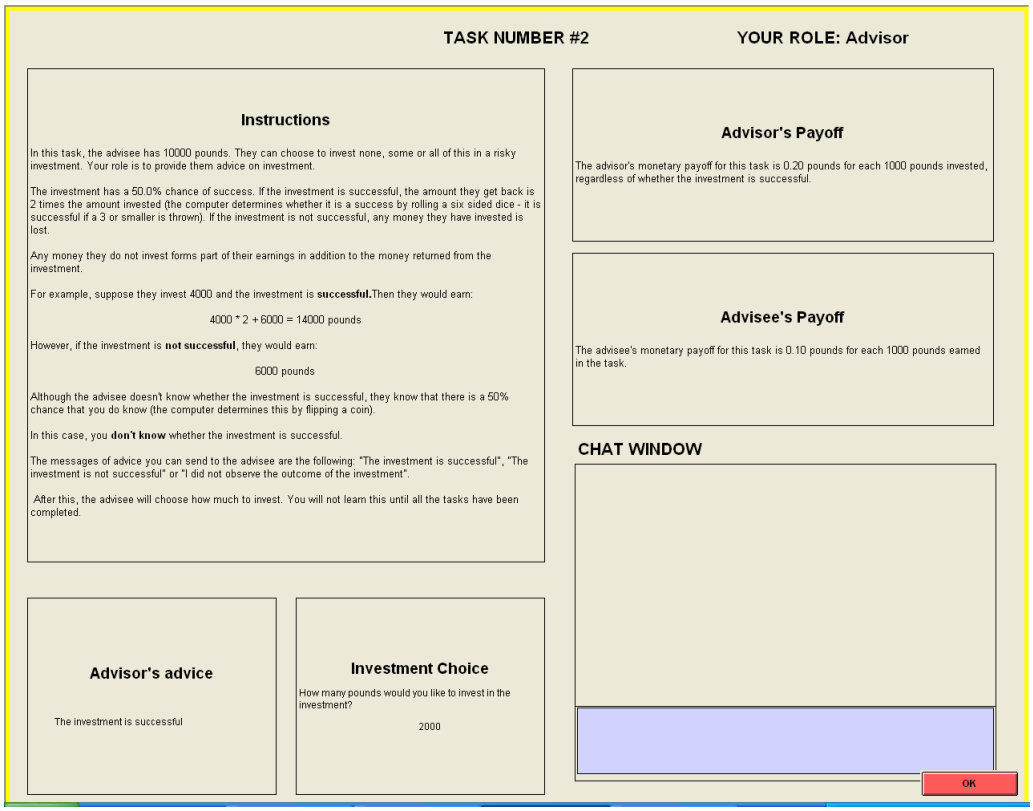

TASK NUMBER #3
YOUR ROLE: Advisor
Instructions
This task is similar to the previous task. In this task, the advisee again has 10000 pounds. They can choose to invest none, some or all of this in a risky investment. Your role is to provide them advice on investment.
The investment has a 50.0% chance of success. If the investment is successful, the amount they get back is 2 times the amount invested (the computer determines whether it is a success by rolling a six sided dice - it is successful if a 3 or smaller is thrown). If the investment is not successful, any money they have invested is lost.
Any money they do not invest forms part of their earnings in addition to the money returned from the investment.
Although the advisee doesn't know whether the investment is successful, they know that there is a 50% chance that you do know (the computer determines this by flipping a coin).
In this case, you do know whether the investment is successful. The investment is not successful.
The messages you can send to the advisee are the following: I did not see the outcome OR I have chosen not to reveal the outcome to you or I have chosen to reveal the outcome of the investment to you. The investment is not successful
After this, the advisee will choose how much to invest. You will not learn this until all the tasks have been completed.
Advisor's Message
Please choose a message to send to the advisee.
I did not see the outcome OR I have chosen not to reveal the outcome to you
I have chosen to reveal the outcome of the investment to you. The investment is not successful
OK
Advisor's Payoff
The advisor's monetary payoff for this task is 0.20 pounds for each 1000 pounds invested, regardless of whether the investment is successful.
Advisee's Payoff
The advisee's monetary payoff for this task is 0.10 pounds for each 1000 pounds earned in the task.

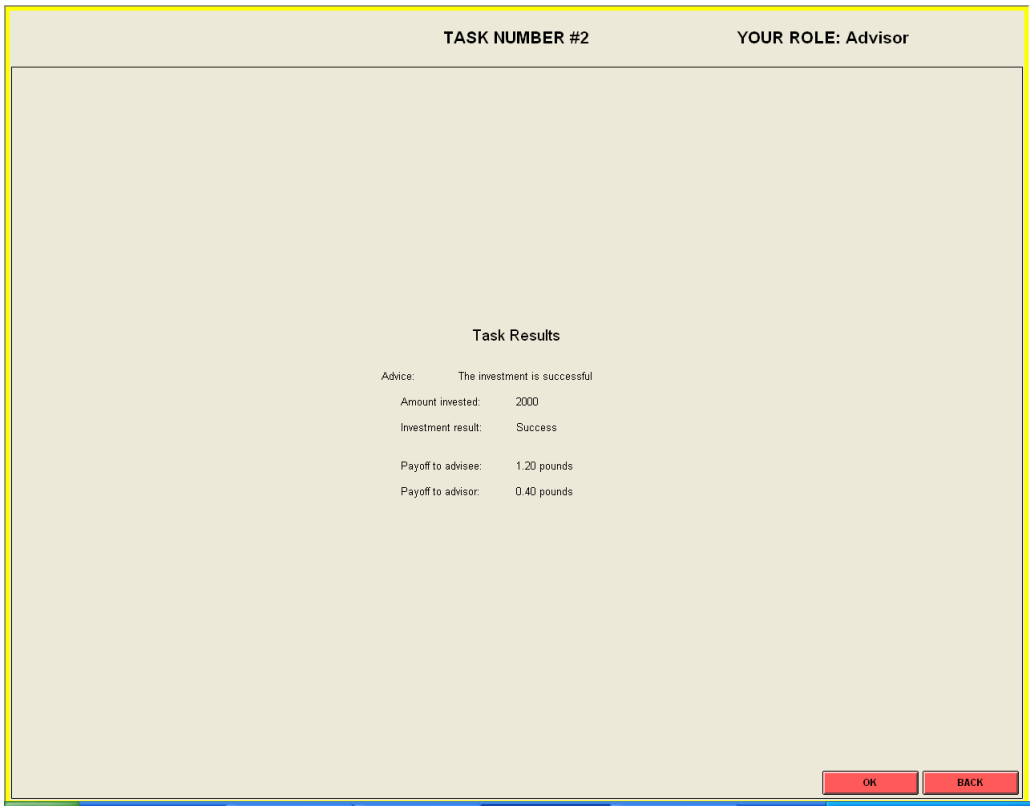

TASK NUMBER #3
YOUR ROLE: Advisor
Instructions
This task is similar to the previous task. In this task, the advisee again has 10000 pounds. They can choose to invest none, some or all of this in a risky investment. Your role is to provide them advice on investment.
The investment has a 50.0% chance of success. If the investment is successful, the amount they get back is 2 times the amount invested (the computer determines whether it is a success by rolling a six sided dice - it is successful if a 3 or smaller is thrown). If the investment is not successful, any money they have invested is lost.
Any money they do not invest forms part of their earnings in addition to the money returned from the investment.
Although the advisee doesn't know whether the investment is successful, they know that there is a 50% chance that you do know (the computer determines this by flipping a coin).
In this case, you do know whether the investment is successful. The investment is not successful.
The messages you can send to the advisee are the following: I did not see the outcome OR I have chosen not to reveal the outcome to you or I have chosen to reveal the outcome of the investment to you. The investment is not successful
After this, the advisee will choose how much to invest. You will not learn this until all the tasks have been completed.
Advisor's Payoff
The advisor's monetary payoff for this task is 0.20 pounds for each 1000 pounds invested, regardless of whether the investment is successful.
Advisee's Payoff
The advisee's monetary payoff for this task is 0.10 pounds for each 1000 pounds earned in the task.
CHAT WINDOW
Advisor's advice
I have chosen to reveal the outcome of the investment to you. The investment is not successful
Investment Choice
How many pounds would you like to invest in the investment?
3000
OK

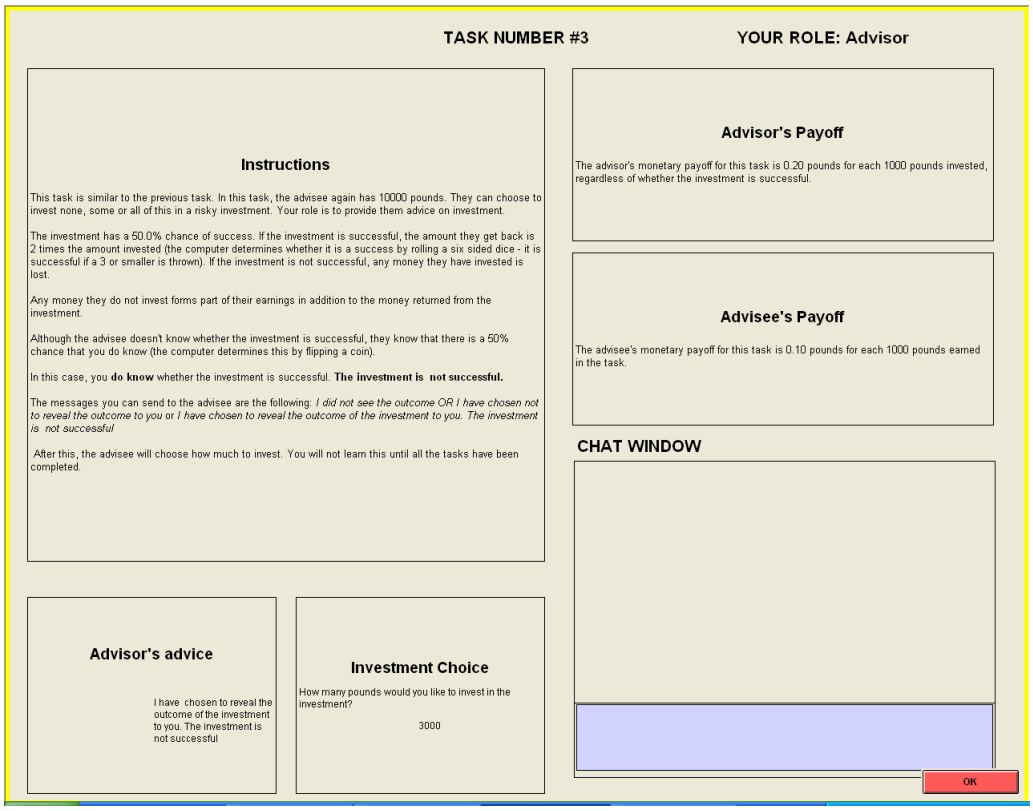

TASK NUMBER #4
YOUR ROLE: Advisor
Instructions
In this task, the advisee has 10000 pounds and has to choose how to divide this money between two investments - there is no option not to invest all of it. We now describe the two possible investments.
Investment 1: has annual returns linked to the Dow Jones stock index. It has no initial set up fee. It has an annual management fee of 1.00% (payable on the entire amount held at the end of the year).
Investment 2: has annual returns linked to the Dow Jones stock index. It has an initial set up fee of 400.00 pounds. It has no annual management fee.
The average annual return of the Dow Jones stock index is +7.6%. Each investment payoff will be calculated using five random draws from the historical distribution of the annual Dow Jones returns and subtracting the management fees described above.
As in the previous task, you will send a message of advice to the advisee with whom you are matched. You do not know the outcome of the five random draws. However, you do know that the average return from investing all of the money and subtracting the fees (the +7.6% average annual return is the return excluding the fees) is as follows:
Investment 1: 13716 pounds
Investment 2: 13846 pounds
The advisee does not have this information.
Previous studies have shown that people tend to be biased towards choosing investment 1, even when it has a lower expected payoff than investment 2. This may be because by choosing a percentage fee they avoid the risk of paying a high fee if the investment is not very successful. The advisee does not know this information. You may wish to bear this information in mind.
You will send a message which will be one of the following: "I recommend to invest in Investment 1" or "I recommend to invest in Investment 2".
After this, the advisee will choose how much to invest. You will not learn this until all the tasks have been completed.
Advisor's Payoff
The advisor's monetary payoff for this task is:
0.10 pounds for each 1000 pounds invested by the advisee in investment 1 and
0.20 pounds for each 1000 pounds invested by the advisee in investment 2
Advisee's Payoff
The advisee's monetary payoff for this task is 0.40 pounds for each 1000 pounds profit in the task.
Note that profit is not the same as earnings. Profit is the amount over 10000 you earn from the investments.
Advisor's Message
Please choose a message to send to the advisee.
I recommend to invest in Investment 1
I recommend to invest in Investment 2
OK

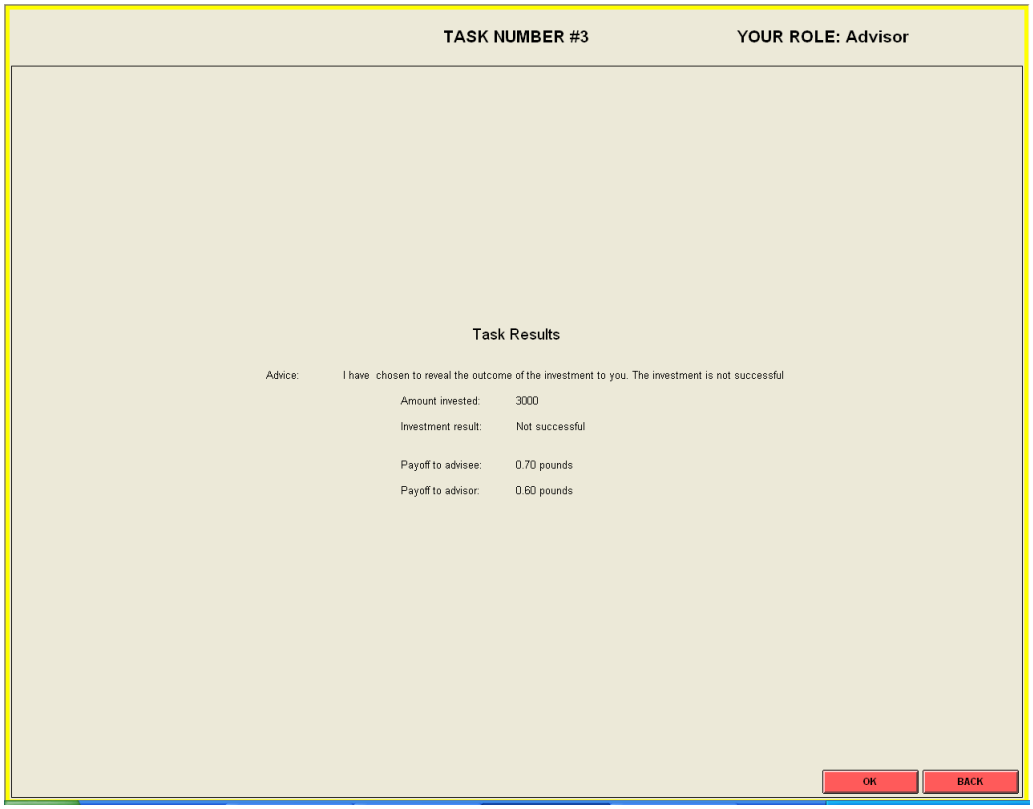

TASK NUMBER #5
YOUR ROLE: Advisor
Instructions
In this task, the advisee has 10000 pounds and has to choose how to divide this money between two investments - there is no option not to invest all of it. We now describe the two possible investments.
Investment 1: has annual returns linked to the Dow Jones stock index. There is no initial set up fee. There is no annual fee.
Investment 2: has annual returns linked to the Dow Jones stock index, but never makes a loss even if the Dow Jones goes down (i.e. if the annual return is negative). There is no initial set up fee. There is an annual management fee of 700.00 pounds (to be paid at the end of each year).
The average annual return of the Dow Jones stock index is +7.6%. Each investment payoff will be calculated using five random draws from the historical distribution of annual Dow Jones returns and subtracting the management fees described above.
As in the previous task, you will send a message of advice to the advisee with whom you are matched. You do not know the outcome of the five random draws. However, you know the average return from investing all of the money including the fees (the +7.6% return is the average expected return excluding the fees and includes years when the Dow Jones may be negative) in each of the investments.:
Investment 1: 14423 pounds
Investment 2: 13924 pounds
(The advisee does not have this information).
You will send a message which will be one of the following: "I recommend that you invest in Investment 1" or "I recommend that you invest in Investment 2".
After this, the advisee will choose how much to invest in each investment. You will not learn this until all the tasks have been completed.
Advisor's Payoff
The advisor's monetary payoff for this task is:
0.10 pounds for each 1000 pounds invested by the advisee in investment 1 and
0.20 pounds for each 1000 pounds invested by the advisee in investment 2
Advisee's Payoff
The advisee's monetary payoff for this task is 0.40 pounds for each 1000 pounds profit in the task.
Note that profit is not the same as earnings. Profit is the amount over 10000 you earn from the investments.
Advisor's Message
Please choose a message to send to the advisee.
I recommend to invest in Investment 1
I recommend to invest in Investment 2
OK

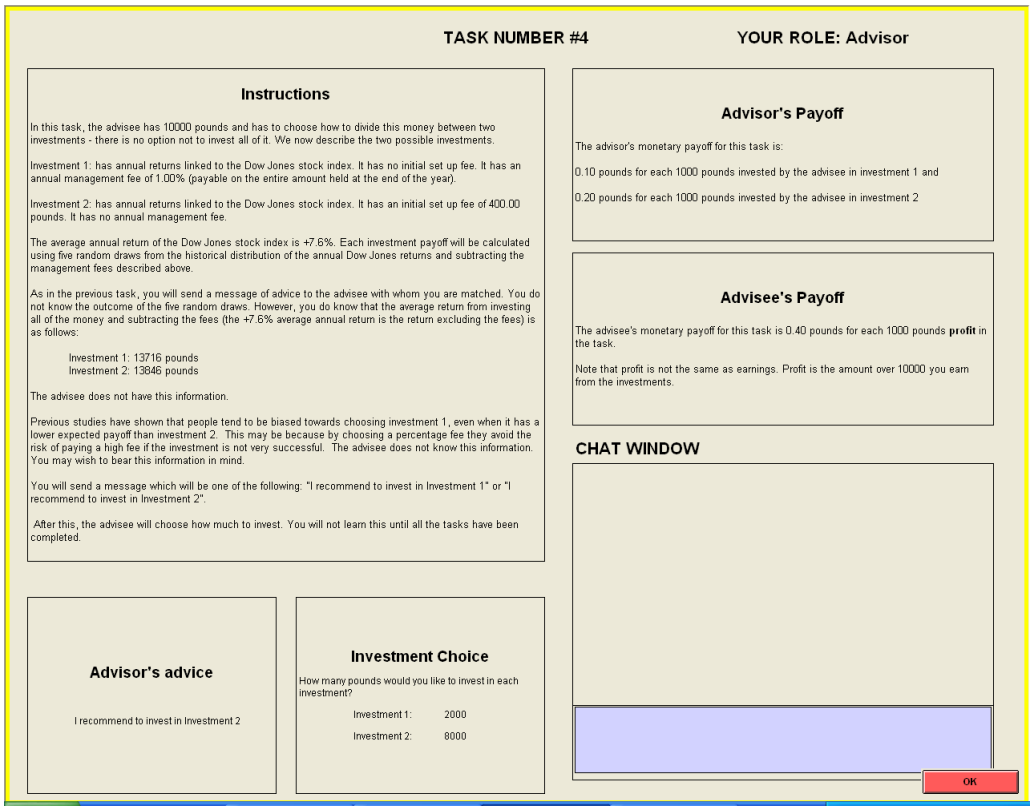

Results
Thanks for making all those choices!
Now we will show you the results of the investment decisions.
For each task, we will first show you the decision screen together with your instructions and the message from the advisor and the investment decision from the advisee.
Then, when you click OK, we will show you a screen where the results of the investments and the consequent payoff is displayed. You can swich between these two screens by clicking the BACK button or click OK again to move onto the results from the next task.
OK

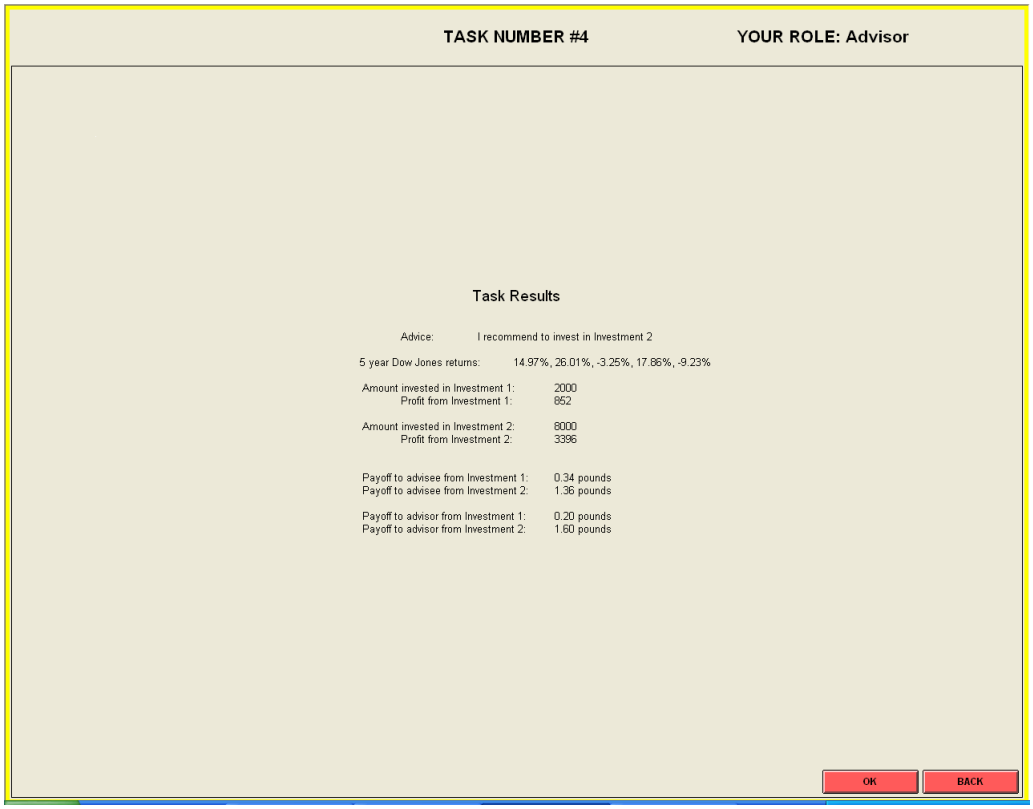

TASK NUMBER #2
YOUR ROLE: Advisor
Instructions
In this task, the advisee has 10000 pounds. They can choose to invest none, some or all of this in a risky investment. Your role is to provide them advice on investment.
The investment has a 50.0% chance of success. If the investment is successful, the amount they get back is 2 times the amount invested (the computer determines whether it is a success by rolling a six sided dice - it is successful if a 3 or smaller is thrown). If the investment is not successful, any money they have invested is lost.
Any money they do not invest forms part of their earnings in addition to the money returned from the investment.
For example, suppose they invest 4000 and the investment is successful.Then they would earn:
4000 * 2 + 6000 = 14000 pounds
However, if the investment is not successful, they would earn:
6000 pounds
Although the advisee doesn't know whether the investment is successful, they know that there is a 50% chance that you do know (the computer determines this by flipping a coin).
In this case, you don't know whether the investment is successful.
The messages of advice you can send to the advisee are the following: "The investment is successful", "The investment is not successful" or "I did not observe the outcome of the investment".
After this, the advisee will choose how much to invest. You will not learn this until all the tasks have been completed.
Advisor's Payoff
The advisor's monetary payoff for this task is 0.20 pounds for each 1000 pounds invested, regardless of whether the investment is successful.
Advisee's Payoff
The advisee's monetary payoff for this task is 0.10 pounds for each 1000 pounds earned in the task.
CHAT WINDOW
Advisor's advice
The investment is successful
Investment Choice
How many pounds would you like to invest in the investment?
2000
OK

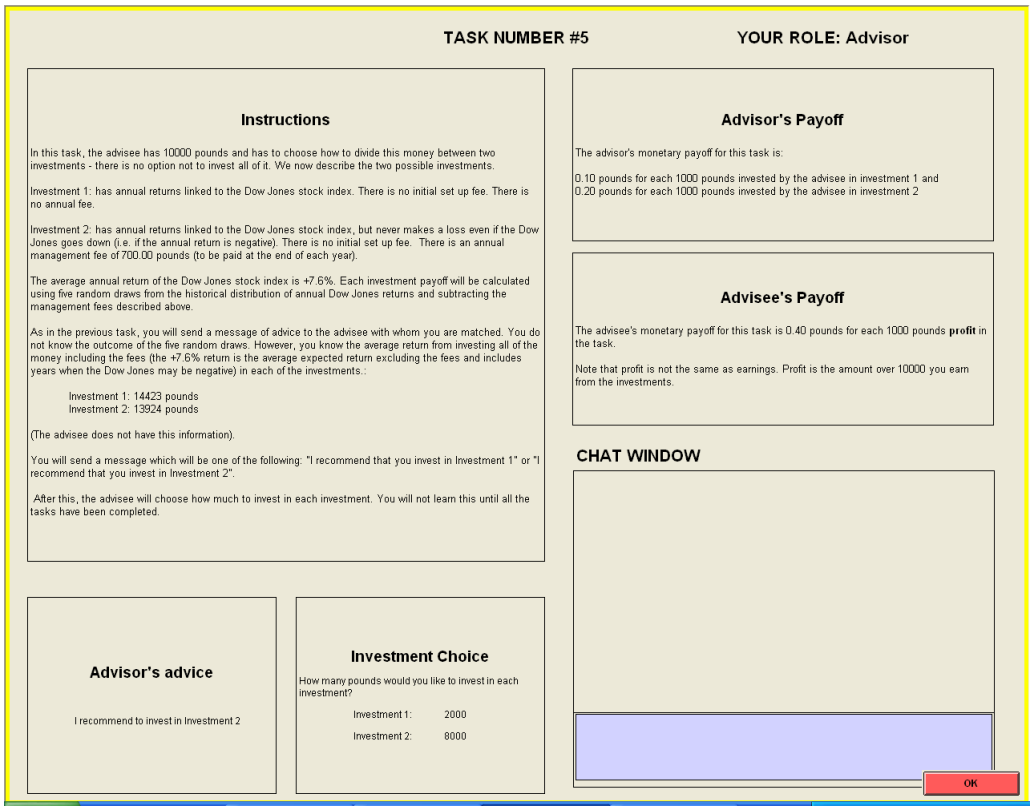

TASK NUMBER #2
YOUR ROLE: Advisor
Task Results
Advice: The investment is successful
Amount invested: 2000
Investment result: Success
Payoff to advisee: 1.20 pounds
Payoff to advisor: 0.40 pounds
OK
BACK

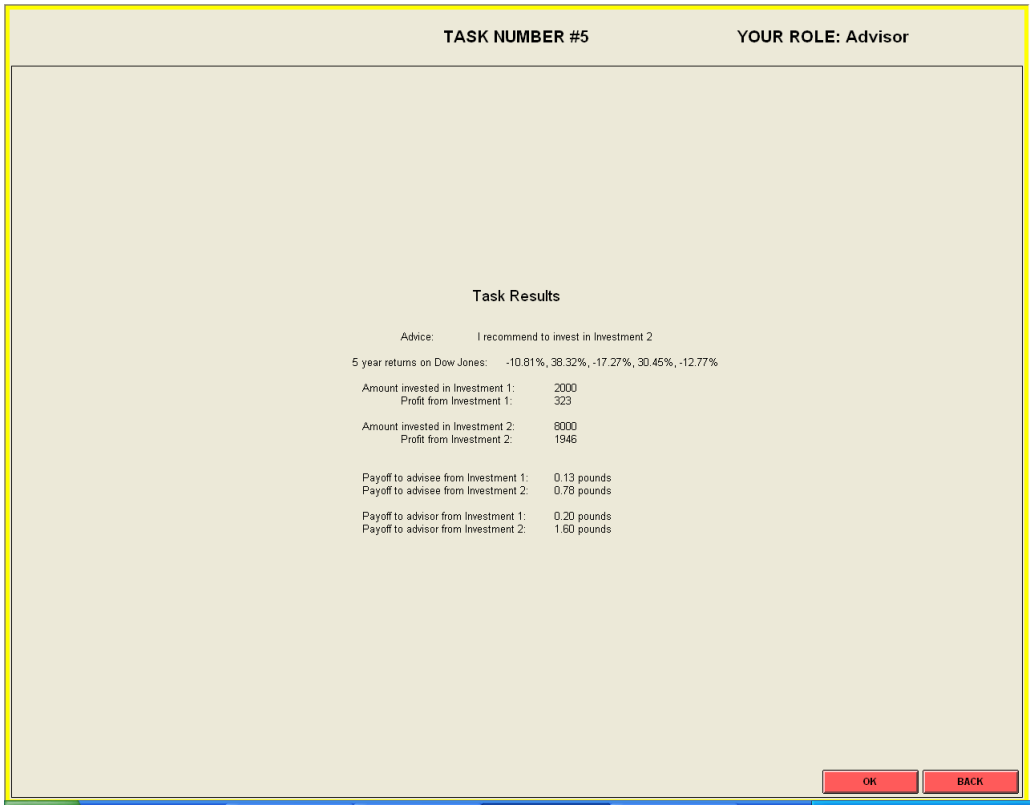

TASK NUMBER #3
YOUR ROLE: Advisor
Instructions
This task is similar to the previous task. In this task, the advisee again has 10000 pounds. They can choose to invest none, some or all of this in a risky investment. Your role is to provide them advice on investment.
The investment has a 50.0% chance of success. If the investment is successful, the amount they get back is 2 times the amount invested (the computer determines whether it is a success by rolling a six sided dice - it is successful if a 3 or smaller is thrown). If the investment is not successful, any money they have invested is lost.
Any money they do not invest forms part of their earnings in addition to the money returned from the investment.
Although the advisee doesn't know whether the investment is successful, they know that there is a 50% chance that you do know (the computer determines this by flipping a coin).
In this case, you do know whether the investment is successful. The investment is not successful.
The messages you can send to the advisee are the following: I did not see the outcome OR I have chosen not to reveal the outcome to you or I have chosen to reveal the outcome of the investment to you. The investment is not successful
After this, the advisee will choose how much to invest. You will not learn this until all the tasks have been completed.
Advisor's Payoff
The advisor's monetary payoff for this task is 0.20 pounds for each 1000 pounds invested, regardless of whether the investment is successful.
Advisee's Payoff
The advisee's monetary payoff for this task is 0.10 pounds for each 1000 pounds earned in the task.
CHAT WINDOW
OK
Advisor's advice
I have chosen to reveal the outcome of the investment to you. The investment is not successful
Investment Choice
How many pounds would you like to invest in the investment?
3000


TASK NUMBER #3
YOUR ROLE: Advisor
Task Results
Advice: I have chosen to reveal the outcome of the investment to you. The investment is not successful
Amount invested: 3000
Investment result: Not successful
Payoff to advisee: 0.70 pounds
Payoff to advisor: 0.60 pounds
OK
BACK


TASK NUMBER #4
YOUR ROLE: Advisor
Instructions
In this task, the advisee has 10000 pounds and has to choose how to divide this money between two investments - there is no option not to invest all of it. We now describe the two possible investments.
Investment 1: has annual returns linked to the Dow Jones stock index. It has no initial set up fee. It has an annual management fee of 1.00% (payable on the entire amount held at the end of the year).
Investment 2: has annual returns linked to the Dow Jones stock index. It has an initial set up fee of 400.00 pounds. It has no annual management fee.
The average annual return of the Dow Jones stock index is +7.6%. Each investment payoff will be calculated using five random draws from the historical distribution of the annual Dow Jones returns and subtracting the management fees described above.
As in the previous task, you will send a message of advice to the advisee with whom you are matched. You do not know the outcome of the five random draws. However, you do know that the average return from investing all of the money and subtracting the fees (the +7.6% average annual return is the return excluding the fees) is as follows:
Investment 1: 13716 pounds
Investment 2: 13846 pounds
The advisee does not have this information.
Previous studies have shown that people tend to be biased towards choosing investment 1, even when it has a lower expected payoff than investment 2. This may be because by choosing a percentage fee they avoid the risk of paying a high fee if the investment is not very successful. The advisee does not know this information. You may wish to bear this information in mind.
You will send a message which will be one of the following: "I recommend to invest in Investment 1" or "I recommend to invest in Investment 2".
After this, the advisee will choose how much to invest. You will not learn this until all the tasks have been completed.
Advisor's Payoff
The advisor's monetary payoff for this task is:
0.10 pounds for each 1000 pounds invested by the advisee in investment 1 and
0.20 pounds for each 1000 pounds invested by the advisee in investment 2
Advisee's Payoff
The advisee's monetary payoff for this task is 0.40 pounds for each 1000 pounds profit in the task.
Note that profit is not the same as earnings. Profit is the amount over 10000 you earn from the investments.
CHAT WINDOW
OK
Advisor's advice
I recommend to invest in Investment 2
Investment Choice
How many pounds would you like to invest in each investment?
Investment 1: 2000
Investment 2: 8000


TASK NUMBER #4
YOUR ROLE: Advisor
Task Results
Advice: I recommend to invest in Investment 2
5 year Dow Jones returns: 14.97%, 26.01%, -3.25%, 17.86%, -9.23%
Amount invested in Investment 1: 2000
Profit from Investment 1: 852
Amount invested in Investment 2: 8000
Profit from Investment 2: 3396
Payoff to advisee from Investment 1: 0.34 pounds
Payoff to advisee from Investment 2: 1.36 pounds
Payoff to advisor from Investment 1: 0.20 pounds
Payoff to advisor from Investment 2: 1.60 pounds
OK
BACK


TASK NUMBER #5
YOUR ROLE: Advisor
Instructions
In this task, the advisee has 10000 pounds and has to choose how to divide this money between two investments - there is no option not to invest all of it. We now describe the two possible investments.
Investment 1: has annual returns linked to the Dow Jones stock index. There is no initial set up fee. There is no annual fee.
Investment 2: has annual returns linked to the Dow Jones stock index, but never makes a loss even if the Dow Jones goes down (i.e. if the annual return is negative). There is no initial set up fee. There is an annual management fee of 700.00 pounds (to be paid at the end of each year).
The average annual return of the Dow Jones stock index is +7.6%. Each investment payoff will be calculated using five random draws from the historical distribution of annual Dow Jones returns and subtracting the management fees described above.
As in the previous task, you will send a message of advice to the advisee with whom you are matched. You do not know the outcome of the five random draws. However, you know the average return from investing all of the money including the fees (the +7.6% return is the average expected return excluding the fees and includes years when the Dow Jones may be negative) in each of the investments.:
Investment 1: 14423 pounds
Investment 2: 13924 pounds
(The advisee does not have this information).
You will send a message which will be one of the following: "I recommend that you invest in Investment 1" or "I recommend that you invest in Investment 2".
After this, the advisee will choose how much to invest in each investment. You will not learn this until all the tasks have been completed.
Advisor's Payoff
The advisor's monetary payoff for this task is:
0.10 pounds for each 1000 pounds invested by the advisee in investment 1 and
0.20 pounds for each 1000 pounds invested by the advisee in investment 2
Advisee's Payoff
The advisee's monetary payoff for this task is 0.40 pounds for each 1000 pounds **profit** in the task.
Note that profit is not the same as earnings. Profit is the amount over 10000 you earn from the investments.
CHAT WINDOW
Advisor's advice
I recommend to invest in Investment 2
Investment Choice
How many pounds would you like to invest in each investment?
Investment 1: 2000
Investment 2: 8000
OK


TASK NUMBER #5
YOUR ROLE: Advisor
Task Results
Advice: I recommend to invest in Investment 2
5 year returns on Dow Jones: -10.81%, 38.32%, -17.27%, 30.45%, -12.77%
Amount invested in Investment 1: 2000
Profit from Investment 1: 323
Amount invested in Investment 2: 8000
Profit from Investment 2: 1946
Payoff to advisee from Investment 1: 0.13 pounds
Payoff to advisee from Investment 2: 0.78 pounds
Payoff to advisor from Investment 1: 0.20 pounds
Payoff to advisor from Investment 2: 1.60 pounds
OK
BACK


Final Payoff
Your earnings from the 10 tasks were as follows:
Task 1 0.00
Task 2 0.40
Task 3 0.60
Task 4 1.80
Task 5 1.80
Task 6 0.00
Task 7 0.40
Task 8 1.60
Task 9 1.10
Task 10 1.70
Show up Fee: 5.00
Survey Fee: 2.00
Total Earnings: 16.40
OK