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May 23, 2018

Abstract

Two laboratory experiments show that investors perceive a CEO to be more committed to honesty when the CEO resisted, at a personal cost, engaging in earnings management. For investment decisions, a one standard deviation increase in a CEO's perceived commitment to honesty compared to another CEO reduces the relevance of differences in the CEOs' claimed future returns by 40%. This effect is prominent among investors with a proself value orientation. To prosocial investors, their own honesty values and those attributed to the CEO matter directly; returns play a secondary role. Overall, CEO honesty matters to different investors for distinct reasons.

Keywords: Earnings management, honesty, investor preferences, investor segmentation, protected values, social value orientation, trust.

1 Introduction

Corporate fraud and managerial deception have over the recent decades been pervasive and value-destroying to shareholders and to society at large. Prominent responses to such behaviors have included calls to change the structure of managerial compensation, to strengthen board and auditor independence, and in general to increase regulation, often with mixed success (Hail, Tahoun, and Wang, 2017). In this paper, we focus on the potential role of market forces in fostering managerial honesty. A prerequisite for these forces to operate is that stock market participants respond to differing (perceived) levels of honesty of managers. This potential response is the subject of this paper.

While prior work by Hong and Kacperczyk (2009) has established that some "norm-constrained" investors avoid "sin stocks" (which consequently have higher returns and lower valuations than comparable stocks), we examine how perceived managerial honesty and the characteristics of investors may affect investment decisions. We ask: Do investors shun firms (perceived to be) run by dishonest managers (that is, "sinful CEOs") and do they instead invest in firms run by managers perceived to be more honest? And how do investor preferences and values affect this choice? Thus, while Akerlof and Shiller (2015) provide a compelling account of the *supply* of dishonest managers, our paper focuses on the role of investor *demand* for managerial honesty.

To answer these questions, we conduct two fully anonymous laboratory experiments. The general design of both experiments is that participants, cast in the role of investors, are given the choice between investing in one of two companies, which are run by CEO A and CEO B, respectively. Participants have to infer the two managers' preferences for honesty by observing two pieces of information about the managers: the annual earnings the two managers reported, and

the bonuses they earned due to their earnings announcements. Participants are informed that reported earnings can be influenced in a legally acceptable manner, and that CEOs can increase their bonus by announcing higher earnings. Investors also learn what the CEOs assert as future stock returns of their respective companies, though they also learn that it is possible that these returns will not materialize. Each participant then decides in which company to invest in a series of four choices. Each choice differs in terms of future returns claimed by the two CEOs.

We choose the specific frame of earnings announcements as a representative corporate world situation which (a) exemplifies a potential moral conflict for managers between their personal gains and honest reporting and which (b) offers the opportunity for market participants to draw inferences about managers' commitment to honesty based on their choices. The laboratory experimental method allows us to abstract from other factors that play a confounding role in the reality of corporate reporting and earnings management. (We discuss this frame and issues of external validity of laboratory experimental work in more detail in Section 2.)

The purpose of our experiments is to investigate three hypotheses: The first hypothesis, the *honesty inference hypothesis,* investigates what information determines investors' perceptions of CEO honesty. It asserts that: Participants use the information regarding past earnings announcements – which makes salient that one of the CEOs could have managed earnings to reach the same announced earnings as the other CEO but did not do so – as a signal of the managers' commitments to honesty. This hypothesis and the resulting experimental design are motivated by a large literature that has established that some individuals incur intrinsic costs of lying (Gneezy, 2005; Gibson, Tanner, and Wagner, 2013), and that resistance against incentives to misrepresent facts can serve as a signal of the importance attributed to these lying costs. We build on this literature to construct a measure of the *perceived* CEO preferences for honesty. To measure

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investors' perceptions of each of the two CEOs' commitments to honesty, we use an established scale of "protected values for truthfulness" (Tanner, Ryf, and Hanselmann, 2009; Gibson, Tanner, and Wagner, 2013). The novelty of this research is to use the scale to assess others' (the CEOs') perceived protected values.

The second hypothesis focuses on the motives behind investment choices. Naturally, we expect investors to select the CEO claiming higher future returns and to invest with the CEO to whom they attribute a higher commitment to honesty. Most importantly, the *dishonesty discount hypothesis* posits that investors discount differences in claimed future returns by the two CEOs more, the higher the investors' perception of the commitment to honesty of a CEO relative to another CEO. Our setup of linking investment decisions with perceived CEO honesty is akin to field experimental research on the reputation of eBay sellers.[1] However, to test the *dishonesty discount hypothesis*, it is critical to observe, as we do, each individual investor's subjective perception of CEO honesty, rather than an aggregate reputation score.

Experiment 1 provides strong evidence for the *honesty inference hypothesis*: Investors on average perceive a CEO to be more committed to honesty when he or she refrains from misreporting earnings of the firm. As for investment behavior, investors tend to prefer the CEO with higher claimed future returns and higher attributed protected values for honesty. Importantly, we also find substantial support for the *dishonesty discount hypothesis*: Investors become less sensitive to differences in returns claimed by the two CEOs the more they perceive a CEO to treat honesty as a protected value relative to the other. A one standard deviation increase in a CEO's

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[1] For example, in their seminal work, Resnick, Zeckhauser, Swanson, and Lockwood (2006) find that buyers pay an 8% premium when buying from a reputable seller with positive feedback. This premium might be due to the fact that reputable eBay sellers are less likely to make bold claims and to send counterfeits (Jin and Kato, 2006), that is, they are more likely to be honest.

perceived commitment to honesty compared to another CEO reduces the relevance of differences, between the CEOs, in claimed future returns by about 40%.

Summarizing Experiment 1, perceived values of the CEO matter greatly and investors trade this information off with financial motives. However, a question still stands: does perceived commitment to honesty of the CEO bear the same meaning for different investors?

To test for differences in the meaning of perceived CEO honesty and for the role of other potential differences among investors, we need information about investors' motives and values. Therefore, we first rely on the concept of Social Value Orientation (SVO), which is widely used in psychology (e.g., De Bruin and Van Lange (2000)) and more recently also in economics (e.g., Grossman and van der Weele (2017)). It proposes that individuals do not only differ regarding preferences for specific distributions of self-other outcomes but also regarding inferences they draw from personality information about others (such as honesty). Specifically, while proselfs (who care primarily for their own outcomes) tend to interpret information about the characteristics of others by considering the implications for their own welfare, prosocials (who care for their own and for others' outcomes) tend to interpret such information from a moral perspective. Furthermore, research has also demonstrated that perceived self-other similarity in honesty is of greater importance for prosocials than for proselfs (Van Lange and Kuhlman, 1994). Second, because we expect moral motives to matter more for prosocial investors, we collect data on investors' own protected values for honesty. This is the counterpart to what investors infer about the CEOs.[2]

These data allow us to test the third hypothesis. The *heterogeneous investors hypothesis* holds that proself investors care about future returns and thus invest with the CEO perceived as

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[2] Importantly, social value orientation and protected values for honesty are far from perfectly correlated ($r = .18$), suggesting that they pick up two distinct individual characteristics.

honest due to him announcing more credible returns, while prosocial investors' investment decisions place less emphasis on future returns than on moral considerations.

The results of Experiment 2 support this hypothesis. First, proself investors are sensitive to claimed future returns, but the more they perceive a CEO to treat honesty as a protected value compared to the other, the less return-sensitive they become. These investors thus exhibit the behavior observed on average in Experiment 1 most strongly. They optimize their risk-return profile: On the one hand, they seek higher returns; on the other hand, they desire lower uncertainty about claimed returns. Thus, they trade off these two factors against each other.

Second, prosocial investors invest with the non-earnings management CEO when they themselves have strong protected values for honesty, or when he is perceived as the more honest CEO. We also observe a complementarity between these investors' assessment of CEO honesty and their own protected values for truthfulness. Finally, returns announced by the CEOs do not interact with these investors' own or the CEO's attributed honesty values.

Whether or not individuals have investment experience and the extent to which they are familiar with financial news is unrelated to their assessment of CEO values. The results regarding investment choices hold controlling for these and other demographic factors.

This research makes three contributions to the existing literature. First, while there is a large literature on the determinants of investors' clientele and segmentation effects, [3] few papers examine how investors' moral, religious and social characteristics shape investment decisions. Hong and Kacperczyk (2009) highlight that certain groups of institutional investors may shun sin stocks. They focus mostly on prosocial investors. Other research finds that mutual fund managers

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[3] Clienteles may be characterized, for example, by different information sets as in De Long, Shleifer, Summers, and Waldmann (1990), by distinct dividend appetites as in Graham and Kumar (2006), by heterogeneous beliefs as in Detemple and Murthy (1994) and Basak (2000), or by religious attitudes which are related to risk appetites as in Kumar, Page, and Palt (2011) and Reneeboog and Spaenjers (2012).

who make campaign donations to Democrats invest less in companies that are deemed socially irresponsible (Hong and Kostovetsky, 2012). Our results for prosocial investors underpin these findings as we show that these investors' moral values shape their investment choices. Our results further show that even among the proself investors, CEO honesty matters – not directly for moral reasons, but because it helps these investors secure their investment goals.

Second, this paper extends the literature on the role of trust and credibility in financial markets. We examine the consequences of perceived managerial honesty, whereas other literature has focused on generalized trust.[4] That investors care strongly about trust in partners in financial interactions is a central theme of the "money doctors" theory of Gennaioli, Shleifer and Vishny (2015). Familiarity (Huberman, 2001), loyalty (Cohen, 2009), and long-standing relations (Kostovetsky, 2016) can also play an important role in investment decisions. Firms with accused managerial indiscretions experience negative market reactions (Cline, Walkling, and Yore, 2017), and option backdating increases perceived information risk (Fotak, Jiang, Lee, and Lie, 2017). When employees perceive top management as trustworthy, firm performance is stronger (Guiso, Sapienza, and Zingales, 2015).[5] Complementing this literature, our results suggest that the ability of firms to attract capital also depends on the shareholder perceptions of managerial honesty. The findings on the interaction of investor characteristics with these perceptions provide novel insights into the channels that drive the results.

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[4] Generalized trust means the trust that market participants place in the integrity of the institutional, legal and political environment of a country. For example, Guiso, Sapienza, and Zingales (2008) show that stock market participation is lower in countries with higher distrust in the legal and institutional environments. Giannetti and Wang (2016) show that households decrease stock market participation after the revelation of corporate fraud. Kuhnen and Miu (2017) find that lower socioeconomic status households have more pessimistic beliefs about stock outcomes; it is conceivable that these individuals have also had their trust violated. Pevzner, Xie, and Xin (2015) document that higher social trust in a country is associated with larger reactions to earnings announcements. Bottazzi, Da Rin, and Hellmann (2016) study intercountry trust and venture capital investments.

[5] Furthermore, the work on disclosure quality (e.g., Botosan (1997), Francis, Nanda, and Olsson (2008), and Barth, Konchitchki, and Landsman (2013)) by and large finds that corporate transparency decreases the cost of capital.

Third, the findings on the importance of perceived managerial honesty enrich the literature on managerial characteristics.[6] What we add is the insight that investors do in fact infer moral characteristics of managers, namely their commitment to honesty, from managers' prior actions, and that the consequences of that inference depend on the investors' own characteristics.

2   Methodological comments

2.1   External validity

Experimental simulation of investor decision-making raises questions of external validity.[7] As is often done in the extant literature, we conduct the experiments with students. This is a relevant sample for this study because real-world investors, like students, possess heterogeneous backgrounds and in particular different levels of financial literacy. Furthermore, we do not intend to study exclusively the behavior of, say, sophisticated institutional investors. Do experimental participants understand what they are doing? Many studies in experimental finance and economics use student subjects to study quite complex trading behavior (Plott and Sunder, 1988; Frydman, Barberis, Camerer, Bossaerts, and Rangel, 2014; Asparouhova, Bossaerts, Roy, and Zame, 2016; Frydman and Camerer, 2016), or place students in the situation of corporate decision-makers (e.g., Gächter and Riedl (2005)). Furthermore, the majority of studies has found that the behavior of professional decision makers does not qualitatively differ from that exhibited by student subject groups (DeJong, Forsythe, and Uecker, 1988; Smith, Suchanek, and Williams, 1988; Dyer, Kagel,

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[6] For example, McGuire, Omer, and Sharp (2012) show that managers in more religious areas engage in less accounting earnings management, and Benmelech and Frydman (2015) document that military CEOs are less likely to be involved in corporate fraudulent activity. Furthermore, personal and corporate ethics are correlated (Davidson, Dey, and Smith, 2015; Griffin, Kruger, and Maturana, 2016; Liu, 2016; Grieser, Li, and Simonov, 2017), and so are various types of unethical corporate behavior (Biggerstaff, Cicero, and Puckett, 2015).

[7] See Asparouhova, Bossaerts, Roy, and Zame (2016) and Gillette, Noe, and Rebello (2008) for additional discussion of some of these issues.

and Levin, 1989; Sade, Schnitzlein, and Zender, 2006). So far, only a few studies found that professionals behave differently (Alevy, Haigh, and List, 2007; Kirchler, Lindner, and Weitzel, 2017), though even for professionals, relatively soft priming interventions affect behavior (Cohn, Fehr, and Maréchal, 2017).

In light of this evidence, we include participants with and without familiarity with financial decisions. We also control for whether a participant has made stock investments and whether he or she regularly reads the financial news or not (two proxies for a participant's financial savviness). We find little effect of such characteristics.

There is substantial between-subject variation in both honesty values and social value orientation within our sample, which allows us to explore the role of these ethical characteristics. Information about such characteristics of investors is hardly available in archival research.

2.2   Choice of the concrete frame: Earnings management

Abstractly speaking, we seek to study a real world situation with the following characteristics: Investors know that CEOs have an opportunity to engage in an action Y that, while legal, may, at least in the perception of some investors, exhibit an ethical tension, but where they earn more money doing Y than doing X. Moreover, we want investors to differ in their assessment of how far a CEO's choice of Y instead of X is to be seen as ethically problematic and revealing something about that CEO's honesty.

Earnings management provides an excellent example of such a situation.[8] Several papers highlight the ethical ambivalence of earnings management even if such behavior remains within

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[8] The classic alternative in experimental economics is to choose a completely abstract setting. Even in an abstract experiment, each participant may form a view on which real situations the experimental setup might mirror. There is no consensus in the experimental literature as to which design approach is overall better.

the boundaries of accepted practices established by accounting standards. Dichev, Graham, Harvey, and Rajgopal (2016) refer to earnings management as "prevalent but still problematic" (p. 27). Healy and Wahlen (1999) state that earnings management occurs when managers "choose reporting methods and estimates that do not accurately reflect their firms' underlying economics" (p. 366) with the goal "to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers" (p. 368). Jensen (2005) explicitly refers to earnings management as an act of "lying" (p. 8). At the same time, we emphasize that clearly there are many other explanations that underlie earnings management in reality.[9]

It is precisely due to these widely varying interpretations of earnings management that a laboratory experiment can be useful. Experiments allow us to cleanly identify and isolate the distinct factors influencing behavior by measuring or manipulating specific variables of interest, while keeping others constant. That is, in our experimental setting participants only have information about the choice of one CEO to announce higher earnings, which gives that CEO a higher bonus. We expect that there will be some variation in the extent to which participants attribute a commitment to honesty to the two CEOs.[10]

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[9] Earnings management can be beneficial for short-term existing shareholders; it may be difficult to detect correctly; there are accrual reversals, and earnings per share are not the only key performance indicator used by firms to set their performance-based compensation in practice.

[10] It is, of course, possible that participants make additional inferences about the CEOs that we do not capture, but those would make it less likely that we find consequences of the specific inferences about the CEOs' perceived honesty that we do measure.

3 Experiment 1

3.1 Method for Experiment 1

A total of 141 students from the University of Zurich participated in this fully anonymous (see below) experiment. Of this sample, 63% were economics and 37% were psychology students; 42% were women; the median age was 23. Although we had more male participants and more economics students than females and psychology students, respectively, we have a sufficient degree of demographic variation that we can meaningfully control for individual differences in our analysis. 96 individuals completed a computer version and 45 a paper-and-pencil version of this study. Since we found no differences in the main results between the computer vs. paper-pencil versions (both conducted in the on-campus laboratory), we combine these two data sets.

The full instructions are in the Supplementary Appendix. The instructions informed participants that they would be in the situation of an investor who has to make several decisions to invest with one of two companies. They were also informed that they would be paid at the end of the experiment. Participants received a fixed amount of CHF 10 (≈ US$ 10) for their participation and a variable amount up to CHF 5, depending on their choices in the decision tasks and the success of their investment, implying that the stakes are 1/2 of the fixed compensation for the (short) task.[11]

Participants were then provided with some information about the two companies, which were described to be identical, except that CEO of firm A and CEO of firm B reported different earnings per share (EPS) and thus received different remunerations. More specifically, participants were provided with Table 1 and additional instructions, which stated the following:

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[11] Several studies show that the levels of payments received by participants have no major effects on their behavior if the subjects are paid proportionately to the opportunity cost of their time; see, Davis and Holt (1992) for a survey.

"Firm A and Firm B differ only in terms of their publicly announced earnings per share and the performance-based compensation of each CEO. The CEO pay consists of a fixed and a variable component. The variable component is a bonus, which depends on the announced earnings per share. You know that a CEO can influence, using legal accounting procedures, the earnings per share that are announced to the market.

Table 1: Company and CEO description [not labeled as a Table for participants]

Firm	Earnings per share expected by the market	True earnings per share	Earnings per share announced by the CEO	CEO pay
A	35	Only known to the CEO	31	CHF 1,300,000
B	35	Only known to the CEO	35	CHF 2,200,000

The table shows: Firm B announced higher earnings per share and therefore the CEO of Firm B received higher pay. If the CEO of Firm A had announced the same earnings as CEO B, he would have also earned CHF 2'200'000."

We chose the difference in announced earnings to roughly correspond to the magnitude of earnings management in practice.[12] We limited the difference between the CEOs to one salient observable dimension of managerial behavior to most cleanly identify the influence of perceived CEO commitment to honesty on investor actions. This setup is the flip-side of the setup in Gibson, Tanner, and Wagner (2013), in which participants, cast in the role of CEOs, know that the true earnings per share are 31 cents, whereas the consensus estimate is 35 cents. In that experiment, using earnings management to announce 35 cents amounts to dishonest financial reporting. However, in that experiment, too, participants differ in the extent to which they regard earnings management as dishonest. In the current setting, we expect similar heterogeneity in perceptions of honesty of the CEO who manages the earnings.

Participants then had to respond to several test questions to ensure that they understood the task of the experiment. They could not proceed until all questions were answered correctly.

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[12] Dichev, Graham, Harvey, and Rajgopal (2016) find that public company CFOs believe that about 10 cents of every dollar in earnings is typically misrepresented for companies engaging in within-GAAP earnings management. Private companies' CFOs believe that the extent of misrepresentation is even higher.

Then, to verify whether the two CEOs were perceived to be different, participants were also asked to indicate on bipolar scales (from -2 to +2) to which extent they judged CEO A and CEO B as *short-term* vs. *long-term oriented* and *willing to make financial sacrifices* vs. *not willing to make financial sacrifices*. We also included an item on perceived trustworthiness (*trustworthy* vs. *not trustworthy).*

Participants were then presented with four investment choices (in randomized order), which varied in terms of claimed future returns by the CEOs. We limited investor choices to investing with either A or B (rather than offering them a continuum) to most clearly highlight the fact that investing with one entails a lost opportunity of investing with the other. In two choice situations, CEO B announced a higher future return than CEO A, and in the other two choice situations CEO A announced a higher future return than CEO B (see Table 2).

Table 2: Overview of the four different investment choices
[not shown as a table to participants]

Choice	Company	Claimed returns in %	Return difference (CEO A–CEO B) in %: *ΔReturn*
1	CEO A	10	- 30
	CEO B	40	
2	CEO A	20	- 10
	CEO B	30	
3	CEO A	30	+10
	CEO B	20	
4	CEO A	40	+30
	CEO B	10	

Participants were informed of the amount that they could receive from each investment choice if the predicted increase in shareholder value materialized. The participants also learned that if the investment turned out to be unsuccessful, they would only receive their investment back, but no additional return. The variable *ΔReturn* captures differences in claimed future returns on

the investment between CEO A and CEO B (future return claim CEO A minus future return claim CEO B), thus ranging from -30% to +30%. We did not specify which CEO would be more likely to deliver the announced returns. Instead, as described in Section 3.2 below, we expect that different investors draw different (Bayesian) inferences from this situation.

The four investment choices were presented sequentially on separate pages, and in each case the amounts the participants would actually receive were indicated in parentheses. An example of such a choice situation follows:

*"Now you have the opportunity to invest CHF 50'000 either in Firm A or in Firm B. CEO A claims to increase the firm value by **20%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 10,000** (or CHF 1.00), as well as the investment of CHF 50,000 back (or CHF 5).*
*CEO B claims to increase the firm value by **30%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 15,000** (or CHF 1.50), as well as the investment of CHF 50,000 back (or CHF 5).*

In which company do you invest your money?"

We then assessed, before the impression of the CEOs would fade, the extent to which investors believed each CEO to be committed to honesty.[13] For this, we draw on the concept of protected values for truthfulness, using the measure developed and validated by Tanner, Ryf and Hanselmann (2009) and applied in Gibson, Tanner, and Wagner (2013). The protected values for truthfulness scale we use in the main analysis aggregates two distinct but related subscales. One subscale (five items) captures more affective reactions to (real or anticipated) violations of honesty (see also Tetlock, Kristel, Elson, Green, and Lerner (2000)). The other subscale (four items) captures more the cognitive notion of an individual's unwillingness to consider trade-offs of honesty based on cost-benefit analyses (see also Baron and Spranca (1997)). Prior studies have

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[13] One caveat of our experimental setup could be that participants' perceptions of the two CEOs' commitment to honesty might not only depend on the CEOs' earnings announcements but also, for self-consistency reasons, on their investment choices. Evidence from an additional survey, reported in Section 3.3.3, suggests that this was not the case.

tested the scales for their psychometric qualities and revealed that this protected values measure

reflects strong moral stances and core beliefs (Tanner, Ryf, and Hanselmann, 2009). It correlates

positively with moral identity (Aquino and Reed, 2002), ethical idealism (Forsyth, 1980), and

deontology and intuitionism (Witte and Doll, 1995). Critically for this study, individuals scoring

high on the protected values scale respond less to economic incentives to lie (Gibson, Tanner, and

Wagner, 2013). In addition, Dogan et al. (2016) provide evidence that when compared to other

candidate measures (e.g. HEXACO, moral identity), the protected values measure is the strongest

predictor of resistance to economic incentives.

In this first experiment, we were only interested in how participants *perceived* CEO A's and

CEO B's respective commitment to honesty as measured by the protected values scale.[14] All items

were rated on 7-point scales (details regarding the two sets of questions are in the instructions in

the Supplementary Appendix). The average of all responses was used as an index of Perceived

$PV_{honesty}$ (for each CEO), that is, Perceived $PV_{honesty}$ CEO A and Perceived $PV_{honesty}$ CEO B. The

scales have high internal consistency, as assessed by Cronbach's Alphas ($\alpha_{CeoA} = .93$, $\alpha_{CeoB} =$

$.90$).[15] ΔCEO_PVHon then is the difference in perceived commitment to honesty between CEO A

and CEO B (Perceived $PV_{honesty}$ CEO A - Perceived $PV_{honesty}$ CEO B).

At the end, participants were debriefed and paid. While, as described above, the ex ante

relationship between investment and payment was left ambiguous to reflect real life situations, the

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[14] Specifically, participants were asked what they thought the CEO A's (CEO B's) opinions were regarding managing
the earnings (first subscale, five items): *very immoral* to *very moral*, *not at all praiseworthy* to *very praiseworthy, not
at all blameworthy* to *very blameworthy*, *not at all outrageous* to *very outrageous*, *not at all acceptable* to *very
acceptable*. In addition, participants were asked what they thought CEO A's (CEO B's) opinions about the value of
honesty (second subscale, four items) were: Specifically, participants were asked to which degree they thought that
CEO agrees with four statements ranging from *CEO strongly disagrees* to *CEO strongly agrees*: *Truthfulness is
something that one should not sacrifice, no matter what the (material or other) benefits; truthfulness is something for
which it is right to make a cost-benefit analysis; truthfulness is something that cannot be measured in monetary terms;
truthfulness is something about which one can be flexible if the situation demands it*.
[15] Cronbach's Alpha is a measure of the reliability and the internal consistency of an instrument. The measure ranges
from 0 to 1 and will generally increase when the correlations between the items increase.

ex post relationship between investment and payments was based on the following reasoning. If a CEO announced past earnings (dis)honestly, then he would also be (dis)honest about claimed future returns. Thus, the announced future returns are, in fact, delivered by the CEO who did not manage earnings in the past (CEO A), and the payout to participants was made accordingly. By contrast, the future returns claimed by the earnings-management CEO B did not come through as announced by him, and participants received zero variable payment when they invested in his company.[16] To guarantee anonymity and minimize the activation of impression management tendencies, participants chose an own code at the beginning of the experiment (consisting of 2 letters and 4 digits). Based on this code, another person of the research team (not the experimenter), staying in another room, prepared an envelope containing the money. Participants received the sealed envelope from the experimenter when indicating their personal code.

3.2 Expected behavior in Experiment 1 and hypotheses

Consider an investor in the environment of Experiment 1 who decides whether to invest with CEO A or CEO B. R_c are the returns promised by CEO c. Both returns are positive. We also posit that investors have the same, constant marginal utilities and care only about returns.[17] Let the global utility function be defined as

(1)
$$V = \begin{cases} p^0 R_A + (1 - p^0)0 \text{ if } A = 1 \\ p^0 R_B + (1 - p^0)0 \text{ if } A = 0 \end{cases},$$

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[16] For example, if CEO A claimed 10% and CEO B claimed 30% as a future return, individuals investing in A received 10% of 50,000 / 10,000 = CHF 0.5, while individuals investing in B received nothing. Thus, the maximum of CHF 5 was reached when they invested with CEO A across all choice situations. It is possible that some participants would have made their choices systematically in favor of CEO B thinking that they would earn more since they were told that this CEO managed the earnings within legal limits. However, if that had been the case, we would have observed a skewed pattern in favor of CEO B in the results. This turned out not to be the case.

[17] In Experiment 2, we consider differences among investors regarding their emphasis of monetary and non-monetary motivations.

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where A is the choice variable (investment in A) and p^0 is the prior that a CEO's promised returns come through. Identical priors for the two CEOs make sense because their ex-ante description in the experiment is identical. Investing with A means not investing with B. Defining $\Delta Return = R_A - R_B$, here abbreviated as ΔR, an investor prefers to invest with A when he receives higher expected utility from investing in A than from investing in B, that is, when

(2) $$p^0 \Delta R > 0.$$

Without further information, an investor will tend to invest with A if A promises higher returns than B. While this is true for any prior that is identical for the two CEOs, it is reasonable to posit $p^0 = 1/2$.

Empirically, in line with standard practice, we assume that the comparison of the utilities translates into a decision based on a random choice model, incorporating an error term ε, which is independent of the explanatory variables. By assuming that ε has the logistic distribution, one obtains the logit model, which is the main specification on which we focus in the empirical implementation. Thus, while we do not expect 100% investment in A as soon as ΔR is minimally positive, we do expect investment in A to increase as ΔR increases.

The investor has additional information beyond the announced future returns. Specifically, the *honesty inference hypothesis* asserts that: Participants use the information regarding past earnings announcements – which makes salient that one of the CEOs could have managed earnings to reach the same announced earnings as the other CEO, but did not do so – as a signal of the managers' different commitments to honesty. Thus, they update estimated probabilities for A and B delivering their promised returns from the common prior p^0 to the posteriors p^A and p^B, respectively. While the hypothesis predicts that $\Delta p = p^A - p^B$ is on average positive, we do allow investors to differ in the extent to which they take past earnings management as a signal of truthful

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reporting of future returns. Supplementary Appendix A.1 spells out the details of Bayesian updating in the present case. Empirically, $\Delta CEO\_PVHon,$ the difference in perceived commitment to honesty between CEO A and CEO B, provides our proxy for Δp.[18]

The investor decides to invest with A if

(3) $$p^A R_A - p^B R_B > 0, \text{ or } \frac{p^A}{p^B} > \frac{R_B}{R_A}.$$

This implies three predictions. First, we continue to have the prediction that investors prefer to invest with CEO A, the higher the promised future returns of CEO A relative to CEO B. Second, equation (3) implies that higher attributed protected values for A should, as a proxy for the probability of delivering the promised returns, be positively associated with investment choices into A.

Third, equation (3) indicates the substitutive roles of attributed protected values and announced returns: Intuitively, even if $\Delta R < 0$, the investor may choose A if Δp is sufficiently large. In the extreme where this difference approximates unity, differences between returns matter less and less. Thus, we obtain the *dishonesty discount hypothesis*, which posits that investors discount differences in claimed future returns by the two CEOs more the higher the investors' perception of the commitment to honesty of a given CEO relative to another CEO.

To illustrate, Figure 1 presents the percentage of investors expected to invest in A for varying Δp, which is empirically proxied by the difference in attributed protected values, ΔCEO_PVHon. The figure is centered around the case where $\Delta p = 0$, that is, when an investor's posterior is equal to the prior. The solid line shows the expected behavior if $\Delta R = R_A - R_B > 0$.

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[18] We do not posit that all investors necessarily associate these two characteristics positively. An investor's perception of the two CEOs' protected values for honesty can either measure the probabilities of delivery directly, or it can measure the extent to which an investor thinks that what the CEO delivers in terms of announced returns is associated with whether he has not managed earnings in the past.

Thus, even when $\Delta p = 0$, the investor is more likely to invest with A. In the region where $\Delta p > 0$, it is even more attractive to invest with A than with B. In the extreme, where Δp goes towards one, that is, where the investor regards A as much, much more honest than B, the probability of investing in A approximates unity.

When $\Delta R = R_A - R_B < 0$, plotted with the dashed line, the same limiting outcome obtains: Even if A promises lower returns than B, as long as A is estimated to be sufficiently more likely to deliver than is B, the investor will tilt towards A. Thus, we observe the solid and dashed curves approximating each other towards the right, meaning that the importance of future returns diminishes as the posteriors diverge. By contrast, return differences play a bigger role for determining the ultimate decision when posteriors are similar, as in the middle of the figure.

Figure 1: Expected behavior in Experiment 1

This graph plots the predicted share of investors' choices for CEO A depending on the differences in estimated probabilities of delivery of the announced returns, Δp, which are empirically proxied by the differences in perceived $PV_{honesty}$ between CEO A and CEO B (ΔCEO_PVHon). It does so for the situation where $\Delta R > 0$, that is, where CEO A announces higher future returns than CEO B (solid line), and for the opposite case (dashed line).
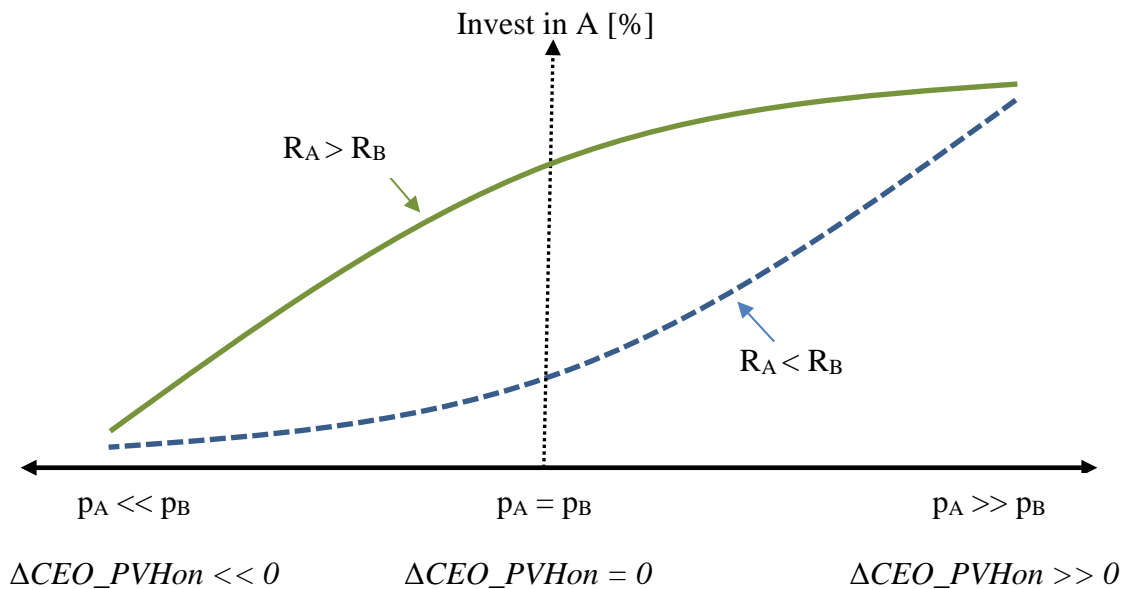
For completeness, consider what happens in the left part of the figure, where $\Delta p < 0$. Intuitively, if investors regard B as more honest than A, return differences between A and B matter less; they will tend to invest with B. However, for our experiment this region is of smaller interest: If the honesty inference hypothesis holds, we are inducing honesty inferences that imply $\Delta p > 0$. Therefore, while some investors may infer the opposite to some extent, we cannot really test the predictions in the part where Δp goes towards minus one.

When (the absolute value of) ΔR is bigger, the two lines would be further out, but would again converge to 100% and 0%, respectively, at the right and left limits.[19] When ΔR approximates zero, there would be a straight, diagonal line.

3.3   Results of Experiment 1

Overall, 61% of the participants choose to invest with CEO A. Recall that if investors regarded both CEOs to be equally likely to deliver the promised returns, we would expect 50% investing in CEO A, given that CEO A announced higher returns in half of the cases. In what follows, we seek to understand how the actually observed behavior arose. We begin, in Section 3.3.1, by investigating perceived differences in honesty between the CEOs. Then, in Section 3.3.2 we turn to investment decisions. Section 3.3.3 provides additional tests.

3.3.1   Perceived differences in honesty between the CEOs

The *honesty inference hypothesis* holds that participants use the implicit information from the past earnings announcements as signals of the two managers' commitment to honesty. Therefore, we

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[19] The shape of these lines is also implicitly determined by the marginal utility of money of investors. In Experiment 2, we control for whether investors have proself and prosocial value orientations to partially capture this distinction.

examine whether participants perceive the CEO who did not engage in earnings management and thus sacrificed his individual bonus (CEO A) differently than the CEO who managed earnings (CEO B). The results in Table 3 support the hypothesis: The CEO who managed earnings to increase his personal bonus is perceived as less committed to honesty.

It is interesting to observe from the standard deviations of $PV_{honesty}$ for both CEOs that perceptions differ widely. Thus, there is no uniform interpretation of earnings management, as presented in this experiment, as a violation of honesty principles. This suggests that the variation in these perceptions may help explain variation in investment behavior. Results available upon request show that there were no systematic CEO perception differences across the participants with respect to their other categorizations (participants' gender, academic major, and age).

Table 3: Differences in perceived CEO characteristics

This table presents means and standard deviations (SD) of perceived CEO A and CEO B characteristics (all measured on 7-point scales) as well as t-tests for differences in these variables in Experiment 1 (N= 141). *** indicates significance at the 1% level.

Perceived CEO characteristics	Mean CEO A	SD CEO A	Mean CEO B	SD CEO B	t-test for differences
PVHonesty	4.46	1.31	3.31	1.03	$t(140) = 6.53^{***}$
Trustworthiness	3.79	0.99	2.78	0.98	$t(140) = 7.09^{***}$
Long-term orientation	3.94	1.07	2.43	1.01	$t(140) = 9.86^{***}$
Willingness to make financial sacrifices	3.58	1.18	2.49	1.11	$t(140) = 6.45^{***}$

In addition, CEO B is also perceived as less trustworthy, more short-term oriented, and less willing to make financial sacrifices. We caution that only perceived honesty (which is the key variable in what follows) derives from a multi-dimensional, previously validated scale. We use these other variables for robustness checks.

We denote by *ΔCEO_PVHon* the difference in perceived commitment to honesty between CEO A and CEO B. *ΔCEO_Trustworthy* is similarly defined for perceived trustworthiness.

ΔCEO_PVHon and *ΔCEO_Trustworthy* are standardized to mean zero and standard deviation of

one. Table 4 shows the considerable range of these variables.

Table 4: Summary statistics of main investor-level variables for Experiment 1

This table depicts summary statistics for the main variables of Experiment 1 ($N = 141$). *Invest in A* is the total number of investors' choices for the company managed by CEO A. *ΔCEO_PVHon* is the difference in perceived commitment to honesty between CEO A and CEO B (Perceived $PV_{honesty}$ CEO A - Perceived $PV_{honesty}$ CEO B). *ΔCEO_Trustworthy* is the difference in trustworthiness between CEO A and CEO B (Perceived Trustworthiness CEO A – Perceived Trustworthiness CEO B). *ΔCEO_PVHon* and *ΔCEO_Trustworthy* are standardized to mean zero and standard deviation of one.

Variable	Mean	Median	SD	Min	Max
Invest in A	0.61	1.00	0.49	0.00	1.00
ΔCEO_PVHon	0.00	0.04	1.00	-2.20	2.33
ΔCEO_Trustworthy	0.00	-0.01	1.00	-2.96	1.76

Conceptually, perceived honesty is a prerequisite for perceived trustworthiness. Therefore,

we expect *ΔCEO_Trustworthy* to correlate with *ΔCEO_PVHon*. Table A1 in the Supplementary

Appendix A.2 shows that this is indeed the case. There may, however, also be variation in

perceived trustworthiness that is not explained by perceived honesty. Accordingly, we

orthogonalize these two variables in all regressions when we include both of them.

3.3.2 Investment decisions

Figure 2 displays investors' choices in favor of CEO A as a function of *ΔCEO_PVHon* and

differences in claimed future returns *(ΔReturn)*. For presentation purposes, we pool the two

positive and the two negative return differences, thus forming one category where CEO A claimed

higher future returns than CEO B and one category where the opposite holds. We consider the

return difference categories separately in the regression analysis below. Three main results can be

gleaned from the figure: First, when CEO A claims higher returns, more investors choose to invest

with CEO A. Second, the percentage of investors choosing CEO A increases the more CEO A is

seen as committed to honesty, relative to CEO B.

Third, the two lines converge going from left to right in the graph. That is, those investors who believe that CEO A is strongly committed to honesty relative to CEO B make their decision less dependent on the claimed returns. Conversely, those investors who believe that CEO A is only weakly committed to honesty are more sensitive to the claimed returns. These results mirror the predicted pattern in Figure 1 and thus support the *dishonesty discount hypothesis.*

Figure 2: Choices in favor of CEO A and Perceived CEO Protected Value for Honesty

This graph plots the share of investors' choices for CEO A depending on the differences in perceived PV$_{honesty}$ between CEO A and CEO B (*ΔCEO_PVHon*) in Experiment 1. Participants made in total four investment choices between the company managed by CEO A and the company managed by CEO B. Two choices were made with CEO A claiming higher future returns than CEO B (solid line) and two decisions with CEO A claiming lower future returns than CEO B (dashed line). We categorize investors in terms of *ΔCEO_PVHon* terciles.
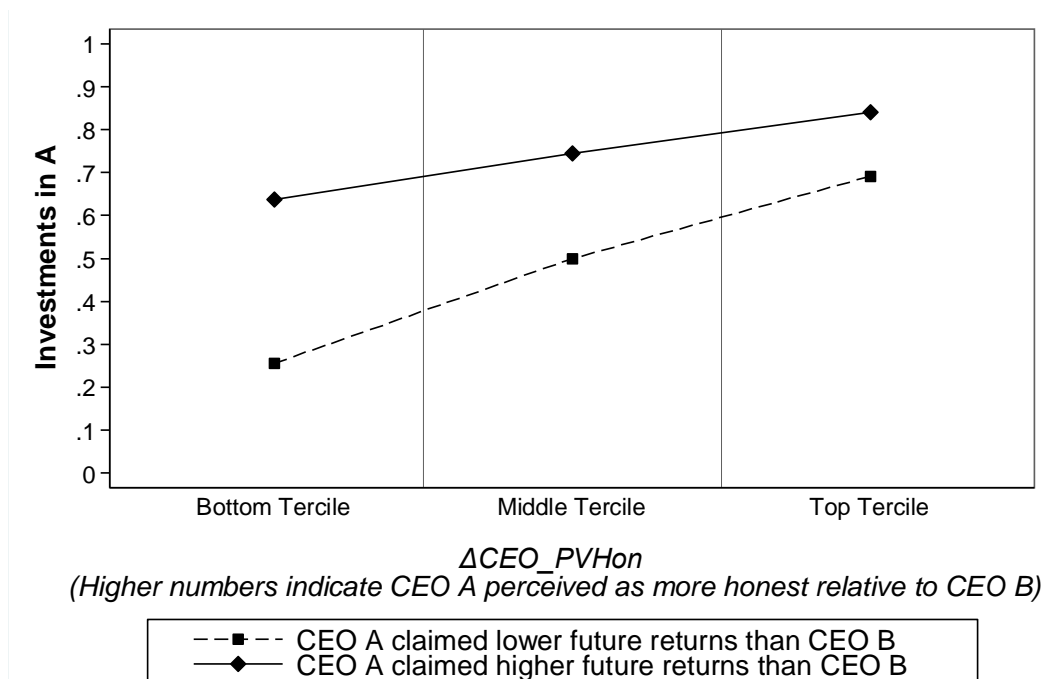
To test whether these results also survive when controlling for various other factors, we estimate logit regressions. Table 5 summarizes the results of our regression models, the investment in CEO A being the dependent variable. Because it is possible that there is systematic variation in

how individuals of certain age, gender or training make inferences regarding traits of the CEOs (including about traits which we did not ask participants about), we control for participants' *Age*, Gender (*Female)*, and academic major (*Economics*) in all regressions. . We rarely find significant effects of these demographic variables, though economics students tend to be less likely to invest with CEO A.

Table 5: Investment choices and Perceived CEO Protected Value for Honesty

This table presents the results of logit regressions for Experiment 1. The dependent variable is *Invest in A*, which is 1 when a participant chose to invest in the company managed by CEO A, and 0 otherwise. Participants made four such choices each. *ΔReturn* is the difference in claimed returns between CEO A and CEO B. The perceived commitment to honesty of each CEO was measured on a 9 item Likert scale and the difference in perceived commitment (*ΔCEO_PVHon*) was used as the predictor in the regression. Trustworthiness was measured on a single item Likert scale. *ΔCEO_Trustworthy* and *ΔCEO_PVHon* were orthogonalized. P-values, based on standard errors clustered at the individual level, are reported in parentheses. *** 1% significance; ** 5% significance, * 10% significance.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ΔReturn	0.024***		0.027***	0.028***	0.027***	0.028***	0.028***
	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ΔCEO_PVHon		0.662***	0.714***	0.742***	0.737***	0.736***	0.726***
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ΔCEO_Trustworthy				0.481***	0.504***	0.497***	0.512***
				(0.00)	(0.00)	(0.00)	(0.00)
ΔReturn * *ΔCEO_PVHon*					-0.011*		-0.010*
					(0.08)		(0.10)
ΔReturn * *ΔCEO_Trustworthy*						0.005	0.004
						(0.31)	(0.39)
Age	0.008	-0.019	-0.021	0.004	0.005	0.004	0.005
	(0.72)	(0.41)	(0.41)	(0.89)	(0.84)	(0.88)	(0.83)
Female	-0.033	0.097	0.104	0.197	0.191	0.197	0.192
	(0.87)	(0.62)	(0.62)	(0.33)	(0.35)	(0.33)	(0.35)
Economics	-0.348	-0.299	-0.322	-0.176	-0.178	-0.175	-0.176
	(0.11)	(0.13)	(0.13)	(0.39)	(0.39)	(0.40)	(0.39)
Constant	0.531	1.102*	1.189*	0.498	0.437	0.502	0.444
	(0.36)	(0.07)	(0.07)	(0.44)	(0.49)	(0.42)	(0.48)
Observations	564	564	564	564	564	564	564
Pseudo R-squared	0.053	0.071	0.125	0.156	0.162	0.158	0.164
Pseudo Log Likelihood	-356.8	-349.9	-329.7	-317.9	-315.5	-317.3	-315.1
Base Log Likelihood	-376.7	-376.7	-376.7	-376.7	-376.7	-376.7	-376.7

Column (1) shows that investors react to differences in claimed future returns between the two CEOs such that they prefer to invest with CEO A when he or she claimed higher future returns than CEO B and vice versa. The marginal effects imply that an increase of the returns difference in favor of CEO A by 10 percentage points (the difference between the choice situations) increases the probability of investing with that CEO by about 5%. Column (2) shows the positive direct effect for the second main variable of interest, ΔCEO_PVHon. Thus, investors tend to invest with the CEO whom they perceive to be more committed to honesty relative to the other CEO. In Column (3), we include both main predictors in a single model and both positive direct effects remain significant. A one standard deviation increase in CEO A's perceived commitment to honesty relative to CEO B's perceived commitment to honesty has about the same quantitative effect on the attractiveness of CEO A as an increase in claimed returns of CEO A relative to CEO B of 26 percentage points (=0.714/0.027).

As mentioned above, perceived CEO $PV_{honesty}$ is considered as a prerequisite for perceived CEO trustworthiness. To test for additional effects of trustworthiness, we add $\Delta CEO\_Trustworthy$ (orthogonal to $\Delta CEO\_PVHon)$ as a control variable in Column (4). The results suggest that when investors perceive CEO A to be more trustworthy than CEO B, they tend to invest with CEO A. ΔCEO_PVHon remains significant and of almost identical impact in the regression as before.

In Column (5) we test the interaction between the two main variables of interest. The *dishonesty discount hypothesis* holds that as a CEO's perceived commitment to honesty increases relative to his peer, the relative difference in their claimed returns plays a diminishing role in motivating investor choices. The significant negative interaction term supports this hypothesis. The more investors perceive CEO A to be more committed to honesty than CEO B, the smaller the effect of claimed future returns on investments in CEO A. A one standard deviation increase

in *ΔCEO_PVHon* reduces the relevance of returns of CEO A relative to CEO B by about 40% (0.011/0.027), a sizable effect.

Column (6) additionally shows that *ΔReturn* and *ΔCEO_Trustworthy* do not interact. Moreover, Column (7) shows that all effects of the main predictors (*ΔCEO_PVHon* and *ΔReturn*) and their interaction still hold when we add the interaction between *ΔCEO_Trustworthy* and *ΔReturn* into the regression.

Overall, we derive three main conclusions from the results of Experiment 1. First, the CEO who did not engage in earnings management in the past is perceived to be more committed to honesty than the CEO who manages earnings. Second, participants' investment choices depend upon differences between the two CEOs not only in claimed future returns, but also in perceived commitment to honesty and in perceived trustworthiness. Finally, holding another CEO's claimed future returns fixed, investors become less sensitive to the claimed future returns of a CEO the more they perceive this CEO to treat honesty as a protected value relative to the other.

3.3.3 Additional results and robustness

In Supplementary Appendix A.2, we also test if differences in long-term orientation and willingness to make financial sacrifices between the two CEOs affect our findings. However, we neither find a main effect of these two variables on investment choices, nor an interaction with *ΔReturn*. Including these two variables and their interactions with *ΔReturn* does not affect any of the relationships of our main variables of interest (see Table A2).

In our set-up, participants are first given the information on CEOs' earnings announcements, then participants make the investment choices, and then we poll their perception of the two CEOs' commitment to honesty. Accordingly, one might worry that participants' investment choices indirectly affect their perception of CEO $PV_{honesty}$ in a way that they perceive the CEO with whom

they invest as more honest irrespective of the CEO's engagement in earnings management. To investigate this concern, we conducted an additional online survey with students in a corporate finance class at the University of Zurich. Participants ($N = 51$, of whom 17 were female) were given the exact same description of the CEOs' earnings announcements as in the main experiment (Table 1 and the surrounding text), followed directly and solely by the *CEO_PVHon* scales for CEO A and CEO B. These participants did not make any investment choices. We find practically identical results in this additional data collection concerning participants' perception of CEO PV$_{honesty}$. CEO A is perceived to be more committed to honesty (*mean* = 4.71) than CEO B (*mean* = 3.53) also in this sample, $t(50) = 4.47$, $p < .01$. A Kolmogorov-Smirnov test does not reject the hypothesis that the distributions of experiment participants and non-participants are identical ($p = 0.67$). This suggests that our results concerning differences in the perception of *CEO_PVHon* between CEO A and CEO B are based on the CEOs' earnings announcements rather than on participants' strive for internal consistency.

Furthermore, we test whether age, gender, and academic major affect participants' sensitivity towards differences in claimed future returns. None of the variables interact significantly with *ΔReturn,* though there is some tendency for economics students to care more about returns. Finally, results available on request show that including these interactions into the regression does not affect the significance of the interaction term between *ΔCEO_PVHon* and *ΔReturn*. We acknowledge that the field of study may not sufficiently capture differences among participants in their financial savviness, which may correlate with inferences and behavior in the experiment. In Experiment 2, we therefore also collected additional data on the financial savviness of participants.

4 Experiment 2

4.1 Motivation for Experiment 2

The results from Experiment 1 suggest that investors care about perceived managerial honesty and are willing to invest with the CEO claiming lower returns if their assessment of that CEO's commitment to honesty is sufficiently high. There are two interpretations of this result.

On the one hand, some investors may assign higher credibility to this CEO's announcements regarding the future returns. Thus, even when CEO A claims lower future returns than CEO B, these investors may not have felt that they are bearing an opportunity cost by investing with CEO A, because they anyways did not regard CEO B's predictions as credible enough.

On the other hand, it may be that some investors are, in fact, willing to pay a price for investing with the CEO they regard as more honest. Thus, in the extreme, some investors may have expected both CEOs to exactly deliver those returns they claimed for the future, but these investors were on purpose willing to give up higher returns to keep investing with CEO A. This possibility can in particular arise if some of the investors themselves hold honesty as a protected value and at the same time care about rewarding the non-earnings management CEO or a CEO who shares their values by investing with him (and, conversely, "punishing" the earnings-management CEO by withholding funds from him).

To examine which of these two mechanisms drive behavior (and for whom), we, therefore, collect data on investors' social value orientation as well own as on their own protected values for honesty. These measures of investor characteristics allow us to test the *heterogeneous investors hypothesis*. This hypothesis holds that proself investors care about future returns and thus invest with the CEO perceived as honest due to him announcing more credible returns, while prosocial investors place less emphasis on future returns than on moral considerations. We expect proself

investors to be return-sensitive, but also to discount differences in claimed returns by considering differences in perceived CEO honesty, as a more honest CEO can be expected to deliver what he has claimed to deliver. In contrast, prosocial investors' tendency to invest in CEO A should be positively associated with their own protected values, and with their relative assessment of that CEO's honesty. Return differences between the two CEOs should be less important to them. In the theoretical framework introduced in Section 3.2, this analysis can be captured by extending the investor's utility function to consist also of a second part that is unrelated to financial returns but that directly takes into account – possibly multiplicatively – the perceived honesty of the CEO as well as the investor's own commitment to honesty. Proself investors would put more weight on the original term, involving returns, in the utility function in Section 3.2, whereas prosocial investors would put less weight on that returns-related part and more weight on the second term in the utility function.

4.2   Method for Experiment 2

A total of 164 students were recruited from the University of Zurich to participate in this study, which consists of two parts, about one week apart: a survey (online) and an experimental part (laboratory). None of the students had participated in Experiment 1 but like in the former, full anonymity of the participants was guaranteed. Fourteen respondents were excluded due to either extremely long process time required to finish the online survey (z-transformed process time > 2 standard deviations above 0; 2 people), very young age responses (< 19 years old; 7 people), or because identification codes did not match between the two tasks (see below, 5 people). This yielded a final sample size of 150 participants. In the main analysis we use 132 because 18 could not be classified according to the standard social value orientation criterion (see below), though

the results also hold when we use a version of the criterion that allows us to include all 150 participants (see Section 4.3.3). Of this sample, 60% were psychology students, 37% economics and 3% students of other disciplines; 68% were women. The median age was 21.[20] 29% of the participants had made stock investments themselves, and the median participants reviewed financial news at least on a weekly basis, though there was broad variation among participants, as indicated by the standard deviation of 1.27 on a Likert scale from 1 (never) to 5 (daily).

Participants were expected to complete two separate tasks (a survey and a decision-making task as investors) in order to get paid. Participants received a fixed amount of CHF 10 for their participation in the online survey and experimental part of this study and a variable amount up to CHF 5, depending on their responses in the decision task. The participation fee and the outcome-based remuneration rule mirrored the ones used in Experiment 1.

Survey: As the first task, participants completed an online questionnaire that was designed to assess demographic characteristics (such as the extent to which participants read newspapers about financial topics and whether they had made stock investments themselves) and a variety of personal attitudes and values. Amongst other items, we assessed each participant's own protected values for truthfulness (*Investor_PVHon*) and social value orientation (*Investor_SVO*). To compute $PV_{honesty}$, we again used the Gibson, Tanner, and Wagner (2013) survey, as in Experiment 1. The average of the responses across all items was used to form an index of own $PV_{honesty}$, yielding a high Cronbach's Alpha ($\alpha = .85$). Social value orientation (*Investor_SVO*) is a common concept in psychology and is also used in economics (e.g., in Grossman and van der Weele, (2017)). It was measured by means of the commonly applied and rigorously tested Decomposed

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[20] We highlight for the reader that the composition of this sample is different than the one observed in Experiment 1. Results for Experiment 1 had shown that field of studies is not significantly associated with investment choices. In Experiment 2 as well, we find that demographics do not explain investment choices.

Game Measure (see for details, Van Lange, Otten, de Bruin, and Joireman (1997)). The task consists of nine trials. The trials are not monetarily incentivized, but extant literature has demonstrated excellent psychometric qualities for the measure (see e.g., van Dijk, De Cremer, and Handgraaf (2004) for an overview of studies). In each of them participants are asked to choose one of three combinations of outcomes for themselves and for an (anonymous) other. In line with extant studies we categorized participants as prosocial when they chose the cooperative alternative in at least six trials (out of nine). Participants were categorized as proself when they chose the individualistic or competitive option in six or more trials (out of nine). With this approach, 18 participants could not be categorized into one of the two investors' segments.[21]

Again, to guarantee anonymity, participants chose their own identification code, which was also valid for the second task. The first and second tasks were at least one week apart. Both the time lag and the diversity of questionnaires that the participants had to fill out were introduced to reduce suspicion about the purpose of our study and concerns that they would provide answers that were self-consistent when performing the investment task.

Investment Task: This second task and its procedure were identical to the investment task used in Experiment 1. Upon arriving in the laboratory, participants were informed that they would be in the situation of an investor who has to make several decisions to invest with one of two companies. They were then provided with information about the CEO A and CEO B, announcing different earnings per share. Again, participants could only continue with the task when they had correctly responded to some manipulation check questions as in Experiment 1. Afterwards, they were provided with several items to examine whether both CEOs were perceived to be different, like in Experiment 1. In addition to the same bipolar items used in the previous experiment (such

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[21] In an additional analysis, participants are categorized as pro-self or prosocial based on a median split, thus allowing us to use all 150 participants. Our results hold for that approach, too. See Section 4.3.3.

as *short-term* vs. *long-term oriented* etc.), we also asked to which extent CEO A and CEO B were seen as *credible* vs. *not credible* (from -2 to +2). We pooled the trustworthiness and credibility items into one single scale in Experiment 2.[22]

Then, participants were again presented with the four investment choices (in a randomized order), which varied in terms of claimed future returns by both CEOs. Then, we again collected data on Perceived PV$_{honesty}$ CEO A and Perceived PV$_{honesty}$ CEO B. At the end, participants were debriefed and paid when indicating their personal identification code.

4.3 Results of Experiment 2

4.3.1 Descriptive statistics and correlations of main variables of interest

Table 6 presents the descriptive statistics for the variables of interest in Experiment 2, distinguishing between proself and prosocial investors.[23]

Table 6: Summary Statistics for Experiment 2

The table presents descriptive statistics for Experiment 2. *Invest in A* is the fraction of investor choices for the company managed by CEO A. *ΔCEO_PVHon* is the difference in perceived commitment to honesty between CEO A and CEO B (Perceived PV$_{honesty}$ CEO A - Perceived PV$_{honesty}$ CEO B). *ΔCEO_Trustworthy* is the difference in trustworthiness between CEO A and CEO B (Trustworthiness CEO A – Trustworthiness CEO B). *ΔCEO_PVHon* and *ΔCEO_Trustworthy* are standardized. *Investor_PVHon* is the Investor's PVhonesty. We categorize participants as prosocial ($N = 72$) (proself, $N = 60$) when they chose the cooperative (self-maximizing) alternative in six out of nine social value orientation (*Investor_SVO*) items. *Investor_SVO* captures investors' preferences regarding how to allocate resources between them and another person. For details, see the text. t-statistics are for tests of differences in the means between proself and prosocial investors. *** 1% significance; ** 5% significance, * 10% significance.

Group:	Proselfs		Prosocials		
	Mean	SD	Mean	SD	t-test for differences in means
Invest in A	0.60	0.49	0.60	0.49	$t(526) = -0.11$
ΔCEO_PVHon	-0.04	0.92	0.17	0.97	$t(130) = -1.27$
ΔCEO_Trustworthy	-0.07	1.06	0.20	0.92	$t(130) = -1.55$
Investor_PVHon	-0.13	1.07	0.19	0.86	$t(130) = -1.94*$

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[22] The results also hold for the single item trustworthiness measure (see the robustness check section).

[23] Supplementary Appendix Table A3 provides separate correlation statistics for the pro-self and prosocial investors.

As can be seen, both subsamples share a preference to invest with CEO A. Interestingly, they do not differ significantly in how they perceive CEO A relative to CEO B in terms of his commitment to honesty. The difference in perceived trustworthiness is also not statistically significant, though the analysis suggests that prosocial investors tend to infer somewhat stronger differences among the CEOs along that dimension.

Table 6 also shows that proselfs and prosocials differ somewhat in the extent to which they treat honesty as protected value. Indeed, the cross-tabulation in Table 7 reveals that among the proselfs (prosocials), the majority of individuals have below-median (above-median) *Investor_PVHon.* However, there are also many participants who are proselfs (prosocials) but have above-median (below-median) *Investor_PVHon.* Consequently, *Investor_SVO* and *Investor_PVHon* are far from perfectly correlated ($r = .18$). These findings are consistent with *Investor_PVHon* and *Investor_SVO* seeking to measure conceptually distinct traits of the participants.

Table 7: Cross-tabulation of individuals according to *Investor_PVHon* and *Investor_SVO*

The table shows the number of participants in each of four combinations of traits. We perform a median split on *Investor_PVHon*. We categorize participants as prosocial ($N = 72$) when they chose the cooperative alternative in six out of the nine *Investor_SVO* items. They are categorized as proself ($N = 60$) when they chose the self-maximizing alternative in six out of the nine items. Data are from Experiment 2.

	Investor_SVO		
Investor_PVHon	**Proself**	**Prosocial**	Total
Below median	34	29	63
Above median	26	43	69
Total	60	72	132

4.3.2 Investment decisions

While we do not see differences between proself and prosocial investors in terms of their perception of the CEO's commitment to honesty, the *heterogeneous investors hypothesis* suggests that perceptions of the CEO have a different meaning to the two groups of investors, and therefore

can affect their behavior through different channels. We again estimate logit regression models, where the investment in CEO A is the dependent variable. Table 8 summarizes regressions for the proself investors (Columns 1 – 3), for the prosocial investors (Columns 4 – 6), and two regressions for the full investor sample (Columns 7 and 8). We control for differences in perceived trustworthiness (*ΔCEO_Trustworthy*). Moreover, all regressions include the participants' *Age*, gender (*Female*), and academic major (*Economics*). The coefficients for the demographic controls are not shown to conserve space. Additional controls for financial savviness are considered in the robustness checks.

Visually, what is striking about Table 8 is that in Columns (1) to (3), the variables including *ΔReturn* are all significant, indicating that economic considerations play an independent role and interact with non-financial motives, which suggests that proself investors use non-financial motives to analyze the claimed returns. By contrast, in Columns (4) to (6), the variables including *ΔReturn* are all insignificant, showing that for prosocial investors economic considerations play much less of a role, both directly and in conjunction with ethical aspects.

Studying the results in more detail, we see that Column (1) echoes the findings we obtain in Experiment 1. Specifically, first, the regression shows a positive direct effect for *ΔReturn*: Proself investors are indeed sensitive towards differences in claimed future returns between the CEOs. Proself investors are also sensitive towards differences in $PV_{honesty}$ between the two CEOs, as shown by the significant direct effect for *ΔCEO_PVHon*.

This table presents the results of logit regressions for Experiment 2. The dependent variable is *Invest in A*, which is 1 when a participant chooses to invest in the company managed by CEO A, and 0 otherwise. Participants made four such choices each. The table shows two regressions for each investor subsample, i.e. investors with a proself and investors with a prosocial orientation. All variables were measured like in Experiment 1, with the exception of the *ΔCEO_Trustworthy* measure, which is a two-item measure (trustworthiness and credibility) in Experiment 2 (see methods section). *Investor_PVHon* is the investors' own commitment to honesty. *ΔCEO_Trustworthy* and *ΔCEO_PVHon* are orthogonalized. *Investor_SVO* in column 7 is a dichotomous variable with proself = 0 and prosocial = 1. The coefficients on the demographic variables (age, gender, program of studies) are not shown. P-values, based on standard errors clustered at the individual level, are reported in parentheses. *** 1% significance; ** 5% significance, * 10% significance.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Investor_SVO	**Proself value orientation**			**Prosocial value orientation**			**Full sample**	**Full sample**
ΔReturn	0.020**	0.019**	0.019**	0.006	0.007	0.007	0.019**	0.019**
	(0.02)	(0.04)	(0.04)	(0.41)	(0.40)	(0.39)	(0.04)	(0.04)
ΔCEO_PVHon	0.713***	0.720***	0.711***	0.322***	0.305***	0.305***	0.686***	0.724***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)
*ΔReturn * ΔCEO_PVHon*	-0.019*	-0.018*	-0.021**	0.003	0.004	0.004	-0.019*	-0.018*
	(0.07)	(0.09)	(0.05)	(0.67)	(0.64)	(0.62)	(0.07)	(0.08)
Investor_PVHon	-0.079	-0.080	-0.072	0.553***	0.582***	0.581***	0.235**	-0.034
	(0.60)	(0.57)	(0.60)	(0.00)	(0.00)	(0.00)	(0.03)	(0.79)
*Investor_PVHon * ΔCEO_PVHon*		-0.040	-0.060		0.170*	0.168*	0.094	-0.035
		(0.78)	(0.67)		(0.06)	(0.08)	(0.25)	(0.81)
*Investor_PVHon * ΔReturn*		-0.018**	-0.017*		-0.001	-0.001	-0.010	-0.018**
		(0.04)	(0.05)		(0.95)	(0.90)	(0.14)	(0.05)
*Investor_PVHon * ΔReturn *ΔCEO_PVHon*			0.012			-0.002	0.002	0.002
			(0.25)			(0.76)	(0.82)	(0.73)
Investor_SVO							-0.190	-0.227
							(0.30)	(0.20)
*Investor_SVO * ΔCEO_PVHon*							-0.346*	-0.418**
							(0.07)	(0.02)
*Investor_SVO * ΔReturn*							-0.011	-0.013
							(0.35)	(0.30)
*Investor_SVO*ΔReturn* ΔCEO_PVHon*							0.023*	0.021*
							(0.08)	(0.09)
*Investor_PVHon * Investor_SVO*								0.586***
								(0.00)
*Investor_PVHon * Investor_SVO * ΔReturn*								0.018
								(0.18)
*Investor_PVHon * Investor_SVO*ΔCEO_PVHon*								0.212
								(0.22)
ΔCEO_Trustworthy	0.313**	0.324**	0.337**	0.333***	0.351***	0.351***	0.294***	0.348***
	(0.04)	(0.04)	(0.04)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.271	0.296	0.385	1.270**	1.210**	1.210**	1.333***	1.176**
	(0.83)	(0.81)	(0.75)	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)
Observations	240	240	240	288	288	288	528	528
Pseudo R-squared	0.135	0.157	0.163	0.079	0.083	0.084	0.084	0.084
Pseudo Log Likelihood	-140.1	-136.5	-135.6	-178.4	-177.6	-177.6	-320.1	-314.8
Base Log Likelihood	-161.9	-161.9	-161.9	-193.7	-193.7	-193.7	-355.7	-355.7

Proselfs tend to invest more heavily with CEO A, the more they perceive the CEO to be committed to honesty relative to CEO B. Finally, we replicate the negative interaction term between *ΔCEO_PVHon* and *ΔReturn* as observed in experiment 1. For proself investors, the positive main effect of claimed future returns on investment behavior is strengthened when they perceive this CEO as more committed to honesty but is weakened when they perceive the CEO as deceptive. Column (1) also shows that we do not find a significant main effect of *Investor_PVHon* on investment in CEO A for proself investors, thus the choices made by these investors do not depend directly on their own preferences for truthfulness.

In Column (2) we include the interaction between *Investor_PVHon* and *ΔReturn* in the regression. The interaction term *ΔCEO_PVHon* and *ΔReturn* remains significant. Interestingly, the interaction between *Investor_PVHon* and *ΔReturn* enters negatively, suggesting that even proself investors become less sensitive to claimed future returns the more they themselves treat honesty as a protected value. It is conceivable that these high *Investor_PVHon* investors wish to signal (perhaps to themselves, in the spirit of self-signaling models such as Bénabou and Tirole (2004, 2006)) that they uphold their protected values for honesty in contrast to other less ethically inclined investors. Column (3) shows that the investor's own protected values and those attributed to the CEOs do not interact.

Overall, these results support what the *heterogeneous investors hypothesis* suggests for proself investors, namely, that they become less return sensitive the more they perceive a CEO to treat honesty as a protected value compared to the other.

Columns (4) to (6) turn to the prosocial investors, for whom the *heterogeneous investors hypothesis* predicts that returns play a much less important role while non-financial (moral) motives matter directly. The positive, but small and statistically insignificant main effect for *ΔReturn* suggests, as expected, that prosocial investors are generally only weakly sensitive towards

differences in predicted returns. However, as predicted by the hypothesis, non-financial motives matter. First, column (4) shows a significant main effect for *Investor_PVHon, i.*e. prosocial investors tend to invest more in the non-earnings management CEO the more they themselves value honesty. Second, the main effect for *ΔCEO_PVHon* in Column (4) of Table 9 means that prosocial investors tend to invest more heavily with CEO A, the more they perceive this CEO to be committed to honesty relative to CEO B. We do not have a compelling explanation for why this coefficient is smaller than for the proselfs.

The importance of non-financial factors tends to come in a specific form: The regression results in Columns (5) and (6) show that for prosocial investors assortative matching plays a role. We observe a significantly positive interaction between *Investor_PVHon* and *ΔCEO_PVHon* on investments with CEO A for prosocial investors. Thus, prosocial investors follow a simple heuristic of investing with CEO A the more their own protected values overlap with the values attributed to this CEO.

Thus, while *ΔCEO_PVHon* matters for the proselfs' assessment of returns, for the prosocials it moderates the impact of their own values. One way to interpret this outcome is that the tendency of those prosocials with high *Investor_PVHon* to invest with CEO A might partially stem from prosocially oriented investors wanting to "punish" the dishonest CEO by withholding funds from him.[24] An additional interpretation of the findings is that prosocials use the perceived managerial

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[24] In public good games, immoral behaviors such as acts of free riding are punished and individuals are willing to sacrifice own benefit to punish others (e.g., Hirshleifer and Rasmusen (1989)). They do this even without any future interactions with the individual they punish, that is, even when they are unlikely to gain individual benefit in form of increased cooperation from that person in the future (Fehr and Gächter, 2002). Our data suggest that some investors may similarly punish CEOs they perceive as unethical by withholding funds with them. Importantly, we show how these punitive sentiments depend upon the investors' traits and values. Steinel and De Dreu (2004) discuss how SVO affects individuals' tendency to moralistic punishment, though they only study how SVO affects reactions to others' competitive or cooperative tendencies, not to perceived differences in honesty. We note that with our design, it is not possible to determine whether an investment in A is an active choice *for* A, or a choice *against* B. While this is a conceptually interesting distinction, it may not be of first order concern from the perspective of managers seeking to attract capital.

honesty as a cue of who is more congruent with their own (either high or low) commitment to honesty (and thereby to be preferred as cooperative partner).

Differences in claimed future returns do not affect this behavioral pattern; we do not find any evidence that *Investor_PVHon, ΔCEO_PVHon,* and *ΔReturn* interact.

Overall, these results also support what the *heterogeneous investors hypothesis* suggests for prosocial investors, namely, that they are insensitive to returns, but base their investment judgments directly on moral motives.

Columns (7) and (8) present the results for both proself and prosocial investors in a single regression. (Because regressions with many interaction terms can be difficult to interpret, we proceed in two steps.) We include *Investor_SVO* as a dichotomous variable (proself = 0, prosocial = 1) in the regression. The effects of the main variables of interest, *ΔReturn*, *ΔCEO_PVHon,* and their interaction, are all significant and echo the effects observed in Experiment 1. These effects are thus essentially driven by the proself investors. We also find a direct effect of *Investor_PVHon* on investment choices in Column (7). However, as seen in the interaction of *Investor_SVO* and *Investor_PVHon* in Column (8), this effect is driven by the prosocial investors. Finally, the significant three-way interaction between *Investor_SVO*, *ΔReturn*, and *ΔCEO_PVHon* underpins the main finding for Experiment 2. Proself investors trade off return differences with differences in CEO PV$_{honesty}$.

Figures 3 and 4 illustrate these results. Figure 3 Panel A displays proself investors' choices in favor of CEO A as a function of *ΔCEO_PVHon* for when CEO A claims higher returns than CEO B and vice versa. As in Figure 1 for Experiment 1, the two lines converge as CEO A is increasingly perceived as treating honesty as a protected value. That is, proself investors become less sensitive towards returns the more they perceive a CEO to treat honesty as a protected value compared to the other. Figure 4 Panel A shows that the more a proself investor is committed to

honesty, the smaller the effect of return differences on investment choices. As seen in the regressions, however, *Investor_PVHon* alone does not predict these investors' investments.

For the prosocial investors, we find a completely different picture regarding the influence of the main variables of interest on investment behavior. Panel B in Figure 3 demonstrates that differences in returns between the two CEOs do not noticeably affect the prosocials' investment choices. The figure depicts the small, but significant, main effect of *ΔCEO_PVHon* on investment choices. However, Panel B in Figure 4 shows that prosocial investors invest more heavily with CEO A the more they themselves are committed to honesty, whereas they prefer to invest with CEO B when they themselves have a low *Investor_PVHon.*

To sum up, the results of Experiment 2 support the *heterogeneous investors hypothesis.* They suggest that both proself and prosocial investors are sensitive towards CEO commitment to honesty, but for different reasons. Proself investors aim to maximize their economic benefit, by investing with the CEO who claims higher returns relative to the other. They are therefore sensitive towards CEO commitment to honesty because this informs them about the likelihood that the promised returns will be achieved. By contrast, prosocial investors derive utility from following non-monetary, moral motives directly, investing with the non-earnings management CEO when they themselves have a strong commitment to honesty. These results expand the "price of sin" intuition in Hong and Kacperczyk (2009): We find that even for the proself investors managerial honesty is important – not as a goal in itself, but because it allows them to reachtheir goal of maximizing returns with limited (CEO deception) risk.

Figure 3: Choices in favor of CEO A and Perceived CEO Protected Values for Honesty

These graphs plot the share of investors' choices for CEO A depending on the differences in perceived $PV_{honesty}$ between CEO A and CEO B (ΔCEO_PVHon) separately for proself (Panel A) and prosocial investors (Panel B). Participants made in total four investment choices between the company managed by CEO A and the company managed by CEO B. In two choice situations, CEO A claimed higher future returns than CEO B (solid line), and in two choice situations CEO A claimed lower future returns than CEO B (dashed line). We categorize investors into ΔCEO_PVHon terciles.
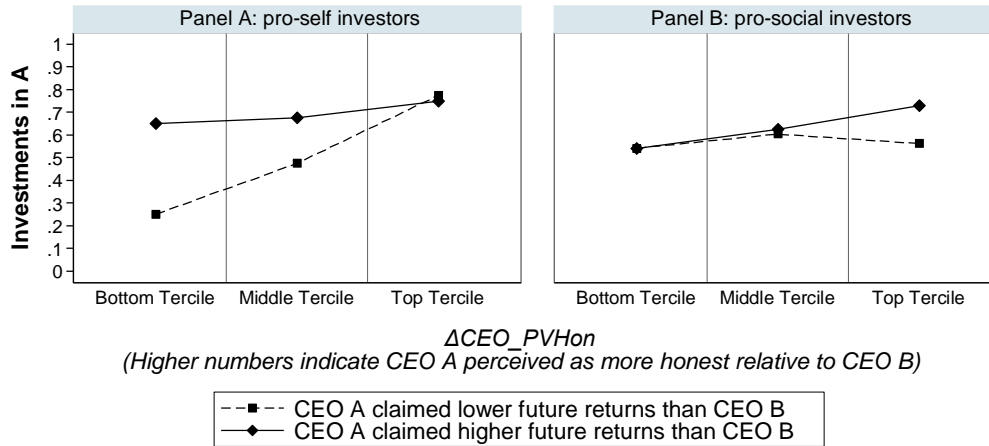
Figure 4: Choices in favor of CEO A and Investor Protected Values for Honesty

These graphs plot the share of investors' choices for CEO A depending on investors' own $PV_{honesty}$ (*Investor_PVHon*) separately for proself (Panel A) and prosocial investors (Panel B). Participants made in total four investment choices between the company managed by CEO A and the company managed by CEO B. In two choice situations, CEO A claimed higher future returns than CEO B (solid line), and in two choice situations CEO A claimed lower future returns than CEO B (dashed line). We categorize investors into *Investor_PVHon* terciles.
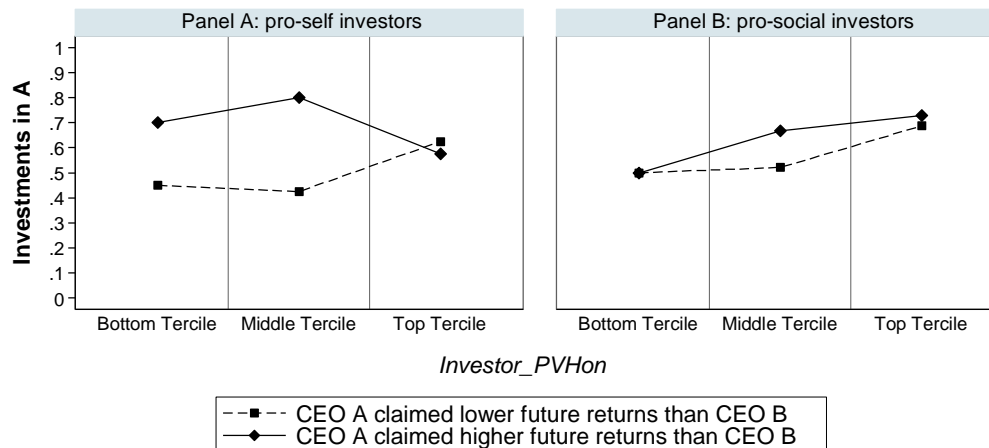
4.3.3 Additional results and robustness

In the main analysis, we categorize participants as prosocial when they chose the cooperative alternative in six out of the nine *Investor_SVO* items. This method is in line with previous research (Van Dijk, De Cremer, and Handgraaf, 2004). Doing so, 18 participants do not fall into either of the two categories. For robustness, we run another analysis, using a median split: Participants who chose more than the median number of self-maximizing choices in the *Investor_SVO* task were categorized as proself and participants below or on the median were categorized as prosocial. Our main results continue to hold (see Table A4 in Appendix A.3).

Generally, we use the exact same experimental setup as in Experiment 1. However, in Experiment 2, we measure trustworthiness with two items, i.e. we also asked participants to which extent CEO A (CEO B) was seen as *credible* vs. *not credible.* For our main analysis we pool this item with the trustworthiness item. To make sure that this difference does not affect our findings and to increase comparability with Experiment 1, we also run the regression in Experiment 2 with the single item measure for trustworthiness. We find that the results also hold for the single trustworthiness item measure.

The results regarding investment choices hold when controlling for participants' financial savviness in addition to the demographic variables that we have considered throughout (Table A5).

Finally, in Experiment 2, we also collected data on HEXACO. The HEXACO Personality Inventory (HEXACO-PI) captures six personality factors: Honesty-Humility (H), Emotionality (E), Extraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O) (Ashton and Lee, 2009). We measured investors' Honesty-Humility in this research. The correlation with *Investor_PVHon* is 0.32. In tables available on request, we find that our results hold even when controlling for this HEXACO (H) sub-scale. As expected, HEXACO (H) itself is, among the prosocial investors, positively related to a preference for investing with the honest CEO.

5 Concluding remarks and implications

Hirshleifer (2015) calls for a move from behavioral finance to what he refers to as "*social finance*", which "*includes the study of how social norms, moral attitudes, religions and ideologies affect financial behaviors*" (p. 159). This paper contributes towards this goal. Specifically, we conduct two laboratory experiments to shed light on how investor perception of managerial honesty as well as investors' own characteristics affect investment choices. Investors, on average, perceive a CEO to be more committed to honesty when he or she has previously resisted engaging in earnings management at a personal cost. Perceived managerial honesty in turn matters for investment choices, attracting several investor clienteles: Prosocial investors are more likely to invest with the CEO who did not manage earnings when they themselves have high protected values for honesty and when they attribute strong protected values for honesty to the CEO. Proself investors invest with that CEO because they value managerial honesty as a signal of the credibility of the CEOs' claimed future returns. These results demonstrate that (a) (perceived) honesty of the CEO matters in investment choices, (b) investors' personal values also play a pivotal role in these choices and (c) that investors segment into stocks based on the joint effects of these two driving forces.

This work implies testable implications for future empirical studies as well as potential normative overall financial market and prudential implications. In addition to experimental work, archival empirical research can also be fruitfully conducted, exploring, for example, whether managerial honesty translates into a positive impact on the firms' ability to raise equity and debt, to benefit from a liquid secondary security trading activity and ultimately from a lower cost of capital. The literature cited in the introduction points in this direction. The key novel point implied by the present paper is that resistance against economic incentives for misbehavior is indicative of strong commitment to good behavior. In real-world data, incentives of CEOs to misbehave vary

(in the cross-section and over time), and this can be exploited. That is, if a CEO did not do something (legal but) potentially unethical even though he had an opportunity and incentives to do so, then this suggests that the CEO is committed to integrity, and the market should respond positively to such resistance. This is a more specific prediction than just testing whether the market reacts negatively to, for example, the revelation of option backdating, or fraudulent activity. For example, to the extent that the market perceives discretionary accruals as an indication of the deception component of earnings management, *not* managing earnings this way should particularly increase the credibility of a firm's future announcements when incentives to manage earnings would have been higher. Eugster and Wagner (2017) offer first evidence in support of this prediction.

From an overall financial market perspective, the findings suggest that managerial honesty may be an important factor that facilitates stock market participation for a variety of investor types. From a prudential perspective, observing that broad clienteles of investors elect to invest into firms managed by honest CEOs, though for different reasons, suggests that market forces can after all contribute towards curbing managerial unethical behaviors.

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Supplementary Appendix (Online Material)

A.1   Details on updating

The investor wants to infer the probability that the CEO's promised returns in the future come through. The signal the investor observes is whether the CEO has managed earnings or not. While the observation of earnings management is a fact (and not a random variable per se), behind that realization is some decision-making process by the CEO, which links the outcome to manage earnings or not to the intrinsic tendency of the CEO to report the truth. Gibson, Tanner, and Wagner (2013) show that individuals with stronger protected values resist the monetary temptation to misreport earnings. If an investor believes that past honest reporting is an indication of a CEO to always announce the truth, he will also assign a higher probability to the CEO's future announced returns to come through.

Specifically, the investor is interested in Pr (CEO A delivers | A has not managed earnings). Let d=1 denote "CEO delivers" and let EM = 0 denote "CEO has not managed earnings. p^0 denotes the prior probability that the CEO delivers.

By Bayes' rule, the posterior thus is

$$p^A = \xi(d = 1|\text{EM} = 0) = \frac{Pr(EM = 0| \text{d} = 1) * p^0}{Pr(EM = 0| \text{d} = 1) * p^0 + Pr(EM = 0| \text{d} = 0) * (1 - p^0)}$$

In the extreme, if it were the case that the CEO who delivers what he announces also does not engage in earnings management, then observing no earnings management drives the posterior to 1. In a less extreme version, suppose that the investor estimates a choice model of the CEO. He infers high honesty from "no earnings management" if he thinks that "no earnings management" was less likely to have been random or due to other reasons (like low CEO competence). Overall, it seems plausible that $Pr(EM = 0| \text{d} = 1)$ is increasing in Perceived PV_{honesty} CEO A. Because $\xi(d = 1|\text{EM} = 0)$ is increasing in $Pr(EM = 0| \text{d} = 1)$, this Perceived PV_{honesty} CEO A also is an

estimate of (or is positively correlated with) $p^H = \xi(d = 1|EM = 0)$. Similarly, Perceived

PV$_{honesty}$ CEO B is an inverse estimate of (or is negatively correlated with) $p^B = \xi(d = 1|EM = 1)$. Combining, ΔCEO_PVHon provides an estimate of (or is positively correlated with) $\Delta p = p^A - p^B$.

A.2   Additional analyses

Table A1: Correlation matrix for Experiment 1

This table presents Spearman correlations above the diagonal and Pearson correlations below. Data are from Experiment 1. * indicates significance at the 5% level.

	Invest in A	ΔReturn	ΔCEO_PVHon	ΔCEO_Trustworthy	Age	Female	Economics
Invest in A	1.	0.25*	0.30*	0.34*	0.01	0.02	-0.07
ΔReturn	0.25*	1	0.00	0.00	0.00	0.00	0.00
ΔCEO_PVHon	0.29*	0.00	1	0.72*	0.12*	-0.03	-0.04
ΔCEO_Trustworthy	0.35*	0.00	0.76*	1	0.11*	-0.08*	-0.10*
Age	0.01	0.00	0.13*	-0.01	1	-0.10*	0.12*
Female	0.02	0.00	-0.06	-0.08*	0.12*	1	-0.34*
Economics	-0.07	0.00	-0.01	-0.09*	-0.03	-0.34*	1

**Table A2: Investment choices and the interaction of CEO characteristics
with claimed future returns**

This table presents the results of logit regressions for Experiment 1. The dependent variable is *Invest in A*, which is 1 when a participant chooses to invest in the company managed by CEO A, and 0 otherwise. Participants made four such choices each. *ΔReturn* is the difference in claimed future returns between CEO A and CEO B. We test the interaction of differences in perceived CEO willingness to make financial sacrifices (*Sacrifice*) and differences in perceived CEO long-term orientation (*LTO*) with differences in claimed future returns (*ΔReturn*). All other variables remain exactly as in Table 5. P-values, based on standard errors clustered at the individual level, are reported in parentheses. *** 1% significance; ** 5% significance, * 10% significance.

	(1)	(2)
ΔReturn	0.028***	0.028***
	(0.00)	(0.00)
ΔCEO_PVHon	0.726***	0.745***
	(0.00)	(0.00)
ΔCEO_Trustworthy	0.512***	0.532***
	(0.00)	(0.00)
*ΔReturn * ΔCEO_PVHon*	-0.010*	-0.013**
	(0.10)	(0.04)
*ΔReturn * ΔCEO_Trustworthy*	0.004	0.003
	(0.39)	(0.55)
*ΔReturn*Sacrifice*		0.002
		(0.77)
*ΔReturn*LTO*		0.007
		(0.31)
Sacrifice		0.003
		(0.97)
LTO		-0.058
		(0.62)
Age	0.005	0.008
	(0.83)	(0.77)
Female	0.192	0.192
	(0.35)	(0.36)
Economics	-0.176	-0.186
	(0.39)	(0.38)
Constant	0.444	0.399
	(0.48)	(0.54)
Observations	564	564
Pseudo R-squared	0.164	0.168
Pseudo Log Likelihood	-315.1	-313.5
Base Log Likelihood	-376.7	-376.7

Table A3: Correlation matrix for Experiment 2

The tables in Panel A and Panel B present the Spearman above the diagonal and the Pearson correlations below for the subsamples proself and prosocial investors separately. * indicate significance at the 5% level.

Panel A Investors with a proself value orientation

	Invest in A	ΔReturn	ΔCEO_PVHon	ΔCEO_Trustworthy	Age	Female	Economics	Investor_PVHon
Invest in A	1.00	0.21*	0.29*	0.27*	-0.04	0.03	-0.05	0.03
ΔReturn	0.21*	1.00	0.00	0.00	0.00	0.00	0.00	0.00
ΔCEO_PVHon	0.29*	0.00	1.00	0.65*	-0.03	0.04	-0.11	0.13*
ΔCEO_Trustworthy	0.28*	0.00	0.65*	1.00	0.02	0.15*	-0.24*	0.28*
Age	0.01	0.00	0.04	0.09	1.00	-0.19*	0.20*	0.18*
Female	0.03	0.00	0.06	0.11	-0.11	1.00	-0.45*	0.16*
Economics	-0.05	0.00	-0.14*	-0.19*	0.15*	-0.45*	1.00	-0.22*
Investor_PVHon	0.05	0.00	0.11	0.30*	0.27*	0.21*	-0.24*	1.00

Panel B Investors with a prosocial value orientation

	Invest in A	ΔReturn	ΔCEO_PVHon	ΔCEO_Trustworthy	Age	Female	Economics	Investor_PVHon
Invest in A	1.00	0.07	0.14*	0.22*	-0.07	-0.08	-0.09	0.19*
ΔReturn	0.07	1.00	0.00	0.00	0.00	0.00	0.00	0.00
ΔCEO_PVHon	0.16*	0.00	1.00	0.48*	-0.01	-0.14*	-0.24*	0.12
ΔCEO_Trustworthy	0.22*	0.00	0.51*	1.00	-0.02	-0.12*	-0.16*	0.06
Age	-0.04	0.00	0.09	0.06	1.00	-0.16*	0.19*	-0.07
Female	-0.08	0.00	-0.08	-0.10	-0.16*	1.00	-0.23*	0.15*
Economics	-0.09	0.00	-0.26*	-0.16*	0.04	-0.23*	1.00	-0.44*
Investor_PVHon	0.21*	0.00	0.22*	0.11	-0.03	0.18*	-0.42*	1.00

Table A4: Investment choices and Perceived CEO Protected Values for Honesty depending on investor Social Value Orientation (Median Split)

This table presents the results of logit regressions for Experiment 2. The dependent variable is *Invest in A*, which is 1 when a participant chooses to invest in the company managed by CEO A, and 0 otherwise. Participants made four such choices each. The table shows two regressions for each investor subsample. Participants are categorized as proself or prosocial based on a median split to overcome excluding participants using the traditional approach by van Lange et al. (1997). We counted the self-maximizing choices in the Investor_SVO task and performed a median split on this variable. Participants above the median were categorized as proself and participants below or on the median were categorized as prosocial. All other variables remain exactly as in Table 8 columns 1- 6. P-values, based on standard errors clustered at the individual level, are reported in parentheses. *** 1% significance; ** 5% significance, * 10% significance.

	(1)	(2)	(3)	(4)	(5)	(6)
Investor_SVO	**Proself value orientation**			**Prosocial value orientation**		
ΔReturn	0.016**	0.014*	0.014*	0.008	0.008	0.008
	(0.04)	(0.08)	(0.08)	(0.28)	(0.27)	(0.25)
ΔCEO_PVHon	0.656***	0.668***	0.672***	0.320***	0.314***	0.313***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)
*ΔReturn * *	-0.013*	-0.011	-0.012	0.004	0.004	0.004
ΔCEO_PVHon	(0.10)	(0.15)	(0.13)	(0.61)	(0.57)	(0.55)
Investor_PVHon	-0.085	-0.033	-0.034	0.504***	0.515***	0.514***
	(0.52)	(0.78)	(0.76)	(0.00)	(0.00)	(0.00)
*Investor_PVHon * *		0.081	0.053		0.101	0.098
ΔCEO_PVHon		(0.34)	(0.57)		(0.26)	(0.29)
*Investor_PVHon * *		-0.014*	-0.011		-0.003	-0.003
ΔReturn		(0.06)	(0.15)		(0.76)	(0.71)
*Investor_PVHon * *			0.008			-0.003
ΔReturn ΔCEO_PVHon*			(0.27)			(0.64)
ΔCEO_Trustworthy	0.291**	0.273*	0.280*	0.295***	0.308***	0.308***
	(0.04)	(0.07)	(0.06)	(0.00)	(0.00)	(0.00)
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.372	-0.354	-0.371	1.341**	1.311**	1.312**
	(0.55)	(0.56)	(0.54)	(0.01)	(0.01)	(0.01)
Observations	288	288	288	312	312	312
Pseudo R-squared	0.120	0.136	0.141	0.0807	0.0826	0.0834
Pseudo Log Likelihood	-172.5	-169.2	-168.3	-193.8	-193.4	-193.3
Base Log Likelihood	-195.9	-195.9	-195.9	-210.8	-210.8	-210.8

Table A5: Investment choices and Perceived CEO Protected Values for Honesty depending on investor Social Value Orientation controlling for Financial Savviness

This table presents the results of logit regressions for Experiment 2. The dependent variable is *Invest in A*, which is 1 when a participant chooses to invest in the company managed by CEO A, and 0 otherwise. Participants made four such choices each. The table shows two regressions for each investor subsample. We control for whether a participant has made stock investments or not (Stocks) and whether he or she regularly reads the financial news or not (Financial_News). These items serve as a proxy for participants' financial savviness. All other variables remain exactly as in Table 8 columns 1- 6. P-values, based on standard errors clustered at the individual level, are reported in parentheses. *** 1% significance; ** 5% significance, * 10% significance.

	(1)	(2)	(3)	(4)	(5)	(6)
Investor_SVO	Proself value orientation			Prosocial value orientation		
ΔReturn	0.020**	0.019**	0.019**	0.006	0.007	0.007
	(0.02)	(0.04)	(0.04)	(0.41)	(0.40)	(0.39)
ΔCEO_PVHon	0.711***	0.717***	0.706***	0.305**	0.286**	0.286**
	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)
*ΔReturn * ΔCEO_PVHon*	-0.019*	-0.018*	-0.021*	0.003	0.004	0.004
	(0.08)	(0.09)	(0.05)	(0.67)	(0.64)	(0.62)
Investor_PVHon	-0.087	-0.087	-0.079	0.552***	0.579***	0.577***
	(0.59)	(0.56)	(0.60)	(0.00)	(0.00)	(0.00)
*Investor_PVHon * ΔCEO_PVHon*		-0.039	-0.059		0.166*	0.164*
		(0.79)	(0.68)		(0.07)	(0.09)
*Investor_PVHon * ΔReturn*		-0.018**	-0.017*		-0.001	-0.001
		(0.04)	(0.05)		(0.94)	(0.90)
*Investor_PVHon * ΔReturn* ΔCEO_PVHon*			0.012			-0.002
			(0.25)			(0.75)
ΔCEO_Trustworthy	0.317**	0.330**	0.343**	0.351***	0.367***	0.367***
	(0.04)	(0.05)	(0.04)	(0.00)	(0.00)	(0.00)
Age	0.013	0.014	0.009	-0.030	-0.031	-0.031
	(0.83)	(0.81)	(0.88)	(0.13)	(0.12)	(0.12)
Female	-0.056	-0.092	-0.100	-0.620**	-0.572**	-0.574**
	(0.86)	(0.77)	(0.75)	(0.02)	(0.02)	(0.02)
Economics	0.019	0.008	-0.006	0.170	0.219	0.220
	(0.93)	(0.97)	(0.98)	(0.50)	(0.39)	(0.39)
Stocks	-0.037	-0.033	-0.020	-0.194	-0.136	-0.136
	(0.89)	(0.91)	(0.94)	(0.43)	(0.58)	(0.58)
Financial_News	-0.041	-0.044	-0.046	-0.141	-0.143	-0.144
	(0.74)	(0.74)	(0.72)	(0.14)	(0.13)	(0.12)
Constant	0.328	0.364	0.479	1.792***	1.747***	1.750***
	(0.83)	(0.81)	(0.75)	(0.00)	(0.00)	(0.00)
Observations	240	240	240	288	288	288
Pseudo R-squared	0.135	0.157	0.163	0.0828	0.0868	0.0872
Pseudo Log Likelihood	-140.1	-136.5	-135.5	-177.7	-176.9	-176.8
Base Log Likelihood	-161.9	-161.9	-161.9	-193.7	-193.7	-193.7

A.3   Instructions for Experiment 1

[Note: "**--------------------------------------**" indicates a separate page in the experiment]

Welcome!
This is a study on decision-making of individuals in the role of shareholders. With your participation you help us learn more about factors that are associated with decision making.
The study will take about 15 minutes to complete. In what follows, you should put yourself in the role of a shareholder. As such, you will have to make a series of decisions, just like a real shareholder.

Of course, your choices will be treated confidentially and anonymously. For your participation you earn CHF 10-15. Total compensation depends on your decisions as well as on the correctly answered interposed questions (that can be answered correctly by reading the instructions carefully).

Please enter the following code:

- *The last 3 digits of your Legi +*
- *"R" +*
- *2 letters of your choice*

Example: Legi number = 01-705-234 - any> 234
2 random letters. Nz

-> Insert code: 234Rnz (Example)

General Information

Please consider the following:
- *Read the instructions for the tasks and questions carefully!*
- *Please answer all questions!*
- *Please answer openly and honestly! As only your personal perspective counts, there are - except for the interposed questions - no right or wrong answers.*

Personal details

Sex
- *Male*
- *Female*

Age (for example, 38)

In which field are you studying?
- *Psychology: Social and Economic Psychology*
- *Psychology: Another area*
- *Psychology Minor: Major subject:*
- *Economics: Banking and Finance*
- *Economics: Another area:*
- *Economics as a minor subject: Main subject:*

Information about your compensation

- *In what follows, you will put yourself in the role of a shareholder. The amount of money you receive at the end of the experiment depends on whether you will have been successful with your investment or not. Thus you receive between CHF 10 and CHF 15.*
- *In addition, some interposed questions are asked that lead to a discount in case of a false answer. However, the questions can be answered easily if you read the instructions carefully. In case of complete participation, you receive CHF 10 in any case.*

Introduction
Please read the following description of the situation carefully.

Imagine...

*You are an investor and think about investing CHF 50'000 in either **Firm A** or in **Firm B**. In order to get a picture of each CEO and company, you will be provided with information below.*

Firm A and Firm B differ only in terms of their publicly announced earnings per share and the performance-based compensation of each CEO. The CEO pay consists of a fixed and a variable component. The variable component is a bonus, which depends on the announced earnings per share. You know that a CEO can influence, using legal accounting procedures the earnings per share that are announced to the market.

Firm	Earnings per share expected by the market	True earnings per share	Earnings per share announced by the CEO	CEO pay
A	*35*	*Only known to the CEO*	*31*	*CHF 1'300'000*
B	*35*	*Only known to the CEO*	*35*	*CHF 2'200'000*

The table shows:
Firm B announced higher earnings per share and therefore the CEO of Firm B received higher pay. If the CEO of Firm A had announced the same earnings as CEO B, he would have also earned CHF 2'200'000.

Information
Prior to the actual decisions, you will be asked some interposed questions on the next page. Answering these questions incorrectly will lead to a discount of your compensation and you will need to answer these questions correctly to proceed.

Interposed questions
Can a CEO announce earnings that deviate from the company's true earnings?

- *Yes*
- *No*

The compensation of the CEO...

- *depends on the announced earnings per share*
- *does not depend on the announced earnings per share*

Which CEO received higher pay?

- *CEO of Firm A*
- *CEO of Firm B*

Now we are interested in how you perceive the two CEOs – Firm A vs. Firm B - to differ from your personal point of view.

To what extent do you rate CEO A as ...

	-2	-1	0	+1	+2	
untrustworthy						trustworthy
short time profit-oriented						long term profit-oriented
not willing to make financial sacrifices						willing to make financial sacrifices

To what extent do you rate CEO B as ...

	-2	-1	0	+1	+2	
untrustworthy						trustworthy
short time profit-oriented						long term profit-oriented
not willing to take financial sacrifices						willing to take financial sacrifices

----

Compensation scheme in the experiment

Now you will be informed about the possible returns on investment of the two companies.
The amount you receive at the end of the experiment corresponds to CHF 5 + 1/10,000 of the total returns.

2 examples - You invest CHF 50'000:
- *If the investment turns out to be **successful**, and the claimed future return is 10%, then you will receive a fixed compensation of CHF 50,000 (CHF 5) plus the amount of CHF 5,000 (CHF 0.50), thus CHF 5.5 in total.*
- *With a claimed future return of 30%, you will receive the fixed compensation of CHF 50,000 (CHF 5) plus the amount of CHF 15,000 (CHF 1.50), thus CHF 6.5 in total.*

*If the investment turns out to be **unsuccessful**, you will receive only the investment of CHF 50,000 (CHF 5) back.*

In what follows, 4 possible investment situations will be presented to you.

Situation 1

Now you have the opportunity to invest CHF 50'000 either in Firm A or in Firm B.
*CEO A claims to increase the firm value by **20%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 10,000** (or CHF 1.00), as well as the investment of CHF 50,000 back (or CHF 5).*

*CEO B claims to increase the firm value by **30%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 15,000** (or CHF 1.50), as well as the investment of CHF 50,000 back (or CHF 5).*

In which company do you invest your money?

- *I invest in Firm A*
- *I invest in Firm B*

Situation 2

Now you have the opportunity to invest CHF 50'000 either in Firm A or in Firm B.
*CEO A claims to increase the firm value by **30%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 15,000** (or CHF 1.50), as well as the investment of CHF 50,000 back (or CHF 5).*

*CEO B claims to increase the firm value by **20%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 10,000** (or CHF 1.50), as well as the investment of CHF 50,000 back (or CHF 5).*

In which company do you invest your money?

- *I invest in Firm A*
- *I invest in Firm B*

Situation 3

Now you have the opportunity to invest CHF 50'000 either in Firm A or in Firm B.
*CEO A claims to increase the firm value by **10%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 5,000** (or CHF 0.50), as well as the investment of CHF 50,000 back (or CHF 5).*

*CEO B claims to increase the firm value by **40%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 20,000** (or CHF 2.00), as well as the investment of CHF 50,000 back (or CHF 5).*

In which company do you invest your money?

- *I invest in Firm A*
- *I invest in Firm B*

Situation 4

Now you have the opportunity to invest CHF 50'000 either in Firm A or in Firm B.
*CEO A claims to increase the firm value by **40%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 20,000** (or CHF 2.00), as well as the investment of CHF 50,000 back (or CHF 5).*

*CEO B claims to increase the firm value by **10%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 5,000** (or CHF 0.50), as well as the investment of CHF 50,000 back (or CHF 5).*

In which company do you invest your money?

- *I invest in Firm A*
- *I invest in Firm B*

SA-9 (Experiment 1)

CEOs' compensation levels depend on the earnings they report to shareholders. CEOs have an incentive to modify reports to shareholders. What do you think is the CEO of Firm A's opinion on modifying company information in reports?

Please choose the appropriate category for CEO A.
CEO A thinks that this is ...

very immoral								very moral
not at all praiseworthy								very praiseworthy
not at all blameworthy								very blameworthy
not at all outrageous								very outrageous
not at all acceptable								very acceptable

CEOs' compensation levels depend on the earnings they report to shareholders. CEOs have an incentive to modify reports to shareholders. What do you think is the CEO of Firm B's opinion on modifying company information in reports?

Please choose the appropriate category for CEO B.
CEO B thinks that this is ...

very immoral								very moral
not at all praiseworthy								very praiseworthy
not at all blameworthy								very blameworthy
not at all outrageous								very outrageous
not at all acceptable								very acceptable

----

*CEOs have an opportunity to modify information in the reports they provide to shareholders. Some view such modification as a violation of truthfulness; others regard it as acceptable protection of personal interests. What do you believe does **CEO A** think about the value of truthfulness in such a situation?*

Truthfulness is something …

… that one should not sacrifice, no matter what the (material or other) benefits.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

… for which it is right to make a cost-benefit analysis.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

… that cannot be measured in monetary terms.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

… about which one can be flexible if the situation demands it.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

CEOs have an opportunity to modify information in the reports they provide to shareholders. Some view such modification as a violation of truthfulness; others regard it as acceptable protection of personal interests. What do you believe does **CEO B** *think about the value of truthfulness in such a situation?*

Truthfulness is something …

… that one should not sacrifice, no matter what the (material or other) benefits.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

… for which it is right to make a cost-benefit analysis.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

… that cannot be measured in monetary terms.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

… about which one can be flexible if the situation demands it.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

Thank you very much for your participation!

A.4 Instructions for Experiment 2

A.4.1 Instructions of the questionnaire part of Experiment 2

Welcome!

This is the online questionnaire part of the investment behavior study. Your participation will help us learn more about factors that are associated with decision making.

Please note that you cannot participate in the laboratory experiment without completing the present questionnaire.

The questionnaire will take about 15 minutes to complete.

For your full participation you will receive a total amount between **CHF 10 and CHF 15**, *depending on your decisions in the computer lab. The amount will be paid at the end of the experiment in the computer lab.*

Your information will be treated confidentially and anonymously.

Anonymity

To ensure anonymity, please generate your personal identification code.

Your identification code is composed as follows:

- *First letter of the first name of the mother*   *(Ex: Andrea = A)*
- *Second letter of the first name of the father*   *(Ex: Stefan = t)*
- *Month of your birthday*   *(Ex: 06/17/1963 = 06)*
- *Last two digits of the Legi*   *(Ex: At0601)*

Please fill in your **personal identification code**. *Make sure to use the same identification code later in the experiment in the computer lab!*

General Information

Please note the following points:
- *Read the instructions for the individual tasks and questions carefully!*
- *Please answer all questions!*
- *Please answer openly and honestly! Since your personal perspective alone counts, there are no right or wrong answers.*

<div align="center">-----------------------------------</div>

Personal details

Sex
- *Male*
- *Female*

Age

In which field are you studying?
- *Psychology: Social and Economic Psychology*
- *Psychology: Another area*
- *Psychology Minor:*   *Major subject:*
- *Economics: Banking and Finance*
- *Economics: Another area:*
- *Economics as a minor subject: Main subject:*

Do you own individual stocks, stock funds or bonds?
- *Yes*
- *No*
- *No answer*

How many times have you informed yourself about economic events in the last month?
- *Daily*
- *Several times a week*
- *Once a week*
- *Less than once a week*
- *Never*

<div align="center">-----------------------------------</div>

After entering your personal information, let us go on to with the actual survey.

<div align="center">-----------------------------------</div>

On this page and the next page, you will find statements that may apply more or less to yourself.

Please indicate how much you agree or disagree with each statement.

	strongly disagree	disagree	neutral	agree	strongly agree
I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.					
If I want something from someone, I will laugh at that person's worst jokes.					

I wouldn't pretend to like someone just to get that person to do favors for me.					
If I knew that I could never get caught, I would be willing to steal a million dollars.					
I would never accept a bribe, even if it were very large.					

Please indicate how much you agree or disagree with each statement.

	strongly disagree	disagree	neutral	agree	strongly agree
I'd be tempted to use counterfeit money, if I were sure I could get away with it.					
Having a lot of money is not especially important to me.					
I would get a lot of pleasure from owning expensive luxury goods.					
I think that I am entitled to more respect than the average person is.					
I want people to know that I am an important person of high status.					

Because of their profit-related compensation structure, CEOs have the incentive to modify information in the reports they provide to shareholders.

What do you think about managers changing company information in reports?

very immoral							very moral
not at all praiseworthy							very praiseworthy
not at all blameworthy							very blameworthy
not at all outrageous							very outrageous
not at all acceptable							very acceptable

CEOs have an opportunity to modify information in the reports they provide to shareholders. Some view such modification as a violation of truthfulness; others regard it as acceptable protection of personal interests.

What do you think about the value truthfulness in such a situation?

Truthfulness is something …

… that one should not sacrifice, no matter what the (material or other) benefits.

I strongly disagree							I strongly agree

… for which it is right to make a cost-benefit analysis.

I strongly disagree							I strongly agree

… that cannot be measured in monetary terms.

I strongly disagree							I strongly agree

… about which one can be flexible if the situation demands it.

I strongly disagree							I strongly agree

Imagine that you were paired randomly with another person. You do not know the other person and you will not know the person in the future. By your own decision, you distribute points to you and the other person. The same way, the other person is distributing points to you and himself /herself. Every point is valuable. The more points you get, the better for you, and the more points the other person gets, the better for him / her. Here is an example of how the task works:

In this example, if you select A you would get 500 points and the other person would get 100 points; if you choose B, you would get 500 points and the other person 500; and if you choose C would you 550 points and run the other person 300.

(Example)[25]	A	B	C
You receive	*500*	*500*	*550*
Other person receives	*100*	*500*	*300*

Thus, you see your decision influences both the score you achieve and the score for the other person. For each of these nine decision situations click A, B or C, depending on which column you prefer most.

1.	A	B	C
You receive	*480*	*540*	*480*
Other person receives	*80*	*280*	*480*
A	B		C

2.	A	B	C
You receive	*560*	*500*	*500*
Other person receives	*300*	*500*	*100*
A	B		C

3.	A	B	C

---

[25] In this example, Option A is the competitive choice, Option B the cooperative choice, and Option C the individualistic choice. Participants are typically categorized as pro-self, when they choose the competitive or individualistic option in 6 or more out of the 9 trials, and are categorized as prosocial, when they choose the cooperative option in at least 6 out of the 9 trials (e.g. van Dijk, De Cremer, and Handgraaf (2004)).

SA-14 (Experiment 2)

You receive	520	520	580
Other person receives	520	120	320
A	B		C

4.	A	B	C
You receive	500	560	490
Other person receives	100	300	490
A	B		C

5.	A	B	C
You receive	560	500	490
Other person receives	300	500	90
A	B		C

6	A	B	C
You receive	500	500	570
Other person receives	500	100	300
A	B		C

7.	A	B	C
You receive	510	560	510
Other person receives	510	300	110
A	B		C

8.	A	B	C
You receive	550	500	500
Other person receives	300	100	500
A	B		C

9.	A	B	C
You receive	480	490	540
Other person receives	100	490	300
A	B		C

Important!

Appointment reminder for the computer lab!

The online questionnaire is almost over now. We thank you for your participation! As previously mentioned, the experiment consists of this online questionnaire and a part in the computer lab, for which you have already registered. Please reserve the date in advance!

Of course, your answers in today's survey as well as your answers in the next session remain anonymous. Only you know your personal code, which you have chosen at the beginning. You will enter this code at the beginning of the session in the computer lab to take part in the experiment.

The payment will be carried out after the session in the computer lab. You will receive an envelope labeled with your code containing your payment. The person giving you the envelope does not know the its content. Thus, complete anonymity is guaranteed.

For questions or comments feel free to contact us.

A.4.2 Instructions of the laboratory part of Experiment 2

Welcome!

This is a study on investment behavior. Your participation will help us learn more about factors that are associated with decision making.

This study will take about 15 minutes. Please take this time. It is very important for us that you complete the tasks carefully and seriously.

In what follows, you should put yourself in the role of a shareholder. As such, you will have to make a series of decisions, just like a real shareholder.

For your complete participation you earn CHF 10 – CHF 15. Total compensation depends on your decisions as well as on the correctly answered interposed questions (that can be answered correctly by reading the instructions carefully).

Your information will be treated confidentially and anonymously.

Anonymity

To ensure your anonymity, please generate your personal identification code.

Your identification code is composed as follows:

- *First letter of the first name of the mother*　　　*(Ex: Andrea = A)*
- *Second letter of the first name of the father*　　*(Ex: Stefan = t)*
- *Month of your own birthday*　　　　　　　　*(Ex: 06/17/1963 = 06)*
- *Last two digits of the Legi*　　　　　　　　　*(Ex: At0601)*

Only you know your personal code. Please note down your code. You will need the code for your compensation.

General Information

Please note the following points:

- *Read the instructions for the individual tasks and questions carefully!*
- *Please answer all questions!*

Please answer openly and honestly! Since your personal perspective alone counts, there are - except for the interposed questions - no right or wrong answers.

Information about your compensation

- *In what follows, you will put yourself in the role of a shareholder. The amount of money you receive at the end of the experiment depends on whether you will have been successful with your investment or not. Thus you receive between CHF 10 and CHF 15.*
- *In addition, some interposed questions are asked that lead to a discount in compensation in case of a false answer. However, the questions can be answered easily, if you read the instructions carefully. In case of complete participation, you receive CHF 10 in any case.*
- *You will receive your compensation at the end of the experiment. You will get more information on that at the end of the experiment.*

Introduction
Please read the following description of the situation carefully.

Imagine...

*You are an investor and think about investing CHF 50'000 in **Firm A** or in **Firm B**. In order to get a picture of each CEO and the company, you are provided with information below.*

Firm A and Firm B differ only in terms of their publicly announced earnings per share and the performance-based compensation of each CEO. The CEO pay consists of a fixed and a variable component. The variable component is a bonus, which depends on the announced earnings per share. You know that a CEO can influence, using legal accounting procedures the earnings per share that are announced to the market.

Firm	Earnings per share expected by the market	True earnings per share	Earnings per share announced by the CEO	CEO pay
A	*35*	*Only known to the CEO*	*31*	*CHF 1'300'000*
B	*35*	*Only known to the CEO*	*35*	*CHF 2'200'000*

The table shows:
Firm B announced higher earnings per share and therefore the CEO of Firm B received higher pay. If the CEO of Firm A had announced the same earnings as CEO B, he would have also earned CHF 2'200'000.

Information
Prior to the actual decisions, you will be asked some interposed questions on the next page. Answering these questions incorrectly will lead to a discount of your compensation and you will need to answer these questions correctly to proceed.

SA-18 (Experiment 2)

Interposed questions

Can a CEO announce a profit, known different from the actual profit?

- *Yes*
- *No*

The compensation of the CEO is ...

- *depending on the announced earnings per share*
- *regardless of the announced earnings per share*

Which CEO has a higher salary?

- *CEO of Firm A*
- *CEO of Firm B*

Now we are interested in how you perceive the two CEOs – Firm A vs. Firm B - to differ from your personal point of view.

*To what extent do you rate the **CEO A** as ...*

not credible					*credible*
untrustworthy					*trustworthy*
short time profit-oriented					*long term profit-oriented*
not willing to take financial sacrifices					*willing to take financial sacrifices*

*To what extent do you rate the **CEO B** as ...*

not credible					*credible*
untrustworthy					*trustworthy*
short time profit-oriented					*long term profit-oriented*
not willing to take financial sacrifices					*willing to take financial sacrifices*

Compensation scheme in the experiment
Now you will be informed about the possible returns on investment of the two companies.
The amount you receive at the end of the experiment corresponds to CHF 5 + 1/10'000ᵗʰ of the total
returns.

2 examples - You invest CHF 50'000:
- *If the investment turns out to be successful, and the claimed future return is 10%, then you will receive a fixed compensation of CHF 50,000 (CHF 5) plus the amount of CHF 5,000 (CHF 0.50), thus CHF 5.5 in total.*
- *With a claimed future return of 30%, you will receive the fixed compensation of CHF 50,000 (CHF 5) plus the amount of CHF 15,000 (CHF 1.50), thus CHF 6.5 in total.*

If the investment turns out to be unsuccessful, you will receive only the investment of CHF 50,000 (CHF 5)
back.

In what follows, 4 possible investment situations will be presented to you..

Situation 1

Now you have the opportunity to invest CHF 50'000 either in Firm A or in Firm B.
*CEO A claims to increase the firm value by **40%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 20,000** (or CHF 2.00), as well as the investment of CHF 50,000 back (or CHF 5).*

*CEO B claims to increase the firm value by **10%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 5,000** (or CHF 0.50), as well as the investment of CHF 50,000 back (or CHF 5).*

In which company do you invest your money?

- *I invest in Firm A*
- *I invest in Firm B*

Situation 2

Now you have the opportunity to invest CHF 50'000 either in Firm A or in Firm B.
*CEO A claims to increase the firm value by **30%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 15,000** (or CHF 1.50), as well as the investment of CHF 50,000 back (or CHF 5).*

*CEO B claims to increase the firm value by **20%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 10,000** (or CHF 1.50), as well as the investment of CHF 50,000 back (or CHF 5).*

In which company do you invest your money?

- *I invest in Firm A*
- *I invest in Firm B*

Situation 3

Now you have the opportunity to invest 50'000 CHF either in Firm A or in Firm B.
*CEO A claims to increase the firm value by **20%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 10,000** (or CHF 1.00), as well as the investment of CHF 50,000 back (or CHF 5).*

*CEO B claims to increase the firm value by **30%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 15,000** (or CHF 1.50), as well as the investment of CHF 50,000 back (or CHF 5).*

In which company do you invest your money?

- *I invest in Firm A*
- *I invest in Firm B*

Situation 4

Now you have the opportunity to invest CHF 50'000 either in Firm A or in Firm B.
*CEO A claims to increase the firm value by **10%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 5,000** (or CHF 0.50), as well as the investment of CHF 50,000 back (or CHF 5).*

*CEO B claims to increase the firm value by **40%**. Should this prove to be the case, you receive - in the case of investment - in the upcoming year **CHF 20,000** (or CHF 2.00), as well as the investment of CHF 50,000 back (or CHF 5).*

In which company do you invest your money?

- *I invest in Firm A*
- *I invest in Firm B*

CEOs' compensation levels depend on the earnings they report to shareholders. CEOs have an incentive to modify reports to shareholders. What do you think is the CEO of Firm A's opinion on modifying company information in reports?

Please choose the appropriate category for CEO A.
CEO A thinks that this is ...

very immoral								very moral
not at all praiseworthy								very praiseworthy
not at all blameworthy								very blameworthy
not at all outrageous								very outrageous
not at all acceptable								very acceptable

CEOs' compensation levels depend on the earnings they report to shareholders. What do you think is the CEO of Firm B's opinion on modifying company information in reports?

Please choose the appropriate category for CEO B.
CEO B thinks that this is ...

very immoral							*very moral*
not at all praiseworthy							*very praiseworthy*
not at all blameworthy							*very blameworthy*
not at all outrageous							*very outrageous*
not at all acceptable							*very acceptable*

CEOs have an opportunity to modify information in the reports they provide to shareholders. Some view such modification as a violation of truthfulness; others regard it as acceptable protection of personal interests. What do you believe does **CEO A** *think about the value of truthfulness in such a situation?*

Truthfulness is something …

… that one should not sacrifice, no matter what the (material or other) benefits.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

… for which it is right to make a cost-benefit analysis.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

… that cannot be measured in monetary terms.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

… about which one can be flexible if the situation demands it.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

CEOs have an opportunity to modify information in the reports they provide to shareholders. Some view such modification as a violation of truthfulness; others regard it as acceptable protection of personal interests. What do you believe does **CEO B** *think about the value of truthfulness in such a situation?*

Truthfulness is something …

… that one should not sacrifice, no matter what the (material or other) benefits.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

… for which it is right to make a cost-benefit analysis.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

… that cannot be measured in monetary terms.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

… about which one can be flexible if the situation demands it.

CEO strongly disagrees	1	2	3	4	5	6	7	CEO strongly agrees

Thank you very much for your participation!

You can pick up your compensation. Please take the envelope that is labeled with your personal identification code.

Feel free to contact us for questions and comments.

about ECGI

The European Corporate Governance Institute has been established to improve *corporate governance through fostering independent scientific research and related activities.*

The ECGI will produce and disseminate high quality research while remaining close to the concerns and interests of corporate, financial and public policy makers. It will draw on the expertise of scholars from numerous countries and bring together a critical mass of expertise and interest to bear on this important subject.

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