

Investing for Others: Principals' vs. Agents' Preferences

Luisa Kling, Christian König-Kersting, and Stefan T. Trautmann*

University of Heidelberg

11 March 2019

Abstract: We study the degree to which financial investment advice is driven by the client's preferences, versus the preferences and incentives of the advisor. In a typical financial advice setting, clients can communicate their preferred investment profile to their financial advisor. We observe a high willingness of advisors to follow their clients' preferred investment profiles, but also replicate evidence that advisor preferences also matter for investment choices. However, even though advisors are willing to follow their clients' preferences, they often fail to do so from their clients' perspective. This is because the investment profile terms often used in financial advice are very noisy in their perception and participants associate them with highly heterogeneous investments into risky assets.

JEL: D14, D83, G11, G21

Keywords: Decisions under risk, decisions of agents, financial advice

* Corresponding author: Alfred-Weber-Institute for Economics, University of Heidelberg, Bergheimer Strasse 58, 69115 Heidelberg, Germany; Phone: +49 6221 54 2952; email: stefan.trautmann@awi.uni-heidelberg.de.

1 Introduction

As part of the revised Markets in Financial Instruments Directive (MiFID II) financial advisors in the European Union are obliged to assess their customers' personal attitudes towards taking risks, their risk tolerance, and their risk bearing capacity (Hallahan et al. 2004). Similarly, investment advisors in the United States face a *duty to inquire* and a *duty to give only suitable advice*, which entail assessments of the risk tolerance and risk bearing capacity of their clients. Clearly, these are neither easy nor clearly defined tasks and their implementation varies widely ranging from customer risk attitude questionnaires to behavioral measures of risk preferences (Grable and Lytton 1999; Kaufmann et al. 2013, Roszkowski and Grable 2005). Independent of jurisdiction, the goals of these regulatory efforts are to align the interests of clients and advisors and prevent the former from fraudulent exploitation by the latter.

One of the single most important questions for all stakeholders in situations of financial advice is how financial advisors shape their clients' investment portfolios. For clients, it is a question of optimal life cycle asset allocation. If advisor characteristics affect their portfolio allocations, advisor selection becomes a variable in their optimization. For advisors, own financial interests and ethics play a major role. For regulators, finally, consumer protection as well as welfare considerations are key. Foerster et al. (2017) study the question using data from Canadian mutual fund dealers. Their data contains both stated investment preferences from Know Your Customer (KYC) forms and actual investment portfolio holdings. They find that advisors' own risk attitudes are the strongest predictor for the risky investments on behalf of their clients. Their results show that customization of portfolios to match different customers' needs is limited. Despite the richness of the empirical datasets, the authors lose control compared to studies based on laboratory experiments. Specifically, it remains unclear how matching between advisors and clients affects the results. Clients might specifically select advisors based on a number of different and potentially unobservable characteristics. Similarly, it might be the case that advisors simply use their own risk tolerance as their best predictor for clients' risk tolerance if the communication of risk preferences from clients to advisors (via KYC forms) is too unspecific.

The goal of this paper is to revisit the question of how financial advisors shape their clients' portfolio in a tightly controlled laboratory setting with randomized treatment and role allocations. We elicit participants' perceptions of common investment profile terminology used in financial advice, let clients communicate their preferred profile to their advisor, and observe the advisors' subsequent investment decisions. This lets us test whether the strong effect of advisors' own preferences reported by Foerster et al. (2017) survive in a more tightly controlled setting absent the possibility of selection. We also ask whether customization of client portfolios

takes place and how different compensation schemes affect advisors' decisions. Finally, we study the effects of ambiguous communication of risk preferences on investment decisions.

In a 2-by-3 between-subject design, advisors either take a decision for only one client or for a group of five clients and receive either a fixed payment or earn a share of the profit or the client's outcome. In the first part of our experiment, participants individually and privately map a set of investment profiles, which range in wording from "very conservative" to "aggressive growth", to investment shares into a risky asset. The terms used to describe the investment profiles are commonly used in financial advisory documents (Mutual Fund Dealers Association of Canada 2014, subsequently MFDA). In the second part, participants take a Gneezy and Potters (1997) investment decision: Clients choose one of the five investment profiles which is subsequently communicated to their financial agent. Knowing their clients' preferred strategies, financial agents then decide how much of their clients' endowments to invest in the risky asset.

Initially collecting the individual mappings of investment profiles into risky investment shares offers us the unique opportunity to investigate the perception of the risk profiles. We find a sizable overlap of the investment profiles and conclude that the perception of risk attitude terms commonly used in financial advice is very heterogeneous. Hinting at this issue, Bradbury et al. (2015) emphasize the importance of understanding the risks involved in investment decisions and show that these can be improved by simulating experience compared to survey-style risk assessment procedures. Further adding to the evidence, Glaser et al. (2019) demonstrate that risk perception concerning financial assets is sensitive to the presentation format. While we do not systematically vary the presentation format, we are still able to control for the perception of the investment terms in our analyses and identify to which degree mismatches in invested amounts and investment preferences can be traced back to differences in perceptions between advisors and clients.

We carefully examine the behavior of advisors given their own perception of the investment profiles and find that they invest in a way that is compatible with their clients' investment profile preferences in almost half of all cases. Observations from our Group treatment reveal that tailoring of investments to clients' preferences does not only occur on the aggregate, but also on the individual level. Yet, advisors' own investment preferences also affect their clients' portfolio. Taken together, we qualitatively replicate the findings by Foerster et al. (2017), although the effect of advisors' own preferences seems to be much weaker in our tightly controlled laboratory environment compared to the empirical real-world data.

Turning to the effects of different compensation schemes on the behavior of advisors, we find that the degree to which they follow clients' stated preferences is hardly affected by them.

This observation is consistent with previous evidence provided by Ifcher and Zarghamee (2018), who find that agents have a tendency to act as surrogates for their principals. Even with strong financial incentives for the advisors to disregard their clients' preferences, the clients' preferences still substantially determine the level of investments in their experiment. The observation that agents' financial motives do not affect their behavior much is corroborated by Rud et al. (2019), who show that financial incentives do not increase misreporting of agents to clients in their study of different market structures.

Next, we take an outcome perspective and ask whether clients get “what they want”. We find evidence of a substantial problem of communication between advisors and clients: That is, even though advisors are keen to follow their clients' preferences and actually do so according to their own perception of the investment profiles, they often do not succeed from their clients' perspective, simply because they differ in their understanding of the investment profile. Clients end up with investment levels which are incompatible with their preferences, despite the advisors' attempts to align the two.

Finally, we consider two control conditions. In the first, we remove uncertainty about the perception of the different investment strategies. This condition is aimed at removing the fundamental translation error between clients' and advisors' understanding of the investment strategies. In the second control condition, we remove accountability and frame the experiment neutrally, instead of in a financial decision making context. This condition allows us to assess to what degree the possibility of holding advisors accountable for their actions contributes to the large proportion of advisors following their clients' preferences.

The remainder of the article is organized as follows: In the next section, we present a short overview of the existing literature on risk taking for others. In section 3, we present our experimental design and the procedures. Section 4 shows the results and section 5 provides a short discussion of the results. Section 6 concludes.

2 Related Literature

A growing body of literature on risky decision making for others is focused on determining whether risky decisions for others are different from risky decisions for oneself. If a difference exists, the question of the direction emerges: Do advisors take higher or lower levels of risk for their clients than they do for themselves? The evidence is mixed. This section provides a short

overview of the existing literature. We start by providing some evidence for advisors taking higher levels of risk when deciding for others.¹

Pollmann et al. (2014) employ the Gneezy and Potters (1997) investment task with agents taking decisions for one principal. Comparing their decisions to agents who decide for themselves, they find them taking less risk averse investments when deciding for others. Furthermore, Andersson et al. (2014) use a multiple price list method to study risk taking for others both in situations when losses are possible and when they are not. They do not find any difference in risk levels taken between decisions for themselves and for others if losses are impossible. Still, participants' decisions involve more risk when deciding for others if losses are possible. Another finding is that higher levels of risk taking are primarily driven by a decrease in loss aversion. Hence, the authors conclude that making decisions for others has a de-biasing advantage over decisions for oneself. This is in line with the findings of Polman (2012). He shows the stable result in several studies that decisions for others involve less loss aversion than decisions for oneself. Moreover, Pahlke et al. (2015) study the effect of being responsible for someone else's payoff on risk attitudes. In the gain domain, they find an increase in risk aversion. However, in the loss domain, they observe more risk seeking behavior. Due to their finding of an increase in risk seeking under responsibility for small probabilities in the gain domain, they reject the hypothesis of a cautious shift when being responsible for other peoples' payoff.

By using both a multiple price list experiment as well as a first-price sealed-bid auction, Chakravarty et al. (2011) find that subjects are less risk averse when deciding for others as compared to deciding for themselves. Further, they apply a belief elicitation method to get to the finding that people do not try to act in accordance with what they believe are the risk attitudes of their principals. Hsee and Weber (1997) investigate how people predict the risk preferences of others and examine possible mechanisms that people may use when estimating others' risk tolerance. They find evidence for the *Risk-as-Feelings* hypothesis according to which "people predict others to have similar risk preferences to themselves, but they predict others to be more risk neutral than themselves" (Hsee and Weber 1997, p. 45). According to this hypothesis, people base their predictions of other peoples' risk preferences both on their own feelings towards risk as well as on risk neutrality because they have problems in imagining that people have feelings that are as strong as their own. Hereby the extent to which people base it on their own feelings depends on how vivid the other person is. Thus, when the other person

¹ As some studies measure risk seeking behavior and others measure risk aversion, we report both studies which find higher levels of risk seeking as well as lower levels of risk aversion in the subsequent paragraphs.

is abstract, they base their predictions to a larger part on risk neutrality and hence overestimate others' willingness to take risks.²

Besides the findings of increased risk taking in decisions for others, there is also some evidence for lower levels of risk. First, Reynolds et al. (2009) compare decisions of participants when they decide between a safe and a risky option for their own and when they decide between the same options for a group of people. They find them choosing higher levels of risk when deciding for themselves as compared to deciding for others. Eriksen and Kvaløy (2010) find that participants take significantly lower levels of risk when they make investments for other people as compared to making investments for themselves. The authors interpret this finding by means of the empathy gap (Loewenstein 1996) such that agents underestimate their principals' willingness to take risks. In Charness and Jackson (2009), participants play a stag-hunt game. In one treatment, they take the decision for their own account, while in the other treatment a participant takes the decision for another passive participant as well. They find less subjects choosing the risky option when another player earns the same payoff. Montinari and Rancan (2018) use lotteries with negative expected returns. They find participants investing more for themselves than for friends. Yet, they find no difference in investments for themselves and on behalf of a stranger. Bolton and Ockenfels (2010) let participants choose between a risky and a safe option. They compare the decisions when they affect the chooser's payoff only and when they affect both the chooser's as well as another participant's payoff and find that choices are more risk averse in the latter situation.³ Füllbrunn and Luhan (2017) hold the variety of different designs responsible for the different results. They point out differences concerning the payoff alignment between agents and principals in the existing literature. On the one hand, agents take decisions for their principals only and earn a fixed payment.⁴ On the other hand, the same decision is implemented for themselves.⁵ In their own experiment, they find evidence for a cautious shift, which is independent of payoff alignment. Additionally, they find that agents invest according to what they believe their principals wish to invest for themselves, which stands in contrast to Chakravarty et al. (2011).

By means of our experimental design, we aim to address this controversy. First, we give principals the opportunity to communicate their preferred investment profile to their agent, thereby reducing the information asymmetry. Furthermore, since we know the agents' perception of the investment profiles, we can distinguish two reasons why mismatches happen:

² The term abstract refers to not seeing that person or having a picture of her.

³ This holds as long as choosing the safe option does not imply inequality to the detriment of the chooser.

⁴ Andersson et al. 2014, Chakravarty et al. 2011, Eriksen and Kvaløy 2010, Montinari and Rancan 2018, Pollmann et al. 2014, Polman 2012, and Reynolds et al. 2009.

⁵ Andersson et al. 2014, Bolton and Ockenfels 2010, Charness and Jackson 2009, and Pahlke et al. 2015.

Either the agent deliberately chooses not to follow the principals preferred profile or he perceives the profile differently and follows the principals request according to his own notion of the terms.

3 Experimental Design

3.1 Overview

During the course of the computerized laboratory experiment, participants pass three stages and take on both the role of a client and a financial advisor. The experiment starts with the Profile Perception Stage, in which participants are asked to map investment profiles onto an investment scale ranging from 0% to 100%. In the Preference Stage, we elicit participants' own investment preferences as a client. Finally, we put them into the roles of financial advisors to take an investment decision for other participants. In this Investment Stage, financial advisors are informed about their clients' investment preferences before making their decision. The experiment concludes with a short demographics questionnaire.

3.2 Investment Profile Perception

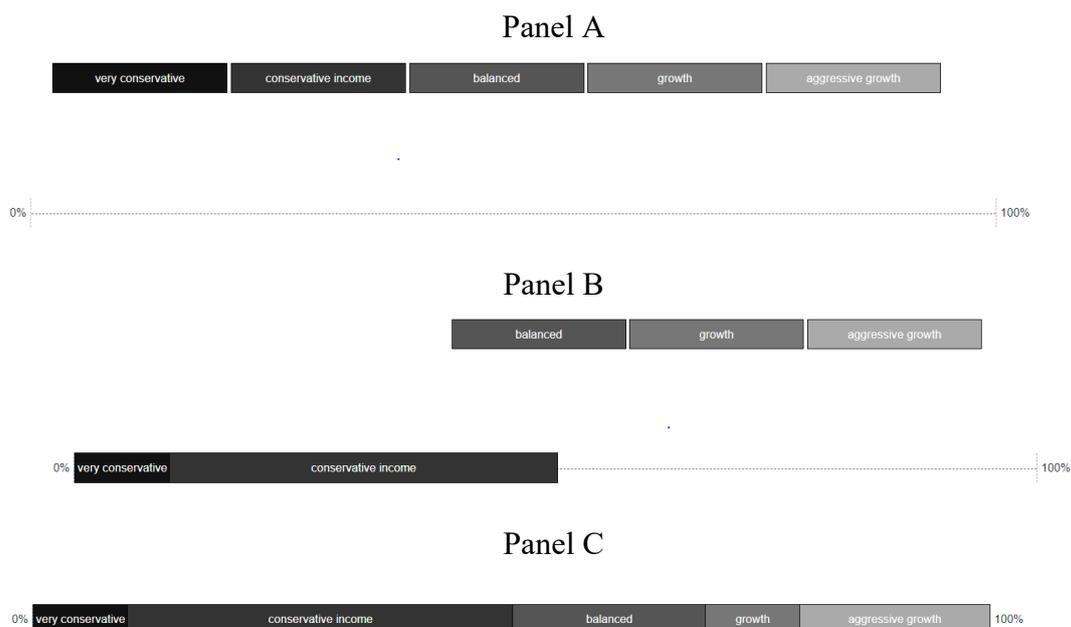
In the Profile Perception Stage, we present participants with investment profile names, which are commonly used in the financial industry.⁶ Participants learn that there are two investment opportunities: a safe and a risky asset. We then ask each participant to map the investment profiles into ranges of investment amounts in the risky asset on a scale from 0% to 100%. That is, we ask participants to reveal which levels of investment into a risky asset they think of when confronted with each investment profile. We enforce consistency, i.e. that investment profiles which imply greater risk appetite than others cannot be mapped into lower risky investment levels. The Profile Perception Stage provides us with an individual measure of how participants perceive the investment profiles in terms of the investment ranges in the Gneezy and Potters (1997) setup.

Figure 1, Panel A shows the starting point of the mapping procedure as it was presented to the participants on their screens. Starting with the investment profile *very conservative* participants can successively drag and drop each profile box onto the scale. Participants can adjust the size of each box, i.e. adjust lower and upper limits of an investment amount in the risky asset such that it matches their perception of the investment profile. Panel B shows an example of an intermediate step in the elicitation process. In this example, the participant has already mapped two of the profiles to risky investment levels and has adjusted the ranges they cover. Panel C finally shows an example of the completed elicitation process. The participant

⁶ These are used by the Mutual Fund Dealers Association of Canada (2014).

perceives a risky asset share of roughly 0-10% to match a *very conservative* profile. The *conservative income* profile covers a wide range of risky asset shares from approximately 10% to 50%. A risky asset share of 50-70% maps into a *balanced* profile. Finally, 70% to 80% and 80% to 100% are considered adequate for *growth* and *aggressive growth* profiles, respectively. Note that the full range of 0% to 100% had to be covered by the five profiles. Simply dragging them onto the scale was not enough, as they would only cover about 80% of the range by default. Participants had to adjust the size of at least one profile to be able to continue. This was implemented to make sure participants had to familiarize themselves with the range adjustment feature.

Figure 1: Investment Profile Perception Elicitation



Notes: The figure shows the process of the investment profile perception elicitation. Panel A shows the starting point of the mapping procedure as it was presented to the participants on their screens. Panel B shows an example of an intermediate step in the elicitation process. In this example, the participant has already mapped two of the profiles to risky investment levels and has adjusted the ranges they cover. Panel C finally shows an example of the completed elicitation process. Note that the full range of 0% to 100% had to be covered by the five profiles. An animated version is available at <https://youtu.be/mcTX1QQX2f4>.

At this point of the experiment, participants only know that there will be a risky and a safe asset. We consciously forgo a more detailed description of the assets in order to better resemble the situation in an actual financial advice setting. It is important that risk assessment tasks are free of complex details to foster understanding (MFDA 2014). Precise details of the financial products are typically only provided to clients at a later stage of the process, when the actual product selection takes place. In the preceding assessment stages, products are commonly abstracted away from and portfolio composition is presented in a simplified manner. They focus, for example, on the broad categories of equity and fixed income assets only (cf. sample investor profiles and asset allocations in MFDA 2014).

3.3 Investment Preferences

In the Preference Stage, we make participants familiar with the details of the Gneezy and Potters (1997) investment task in the agency setting: The client owns an endowment of 10 Euro, which the advisor has to allocate between a safe and a risky asset. The risky asset resembles a lottery and has a return of +250% with probability $p = 1/3$ and a return of $-100%$ with a probability of $1 - p = 2/3$. The expected return of the risky asset is 16.67%. The safe asset has a return of 0%. The advisor decides to invest an amount $x \in [0,10]$ in the risky asset. The remainder $10 - x$ is automatically put into the safe asset. In this stage, all participants take on the roles of clients and state their investment preference by selecting one of the investment profiles they already encountered in the Profile Perception Stage. The selected profile is then communicated to the advisor in the Investment Stage. Participants are reminded that the preferred profile is communicated with the intention that the advisor uses the information when making the investment decision. While this rather explicit demand for compliance with the clients' preferences might seem unconventional for a typical laboratory experiment, it is a very natural aspect in the context of financial advice. Clearly, all of the communication between clients and advisors is aimed at informing and guiding the advisors' subsequent actions in real-life situations. This is especially true if communication takes the form of an investment preference assessment initiated by the advisor.

3.4 Investment Decisions

Finally, in the Investment Stage, all participants become financial advisors and make the investment decision for their clients. In this stage, advisors are informed about the investment profile selected by their clients in the Preference Stage. Advisors are not bound by their clients' investment profile preference, but can freely choose any feasible investment in the risky asset. When deciding on how much to invest on their clients' behalf, advisors have full information: For each client they see the preferred investment profile. For reference, they are also reminded of their own mapping of investment profiles into investment levels in the risky asset. Advisors make their investment decision by moving a slider to set the risky investment for each one of their clients. Next to the slider, advisors see the clients' resulting minimum and maximum payoffs as well as their own resulting minimum and maximum advisor payoffs. The payoff displays update with every move of a slider for instant feedback on the effects of different investment levels. Advisors always take the investment decisions for all of their clients simultaneously on the same screen. This allows them to easily differentiate investments between different profile preferences, if they intend to do so. Figure 2 shows an example of the decision screen.

At this point, agents and clients are also aware of a weak accountability mechanism: After learning about their payoff relevant role, the investment decision of their advisor and their final payoff, clients are asked to send a short message to their advisors expressing their (dis)satisfaction with the investment decision. The pre-defined messages read “I am [very satisfied / satisfied / dissatisfied / very dissatisfied] with your decision”.

Figure 2: Agents’ Decision Screens



Notes: The figure shows the lower half of the advisors’ decision screen in the Group treatments. The first column shows the investment profile communicated by each of the five clients. The next three columns show investments in the safe and risky assets as well as the decision slider, which is used to allocate the endowment between the two. In this example, the decision maker has already set investments for the first three clients, but has not started to select investments for the last two (no default slider position). The next two columns show the payoffs the clients receive in the investment success / no success cases. The final two columns show the corresponding payoffs to the advisor. All values in the table update instantly with slider movements. Below the decision table, a reminder of the agent’s own mapping of the investment profiles to investment shares in the risky asset is shown. An animated version is available at <https://youtu.be/s7IS2FRWY1o>.

3.5 Treatments

Using a 2-by-3 between-subject design, we systematically vary the number of clients on whose behalf advisors have to take the investment decision as well as the payment schemes for advisors. In the Single treatments, advisors take the investment decision for exactly one client whereas in the Group treatments, advisors take the decision for a total of five clients simultaneously. Advisors can set the investment for each of their five clients individually. In the Fixed payment scheme, advisors get a fixed payment for their investment decision. Under Limited Liability, advisors get a fixed payment plus an additional share of the positive return of the investment decision. That is, they do not face any downside risk. Finally, in the Co-Investment condition, advisors get a fixed payment and a share of their client’s portfolio after the investment decision and its outcome have materialized.

Single and Group Treatments

In the Single treatments, the computer matches two participants within a session. We are particularly interested in situations in which a client’s and an advisor’s preferred investment strategies differ. Therefore, we match them such that we observe the highest possible variability

of investment preferences within pairs. Unbeknownst to them, both participants take the investment decision as advisors for each other. After all investment decisions have been made, one of the two participants in a pair is randomly selected to be the payoff-relevant advisor, the other one becomes the client.

In the Group treatments, participants are allocated into groups of six. We introduce this treatment in order to increase the probability of agents observing heterogeneous investment preferences of their clients and hence being able to observe the extent to which they differ. We again match groups to maximize the variability of preferred investment profiles. Every participant takes the investment decision as an advisor for every one of the five other participants in the group. Finally, we randomly select three participants of each group to be the payoff-relevant advisors and randomly match each one of them with one of the remaining three participants, who become clients. We choose three advisors from each group in order to keep the probability of being an advisor constant across treatments. Thus, participants in both the Single and Group conditions face a 50% probability of being paid according to their decisions as financial advisors.

The group size of six participants is motivated by our desire to expose participants to the largest possible variation in investment strategies preferred by their agents. With a group size of six, each participant takes the decision for five clients, which is exactly the number of available investment profiles. Yet, only 4 out of the 108 Group treatment participants faced the maximum variety and observed five different investment profiles. 53 of the participants saw four different investment profiles and 47 encountered three different ones. Four participants only observed two different profiles and there was no case in which participants faced just one profile. In total, 96.3% of our participants saw at least three different investment profiles and were thus exposed to a reasonable degree of heterogeneity.

Payment Schemes

We further systematically vary three payment schemes put in place for the financial advisors. Under all payment schemes, clients are paid according to the investment task. In the Fixed payment, scheme advisors get a fixed payment of 5 Euro whereas in the Co-Investment and Limited Liability payment scheme, advisors' pay is partially linked to their investment decision(s). Under the Limited Liability compensation scheme, advisors receive a fixed payment of 5 Euro plus a share of 35% on the positive return of their corresponding clients. That is, advisors do not face any downside risk, because their compensation is bounded below by the fixed payment, which is independent from investment success. However, they do have clear and substantial risk taking incentives to increase their own payoffs, creating a situation of limited liability.

The Co-Investment compensation scheme lies in between the two extremes. Under this compensation scheme, advisors receive a fixed payment of 5 Euro plus a share of 25% on the payoff of their corresponding clients. In contrast to the Limited Liability treatment, advisors' face a downside risk because they can also lose by choosing riskier investments. Still, advisors' expected earnings increase as they invest more in the risky asset. That is, advisors face a similar payoff structure as their clients but in an attenuated form: The variance in payoffs is lower compared to their clients' and in worst case, they end up with a payoff of 5 Euro whereas their clients can end up with a payoff of zero.

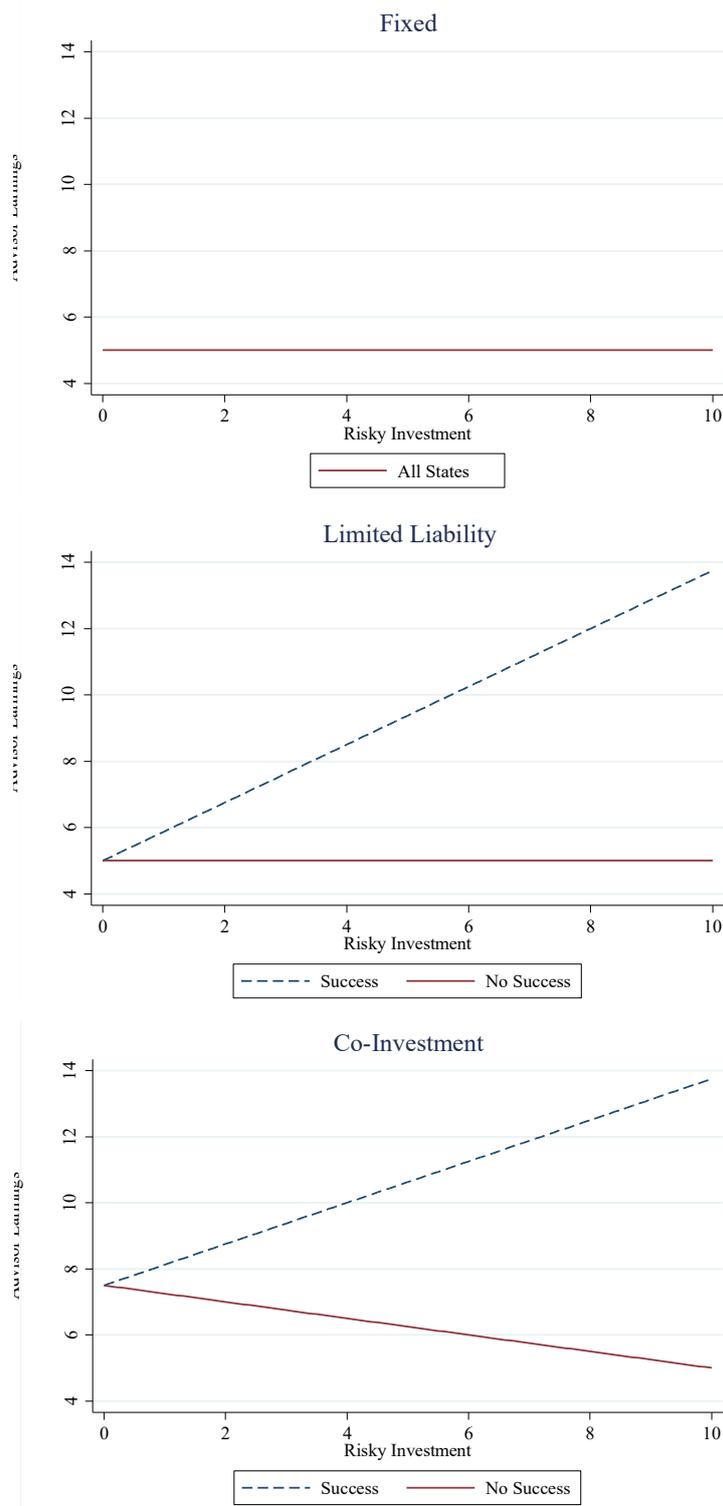
To simplify the experiment, advisors' compensations are always paid by the experimenter and do not come out of clients' portfolios. Figure 3 shows the advisors' earnings as a function of the investment in the risky asset for our payment schemes.

Additional Control Treatments

We also conduct two additional control treatments. The first aims at examining how the uncertainty surrounding the understanding of the investment profiles affects the decisions. Thus, in the *Certainty* treatment, we modify the profile perception stage, while all other stages stay unchanged. In contrast to our main treatments, we do not elicit participants' perception of each investment strategy. We rather establish a common understanding of these terms. This is done by showing participants the five investment profiles and explicitly defining how they are supposed to map into different investment levels.⁷ Each investment profile now covers a fixed range of 20% as shown in Figure 4. Fixing the perception of the profiles removes the possibility of observing unintended mismatches: If an advisor follows his client's preferred profile, the client will perceive the advisor's behavior as in line with his investment request by design. If there is a mismatch, it must be because of advisors deliberately choosing an investment that is incompatible with clients' preferences. The remaining experiment stays unchanged: Clients pick their preferred investment profile, which is communicated to their advisor. Advisors make the investment decisions. The compensation is analogous to the Limited Liability treatment. We only run the Single variant of our design for the *Certainty* condition.

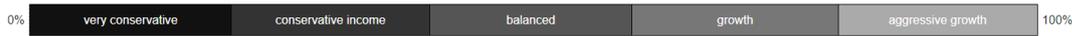
⁷ We make sure participants engage with the scale and understand it correctly by asking additional comprehension questions in this treatment.

Figure 3: Advisors' Compensation Schemes



Notes: The figure shows the three payment schemes put in place for the financial advisors. In the Fixed payment scheme advisors get a fixed payment of 5 Euro. Under the Limited Liability compensation scheme, advisors receive a fixed payment of 5 Euro plus a share of 35% on the positive return of their corresponding clients while under the Co-Investment compensation scheme, advisors receive a fixed payment of 5 Euro plus a share of 25% on the payoff of their corresponding clients.

Figure 4: Preference Perception Stage



Notes: In the Certainty treatment, we establish a common understanding of the investment strategies by fixing each interval to a size of 20%.

Note that our main treatments all include accountability aspects, which might be driving the effects we observe: 1) the experiment is framed in a finance context; 2) clients can tell their advisors how they would like them to invest; and 3) clients can send messages expressing their satisfaction or dissatisfaction with their advisors' decision after they learn about the investment decision and its outcome. Thus, in a second control condition (*No Accountability*), we remove these aspects. The instructions are neutrally framed⁸, there is no elicitation and no explicit communication of investment preferences, and clients can no longer express their satisfaction or dissatisfaction with the advisors' decisions. In line with the first control condition, we again run the Single / Limited Liability variant only.

3.6 Procedures

The experiment was conducted in the experimental laboratory at Heidelberg University in Germany. Sessions were organized with the software hroot (Bock et al. 2014) and the experiment was programmed using oTree (Chen et al. 2016). Participants entered the laboratory and were randomly placed at one of the 20 separated computers. All instructions were displayed on-screen and questions were answered in private. We ensure understanding of the instructions by letting participants advance through the instruction section only after answering a set of comprehension questions correctly. The experiment concluded with a short demographic questionnaire. Participants received cash payments in private and were dismissed from the laboratory. A total of 434 participants took part in the experiment (56.2% female, 30.2% economics students, average age: 23.0). In total, we ran 26 sessions (6x 3 for the main treatments and 2x 4 for the additional control conditions) with 324 participants in the main treatments and 110 participants in the controls. Each session lasted about 45 minutes and participants earned an average amount of 11.85 Euro including a show up fee of 4 Euro.

4 Results

Our main intention is to investigate what drives risky investment shares in an agency setting. To do so, we divide the analysis into two subparts. We focus on advisors' behavior first and investigate whether they follow their clients' profiles or rather base their decision on their own risk preference. Next, we take on the perspective of clients and investigate whether they "get

⁸ For example, we use "decision maker" and "recipient" instead of "advisor" and "client".

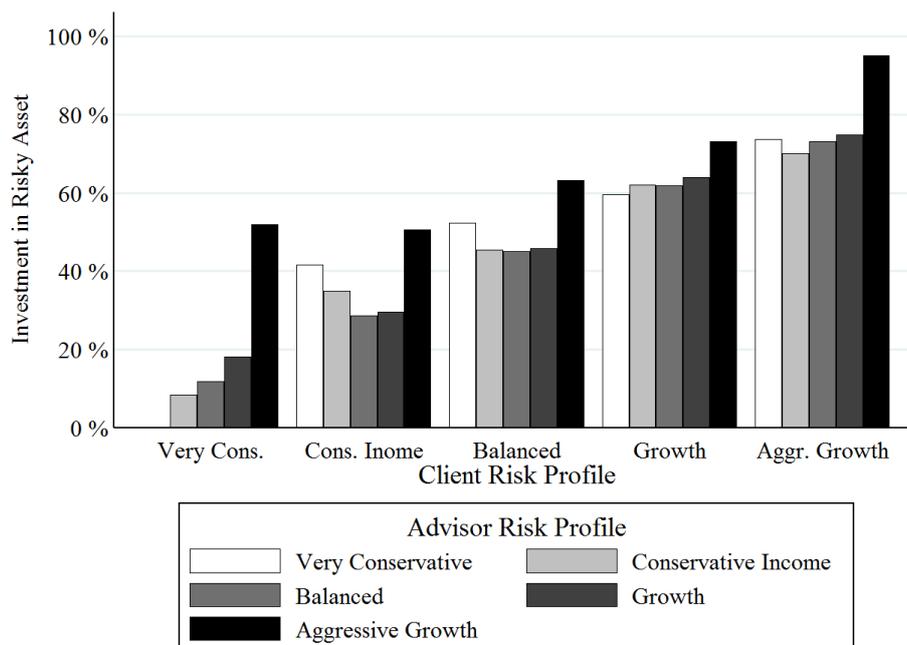
what they want”. As an intermediate step, we examine the perception of the investment profiles and how differences thereof might affect the decisions taken. Unless otherwise stated, we base the results on our six main treatment conditions. We only draw upon the data from our control conditions in the discussions in section five.

4.1 Advisors’ Behavior

Visual Inspection

We start our analysis by an examination of the investments in the risky asset. We are interested in whether advisors follow their clients’ preferred investment profiles or if they implement investments that correspond to their own risk preference. Figure 5 shows the average investment in the risky asset for different combinations for the clients’ and advisors’ preferred investment profiles. In line with Foerster et al. (2017), we find that advisors’ own risk preferences influence the risk they take on behalf of their clients. Within each profile preferred by clients, we find that the average investment in the risky asset increases with the preferred profile of the advisor. A first visual inspection reveals that both the risk preference of the client as well as the risk preference of the advisor seem to play a role when taking risky decisions on behalf of others.

Figure 5: Investment in the Risky Asset by Clients’ and Advisors’ Profiles



Notes: This figure shows the average investments in the risky asset for each client and advisor profile combination. Client Risk Profile refers to the preferred investment profile of the client while Advisor Risk Profile refers to the preferred investment profile of an advisor.

As a second step, we are interested in whether advisors follow their clients’ investment profile given how they perceive the scale of investments in the risky assets and the profile of their client. That is, we base the analysis in this section on whether advisors implement the

profile of their clients according to the advisors' perception, irrespective of how the client himself perceives the profile. Indeed, in 49.3% of the decisions over all main treatments, advisors follow their clients' preferred investment profile.⁹ This is despite the fact that none of our payment schemes provides incentives to follow the clients' wishes. In contrary, the Limited Liability conditions even unambiguously incentivizes advisors to take risks above and beyond their client's preferences for own monetary gain.

Table 1: Risky Investment Shares by Treatment Condition

	Compensation		
	Fixed	Co-Investment	Limited Liability
Single	47.8%	50.7%	50.9%
Group	46.9%	50.1%	56.5%

Notes: For treatment Single the number of observations is 54 for each compensation treatment. For Group it is 270, because we observe five investments decisions (not independent) for each participant.

Risky Investment Shares

Table 1 provides an overview of risky investment shares separated by treatment conditions. In order to investigate advisors' investment behavior more formally and test for treatment differences, we use OLS regressions to estimate the investment in the risky asset. In specification (1), we regress the risky share on the advisors' and the clients' preferred investment profiles, representing their risk preferences. In specification (2), we add treatment indicators and their interactions, as well as control variables. Table 2 reports the results. Disregarding treatment differences, clients' and advisors' preferred investment strategies already explain a large fraction of the observed variation. The effect of clients' preference on the amount invested into the risky asset is larger than the effect of advisors' preferences (F-test, p -value < 0.01 for specifications (1) and (2)). When considering our treatment conditions, we observe that investments are lower in the group conditions under fixed payments, but react differentially to the two other compensation schemes. We therefore conclude that advisors base their investment decisions to large parts on their clients' preferences but also consider their own risk preferences. This is generally in line with the visual impression of Figure 5.

⁹ If we allow for a 'wiggle room' of 5 percentage points (0.50€ in the investment task) for the perception of the profiles, advisors follow their clients in 59.9% of the decisions.

Table 2: Regression Analysis Investments in the Risky Asset

	Investment in Risky Asset	Investment in Risky Asset
	(1)	(2)
CI Treatment		0.02 (0.35)
LL Treatment		-0.05 (0.35)
Group Treatment		-0.44* (0.26)
CI × Group		0.92** (0.45)
LL × Group		0.88* (0.49)
Profile Client	1.49*** (0.07)	1.52*** (0.07)
Profile Advisor	0.28** (0.13)	0.30** (0.13)
Age		0.05 (0.03)
Female		0.01 (0.24)
Constant	-0.60 (0.47)	-2.07** (0.87)
Observations	972	972
R ²	0.37	0.40

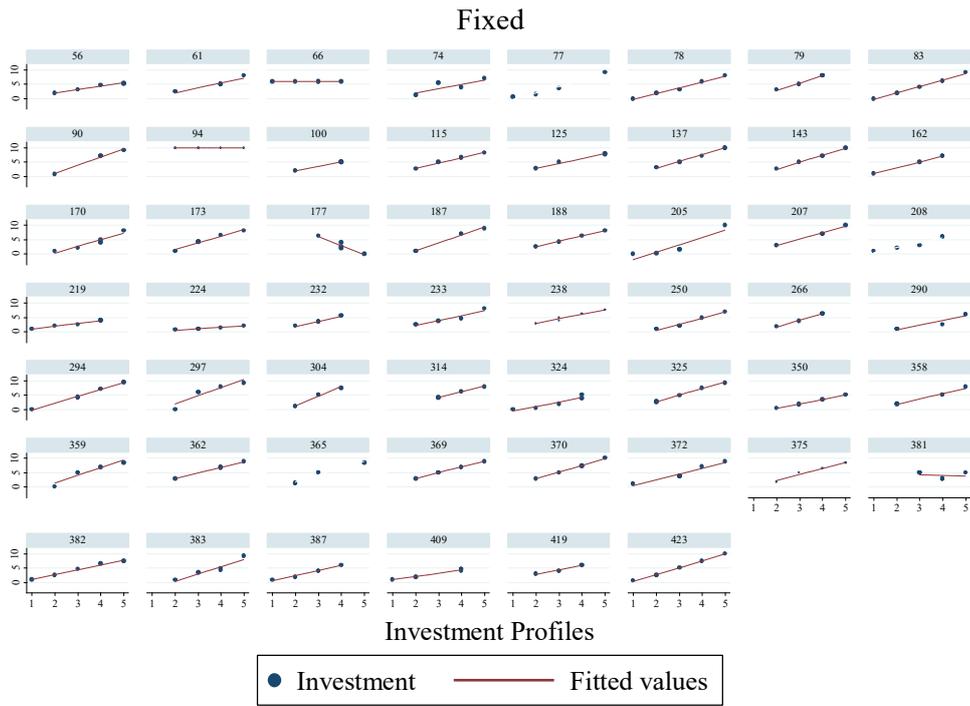
Notes: We report OLS regression coefficient estimates with robust standard errors in parentheses. The standard errors are clustered on the individual level. The dependent variable is investment in the risky asset. CI and LL indicate the treatment conditions Co-investment and Limited Liability, respectively. Profile Client indicates the category the client has chosen as preferred investment strategy. Profile Advisor indicates the profile the advisor has chosen as preferred investment strategy in the Preference Stage. ***/**/* indicate significance at 1%/5%/10%.

Portfolio Customization and Monetary Incentives

While we observe that about half of our advisors factually do not invest in a way that is in line with their clients' preferences, they might still have the intent to do so, but fail in implementing their intent. The group treatment makes the heterogeneity of different investment profiles among an advisor's clients salient. The advisors in this condition are aware that clients have different tastes. By measuring how strongly individual advisors differentiate between clients with different investment profile preferences, we can uncover the advisors' intentions to follow their clients' preferences. The more they take their clients into account, the stronger they should differentiate investments between profiles. The less importance they put on clients' preferences, the more similar should be the invested amounts for all clients. Furthermore, we are interested in whether the compensation scheme affects the extent of differentiation between clients with different investment preferences.

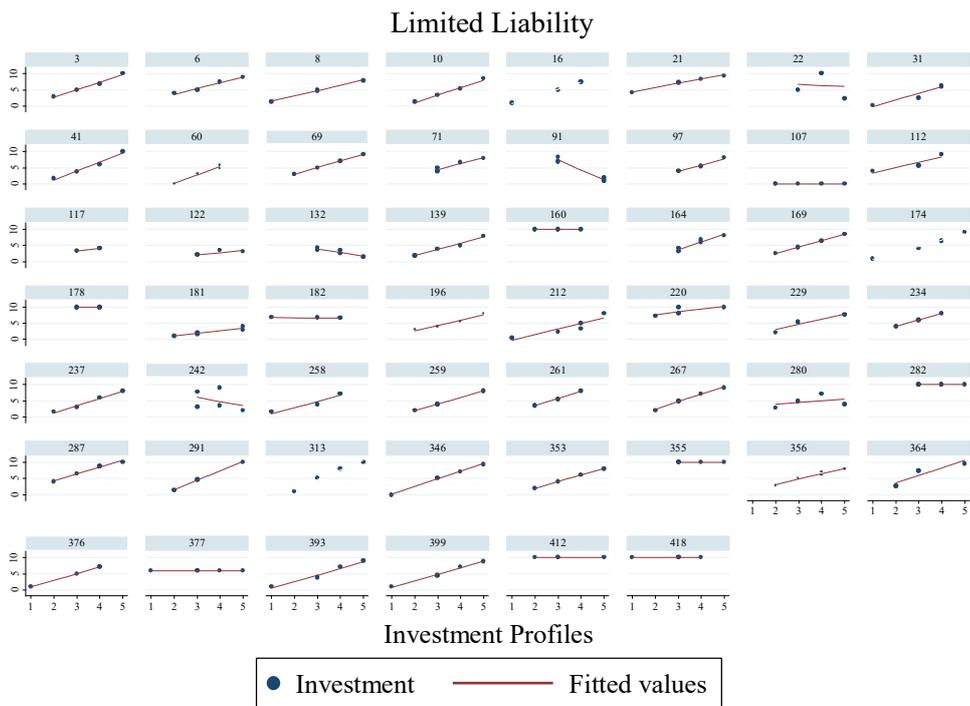
Due to the monetary incentives under the Limited Liability compensation, we expect advisors to invest more and differentiate less as compared to the Fixed treatment. Figures 6, 7 and 8 show the investments chosen by each advisor for his five clients and illustrate how they differentiate for different investment profiles under the different compensation schemes. The visual inspection points towards high levels of differentiation. Under the Limited Liability compensation, multiple advisors ignore their clients' investment profiles and choose the highest investment level for any client (see for example agents 160, 282, 355, 412, and 418 in Figure 7). Nevertheless, a majority of advisors still differentiates between different investment profiles to some degree, which highlights advisors' willingness to follow their clients. It makes salient that even under the Limited Liability condition advisors differentiate and are willing to forgo higher expected payoffs in order to implement their clients' investment profiles. This confirms our prior finding that advisors strongly consider their clients' preferences when taking a risky investment decision on their behalf. Figure 9 aggregates the fitted values for our three compensation schemes. It summarizes the findings from above: The degree of differentiation is highest under the Fixed compensation and lowest under the Limited Liability compensation. The correlation coefficients are all positive and significantly different from zero (Fixed: $\rho = 0.79$, $p < 0.01$; Limited Liability: $\rho = 0.49$, $p < 0.01$; Co-Investment: $\rho = 0.61$, $p < 0.01$, all of them are spearman correlation coefficients). The correlation between the clients' profiles and the investment in the risky asset is strongest under Fixed compensation and (marginally) significantly different from both correlations under Limited Liability (0.79 vs. 0.49, $p < 0.01$) and Co-Investment compensation (0.79 vs. 0.61, $p = 0.055$).

Figure 6: Risky Investment by Agent in Fixed treatment



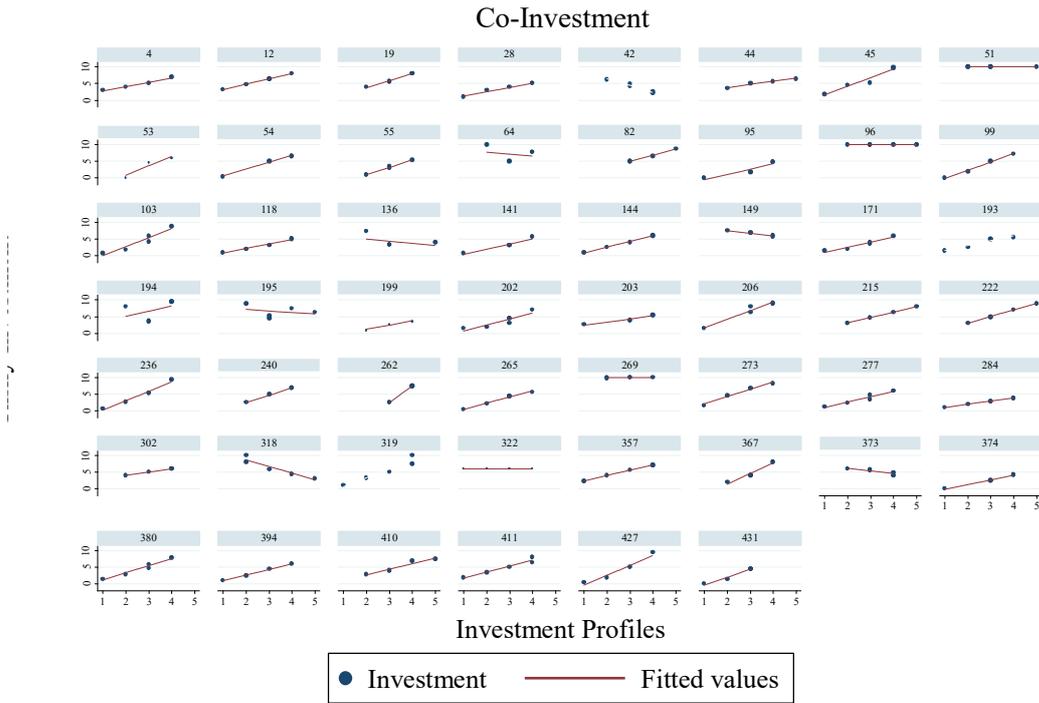
Notes: The graph shows for each participant in the Fixed/Group treatment the investment given the communicated profiles (1 = very conservative, 5 = aggressive growth) of their clients as well as the fitted values.

Figure 7: Risky investment by Agent in the limited liability treatment



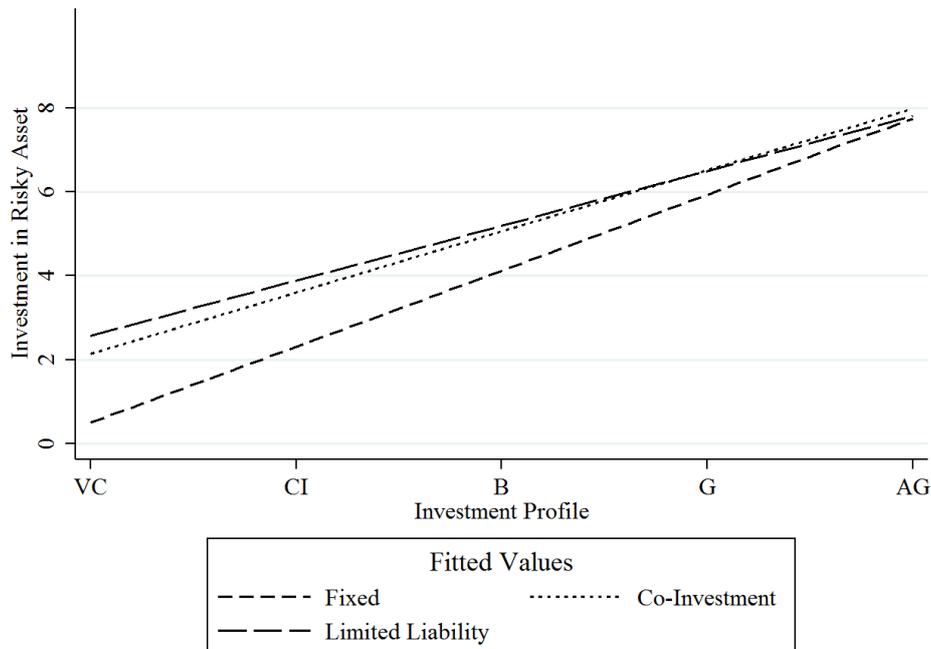
Notes: The graph shows for each participant in the Limited Liability/Group treatment the investment given the communicated profiles (1 = very conservative, 5 = aggressive growth) of their clients as well as the fitted values.

Figure 8: Risky Investment by Agent in the Co-investment Treatment



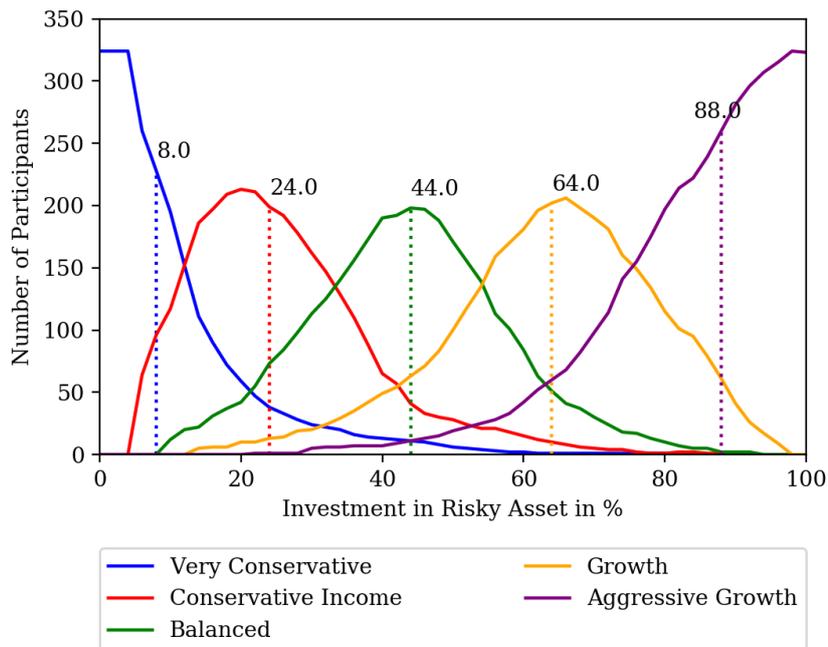
Notes: The graph shows for each participant in the Co-Investment/Group treatment the investment given the communicated profiles (1 = very conservative, 5 = aggressive growth) of their clients as well as the fitted values.

Figure 9: Risky Investments in Group Treatments by Compensation Scheme



Notes: The graph shows aggregated investments for each communicated investment profile in the Group conditions. We plot separately fitted values for each compensation scheme.

Figure 10: Perception of Investment Profiles



Notes: For each possible investment share in the risky asset, the graph shows the number of participants who mapped the respective investment profile to the investment share. The individual distributions are labeled with their medians.

4.2 Clients' Perspective

The question of how people perceive risks has attracted much research effort. Diacon (2004) compares the perceptions of individual consumers and expert financial advisors and finds strong differences in the perception of financial risks between both groups. It has also been demonstrated that perceptions do not only vary between experts and laymen for financial risks but also for physical or engineering risks (Slovic 1987). Note, that in our experiments, all participants provide their perceptions before they even know that they will take on different roles later on. Combined with our rather homogeneous standard student sample and random treatment assignment, we can only observe heterogeneity in the perception of risk profiles but cannot study systematic differences between advisor and client roles. Figure 10 shows the distributions of perceptions of the different investment profiles in our sample. The figure highlights a sizeable overlap of the profiles. For instance, investments in the risky asset between 30% and 60% of the endowment are perceived to match any of the available investment profiles by some participants. Consequently, there is a high degree of heterogeneity in the perception of the different investment profiles and it is far from obvious what they mean to people subjectively. Moreover, the left-shifted medians in Figure 10 provide slight evidence for risk

aversion in the perception of risky investments.¹⁰ Taken together, the investment profiles commonly used in financial advice appear to be very noisy in their perception.

The most interesting aspect for clients, naturally, is whether they end up with an investment level that is compatible with the preference they indicated to their agents, i.e. whether clients “get what they want”. Across all treatments, this is only the case for 43.8% of all clients. Table 4 breaks this down by treatment conditions. Each cell shows the percentage of clients that get what they want. For the group treatments, clients seem to get what they prefer more often compared to the single treatments, however none of the differences are statistically significant.

Table 4: Share of Clients Who Get What They Want

	Compensation		
	Fixed	Co-Investment	Limited Liability
Single	42.6%	42.6%	40.7%
Group	54.4%	45.6%	45.9%

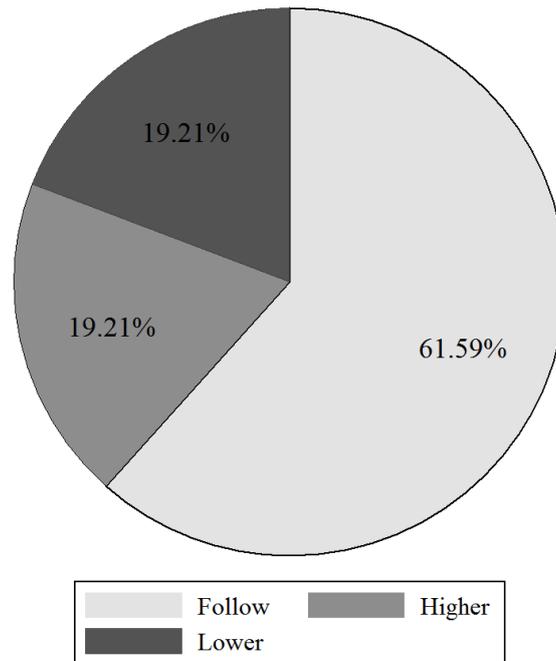
Notes: The table reports the share of clients who get what they prefer according to their own perception of the investment strategies.

Given this dire picture, one might reasonably ask whether the situation remains the same if we restrict the analysis to those agents, who, according to their knowledge, did their best to implement the profiles preferred by their clients. For only 61.6% of these investments, clients perceive the investment as being compatible with their preferred investment profile. Expressed differently, in 38.4% of the decisions in which agents try to implement their clients’ preferred investment profiles, they fail to comply from their clients’ point of view. With 19.2% of clients perceiving the decision being lower than preferred and 19.2% perceiving the decision as being higher than preferred there seems to be no systematic deviation, but simply a mismatch in communication on how the strategies are translated into investments in the risky asset. These results are depicted in Figure 11.

¹⁰ In comparison to a uniform distribution in which each one of the five categories covers 20% of the scale.

Figure 11: Translation Error

Principals' Perception when Agents followed According to their Own Perception



Notes: The graph shows how clients perceive the decisions in which advisors followed their preferred investment profile according to the agents' perception of the profile.

5 Discussion

Our results suggest that advisors are in general willing to follow their clients' preferences. Even under unambiguous monetary incentives to take larger risks, advisors strongly consider their clients' preferred investment profiles. Yet, our results hint at an explanation why financial advisors could be perceived to deviate from their clients' preferences. We find evidence for a fundamental problem of communication in financial advice when relying on the use of investment profile terminology. There is a large degree of heterogeneity in the perception of these profiles, which opens up the door for unintended mismatches between advisors' decisions and clients' preferences. The question arises whether this translation error can be reduced by better defining the investment profiles and fostering a common understanding between advisors and their clients.

To shed some light on this issue, we conducted the *Certainty* treatment, which does not leave any room for translation error by design. Disregarding advisors intentions, we find that 42.6% of the clients in this treatment get what they prefer. This is not significantly different from the 40.7% (test of proportions, $p = 0.85$) in the most comparable Single/Limited Liability treatment. In terms of the outcome clients end up with, the *Certainty* treatment does not seem to make a difference. However, there are opposing effects acting behind the scenes. In our main treatment, clients may end up with an investment that is compatible with their preferences,

despite the fact that their advisor did not intent to implement it. This can happen by chance because of the different perceptions of the investment profiles.

Therefore, a more adequate test of the effects of Certainty is to consider only those observations from our Single/Limited Liability treatment, in which the advisors' intent is to implement the clients' preferences. Limiting the analysis to these observations reveals that the possibility of translation error leads to clients getting an investment they are comfortable with in 46.2% of the cases, substantially less than the 100% in the Certainty case where advisors always correctly implement if it is their intention to do so (test of proportions, $p < 0.01$). However, the Certainty treatment also shows that the absence of uncertainty about the clients' perception of the investment profiles increases the effect of incentives on agents' behavior. Investments in Certainty are higher than in the main Single/Limited Liability treatment after controlling for advisors' and clients' preferences.¹¹ The share of advisors who invest more than preferred by their clients is significantly larger than the share of advisors who invest less than preferred in the Certainty treatment (test of proportions, 0.44 vs. 0.13, $p < 0.01$). This is not the case for the Single/Limited Liability treatment under uncertainty (test of proportions, 0.30 vs. 0.22, $p = 0.38$).

The consistently high degree to which advisors follow their clients' preferences in our experiment is quite remarkable, yet in line with observations by Ifcher and Zarghamee (2018) and Rud et al. (2019). While observing larger heterogeneity in preferences among clients (Group treatments) appears to increase differentiation as well as investment levels slightly, different incentive schemes do not have much of an effect on investment levels. We hypothesize that the accountability aspect, which is common to all of our main treatments, could be the driving force behind this result. Recall that in all treatment conditions, accountability can stem from multiple sources: First, clients tell advisors how to invest for them. Second, clients can always hold their advisors directly accountable for their decision by sending messages of satisfaction or dissatisfaction with the investment decisions after the fact. Finally, the clear and consistent framing of the experiment as a situation of financial decision-making might instill a heightened feeling of responsibility in agents for their clients' well-being. After all, financial decisions are often considered a matter of mutual trust. To investigate to which degree accountability affects our findings, we conduct our second, additional control treatment *No Accountability*. As described in the design section, we remove all elements which could reasonably make advisors feel accountable for their actions, yet, we do not find a significant

¹¹ We regress investment in the risky asset on a Certainty treatment indicator and advisors' and clients' preferred investment profiles. The OLS coefficient estimate for the Certainty indicator is 1.19, $p < 0.05$.

increase in the risky investment shares. It seems that advisors have a feeling of responsibility for their clients, even in the absence of accountability-enhancing design aspects.

Foerster et al. (2017) report that advisor characteristics have a strong influence on portfolio allocations for clients. In fact, advisor characteristics appear to be even more powerful in shaping portfolios than clients' preferences. While both effects persist in our highly controlled laboratory experiments, their strengths change. We find decisions for clients to be predominantly driven by client preferences and estimate advisors' influences to be much weaker. One reason for this difference could be selection. Some financial institutions have been found to select their employees based on behavioral criteria associated with misconduct (Egan et al. 2019). If clients select advisors based on advisor characteristics, or advisors select their target group based on potential clients' characteristics, the strong effects observed by Foerster et al. (2017) can be expected to be dampened in a setting which does not allow for selection in either direction.

6 Conclusion

We study whether and how financial advisors shape their clients' investment portfolios in a highly controlled laboratory environment. In general, we observe a high willingness of advisors to follow their clients' preferred investment profiles. Even in light of unambiguous monetary incentives to disregard their clients' preferences, advisors still differentiate between various investment profiles. Yet, clients' portfolios are also affected by their advisors' personal preferences. While our results generally conform the findings of Foerster et al. (2017), we do not find the advisors' effect on clients' portfolios to be as pronounced as suggested by their analysis of the empirical data.

By means of our experimental design, we also study the financial advice relationship from another perspective: We examine how clients perceive the investment decisions taken by advisors on their behalf. This reveals that even though financial agents are highly keen to follow their clients' preferred investment profiles, they often fail to achieve their goal from their principals' perspective. One reason for this is that the investment profile terminology, which is often used in financial advice, is very noisy in their perception and people associate them with highly heterogeneous investments into risky assets.

Our results have practical implications for financial advice: In spite of the common perception that financial advisors deviate from their clients' interests, we find advisors to be in general willing to follow their clients' preferences. This still holds under compensation schemes which provide strong financial incentives for advisors to take large risks. However, our findings also point to a fundamental problem in the communication of investment preferences in

financial advice. Misunderstanding between advisors and clients are abundant and thus might strengthen the common perception that financial decisions taken by advisors deviate from their clients' interests.

References

- Andersson, O., Holm, H. J., Tyran, J. R., and Wengström, E. (2014). Deciding for others reduces loss aversion. *Management Science*, 62(1), 29-36.
- Bock, O., Baetge, I., and Nicklisch, A. (2014). hroot: Hamburg registration and organization online tool. *European Economic Review*, 71, 117-120.
- Bolton, G. E. and Ockenfels, A. (2010). Betrayal aversion: Evidence from brazil, china, oman, switzerland, turkey, and the united states: Comment. *American Economic Review*, 100(1), 628-633.
- Bradbury, M., Hens, T., and Zeisberger, S. (2015). Improving Investment Decisions with simulated experience. *Review of Finance*, 19, 1019–1052.
- Chakravarty, S., Harrison, G. W., Haruvy, E. E., and Rutström, E. E. (2011). Are you risk averse over other people's money?. *Southern Economic Journal*, 77(4), 901-913.
- Charness, G., and Jackson, M. O. (2009). The role of responsibility in strategic risk-taking. *Journal of Economic Behavior & Organization*, 69(3), 241-247.
- Chen, D. L., Schonger, M., and Wickens, C. (2016). oTree—An open-source platform for laboratory, online, and field experiments. *Journal of Behavioral and Experimental Finance*, 9, 88-97.
- Diacon, S. (2004). Investment risk perceptions: Do consumers and advisers agree? *International Journal of Bank Marketing*, 22(3), 180–199.
- Egan, M., Matvos, G., and Seru, A. (2019). The Market for Financial Adviser Misconduct. *Journal of Political Economy*, 127(1), 233–295.
- Eriksen, K. W. and Kvaløy, O. (2010). Do financial advisors exhibit myopic loss aversion?. *Financial Markets and Portfolio Management*, 24(2), 159-170.
- Foerster, S., Linnainmaa, J. T., Melzer, B. T., and Previtro, A. (2017). Retail Financial Advice: Does One Size Fit All?. *The Journal of Finance*, 72(4), 1441-1482.
- Füllbrunn, S. and Luhan, W. J. (2017). Am I My Peer's Keeper? Social Responsibility in Financial Decision Making. University of Portsmouth Working Papers in Economics & Finance.
- Glaser, M., Iliewa, Z., and Weber, M. (2019). Thinking about prices versus thinking about returns in financial markets. *Journal of Finance*, forthcoming.
- Gneezy, U., and Potters, J. (1997). An experiment on risk taking and evaluation periods. *The Quarterly Journal of Economics*, 112(2), 631-645.
- Grable, J., and Lytton, R. H. (1999). Financial risk tolerance revisited: the development of a risk assessment instrument. *Financial Services Review*, 8(3), 163-181.
- Hallahan, T. A., Faff, R. W., and McKenzie, M. D. (2004). An empirical investigation of personal financial risk tolerance. *Financial Services Review*, 13(1), 57-78.
- Hsee, C. K., and Weber, E. U. (1997). A fundamental prediction error: Self–others discrepancies in risk preference. *Journal of Experimental Psychology: General*, 126(1), 45-53.

- Ifcher, J. and Zarghamee, H. (2018). Behavioral Economic Phenomena in Decision-Making for Others. IZA Discussion Paper No. 11946.
- Kaufmann, C., Weber, M., and Haisley, E. (2013). The role of experience sampling and graphical displays on one's investment risk appetite. *Management Science*, 59(2), 323-340.
- Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes*, 65(3), 272-292.
- Montinari, N. and Rancan, M. (2018). Risk taking on behalf of others: the role of social distance. *Journal of Risk and Uncertainty*, 57(1), 81-109.
- Mutual Fund Dealers Association of Canada (2014) MFDA Discussion Paper on the Use of Investor Questionnaires available from: <http://mfda.ca/bulletin/Bulletin0611-C/>
- Pahlke, J., Strasser, S., and Vieider, F. M. (2015). *Responsibility effects in decision making under risk*. *Journal of Risk and Uncertainty*, 51(2), 125-146.
- Pollmann, M. M., Potters, J., and Trautmann, S. T. (2014). Risk taking by agents: The role of ex-ante and ex-post accountability. *Economics Letters*, 123(3), 387-390.
- Polman, E. (2012). Self–other decision making and loss aversion. *Organizational Behavior and Human Decision Processes*, 119(2), 141-150.
- Reynolds, D. B., Joseph, J., and Sherwood, R. (2009). Risky shift versus cautious shift: determining differences in risk taking between private and public management decision-making. *Journal of Business and Economics Research*, 7(1), 63-78.
- Roszkowski, M. J. and Grable, J. E. (2005). Estimating risk tolerance: The degree of accuracy and the paramorphic representations of the estimate. *Journal of Financial Counseling and Planning*, 16(2), 29-47.
- Slovic, P. (1987). Perception of Risk. *Science*, 236(4799), 280–285.