

Financial Narratives and Investor Beliefs: Experimental Evidence*

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Abstract

In a randomized control trial, we let employees at firms in the Boston area watch financial advice videos. Each video treatment emphasizes either the benefits of passive investment strategies (diversification and low fees) or those of active strategies (stock picking and market timing). We elicit the subjects' beliefs both before and after the video to quantify belief changes. We find that on average, people update their beliefs about investment strategies in the direction of the advice they receive. However, there is significant heterogeneity based on the type of advice and the subjects' financial literacy. Financially more literate subjects positively update in response to seeing the passive advice, but do not update (and rate the advice negatively) when exposed to active advice. In contrast, financially less literate subjects are strongly influenced by both types of advice. This paper offers the first evidence on how the demand side processes financial advice.

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1 Introduction

Households in the U.S. and other developed economies are increasingly required to make complex financial choices, ranging from how to invest their retirement savings or pay for their education, to how to insure against health risks. To help consumers make sense of this complex set of products, a large and almost equally varied market for financial advice has developed alongside. Advice can take many forms, from traditional in-person advice by individual financial advisors, to technology-aided (robo) advice tools, to even completely automated products where advice is built directly into the product, for example, Target Date Funds.

A large literature in finance has analyzed the supply side of financial advice and highlighted potential benefits but also many limitations in the quality or adequacy of advice. These distortions might arise due to advisors' conflicts of interest, incompetence, shortcoming in market structures or regulation (see [Gomes, Haliassos, and Ramadorai 2021](#) for a careful review). However, advice is not supplied in isolation. The best advice would be futile if consumers cannot understand the advice, or if they are unable or unwilling to act on it.¹ Similarly, if consumers do not understand concepts such as diversification or the Sharpe ratio, they might not be able to differentiate good from bad advice.

In addition, these limitations stemming from the demand side of financial advice can affect the type of advice that is offered. If retail investors perceive advice that is complicated or goes against their prior beliefs as suspicious or unconvincing, even well-intentioned advisors might have to narrow the advice they offer to concepts that are very simple and are in line with what investors already believe in. If demand side distortions shape the type of advice that can be provided, it can also complicate the evaluation of the impact of advice.

In this paper, we therefore offer the first study in the literature on how the demand side processes financial advice. We are interested in how retail investors react to advice that either confirms or contradicts their prior beliefs, and whether or to what extent they update their beliefs in response to financial advice. We also examine whether people can distinguish between “good” and “bad” advice, and whether the responses to financial advice vary across people with different levels of

1. For example, many studies have highlighted that a lack of trust in financial institutions might prevent some consumers from seeking advice or participating in financial markets, even if they could benefit from it ([Guiso, Sapienza, and Zingales 2008](#); [Campbell et al. 2011](#)).

financial literacy.

In our study we focus on one of the most debated dimension of financial advice – whether retail investors should follow active or passive investment strategies, see, for example, [Gruber 1996](#) and [French 2008](#).² The efficient market hypothesis has made a case for passive strategies for over half a century, during which the rise of index funds has given many households a low-cost option to track the performance of a broad-based market index. At the same time, actively managed funds continue to represent a sizable market share and a number of academic studies found evidence for fund manager skills in certain segments of the market. The assets in mutual funds and exchange-traded funds (ETFs) are currently almost equally split among active and passive strategies.³ Against this background, we study how investors with different prior beliefs about financial markets process financial advice that either recommends active or passive investment strategies; and whether investors’ beliefs about active and passive strategies can be influenced by the advice they see.

We designed and carried out a randomized controlled trial (RCT) that is akin to a lab in the field study. To convey different types of financial advice, i.e. passive versus active, we worked with real financial advisors to develop a set of representative scripts. These scripts use the typical language used in the industry to either convey a strategy that promotes portfolio diversification and passive index investing with low fees (which we call *Pro-Passive*), or on a strategy of active management and identifying “hot” industries (which we call *Pro-Active*). We recorded these scripts as short videos with trained actors. Both types of videos are fully scripted. The set-up of the videos is similar to online investor education videos that is often supplied by fund companies, robo advisors or other information providers such as Morningstar. The information provided in the video are also similar to what would be a conveyed in a face-to-face meeting with a financial advisor. Our videos therefore represent two common information acquisition methods for individual investors.⁴

We recruited our pool of participants by advertising at a large number of employers in the Boston and Cambridge area. These participants were invited to a lab setting, where they first answered a

2. In other words, whether retail investors should invest in in funds that actively select stocks and/or time the market to beat a benchmark index, or those that passively hold the index to gain exposure to (a segment of) the market.

3. In 2022, the market share of passive strategies including both index mutual funds and exchange-traded funds stood at 46% of all fund assets. This share has risen from 13% in 2005 and 20% in 2010 ([ICI 2022](#)).

4. See [ICI 2006](#). The fractions of investors who use “consultations with financial advisors” or “the Internet” were 73% and 46%, respectively, in 2006.

short survey about their demographics, as well as their pre-existing beliefs about financial markets and the best investment strategies. From these answers, we classify subjects into “*Pro-Passive*” and “*Pro-Active*” types: investors who came into the study believing that a good investment strategy is to hold a diversified low fee portfolio, versus those who believed one should try to identify promising industries or firms and time the market. We also assessed the subjects’ financial literacy levels before the video through a set of questions, but do not condition the randomization on financial literacy.

The focus of our experiment is a 2-by-2 assignment, where investors are randomly assigned to see a video that either confirms their existing investment beliefs or goes against them. Specifically, independent of being classified as *Pro-Active* or *Pro-Passive*, both sets of investors are randomly assigned to either an *Active Video* or a *Passive Video*, which recommends the corresponding strategy.⁵ After showing the videos, we ask the subjects to rate the quality of the advice, the competence and likability of the advisor and again, we measure the subjects’ beliefs along the passive-active spectrum. After the completion of the post-video survey, every participant watched a detailed debrief video on what the academic knowledge is about good investment strategies, so as to mitigate any potentially misleading effect of the video treatment.

We document four main sets of results. First, we find a sizable treatment effect of the advice videos on the subjects’ ex post beliefs. On average, people who watch the video with the active advice become more pro-active in their posterior beliefs, and vice versa for people who watch the passive advice. In terms of the belief measure which we construct – a score that ranges from -4 (highly pro-active) to +4 (highly pro-passive) – belief is moved on average by 1.5 points in the direction of the advice. This estimate represents an average effect across the treatment groups that watch videos in line with their prior beliefs and those that watch the advice opposite to their original beliefs, and the magnitude of the effect is about 70% of one standard deviation of the prior belief distribution.

We also find that subjects react more strongly to the passive video. When pro-active subjects watch the passive video, their beliefs are moved by 3.1 points toward more pro-passive beliefs on

5. This randomization leaves us with four groups (1) Pro-Passive, saw Passive Video, (2) Pro-Passive, saw Active Video (3) Pro-Active, saw Passive Video, and (4) Pro-Active, saw Active Video.

average. In contrast, when pro-passive people watch the active video, their belief only move by 1.6 points toward more pro-active.

Second, we find significant heterogeneity in the responses to financial advice by subjects with different levels of financial literacy, and the asymmetric effect between the passive and active videos is entirely driven by the high literacy group. Financially sophisticated subjects are only influenced by the passive advice and show no change in beliefs after watching the active advice. Further, the high literacy subjects rate the active video significantly lower than the passive video. Overall, if we take the passive advice as the higher quality advice, the financially more literate subjects demonstrate an ability to distinguish good from bad advice, and it is in fact difficult to sell bad advice to them.

In contrast, less financially literate subjects do not seem to be able to distinguish between good and bad advice. They rate all advice videos similarly and update their beliefs in the direction of the financial advice they receive, no matter whether they see the passive or active advice video. This potentially makes them vulnerable to bad financial advice.⁶

We also find that, interestingly, subjects in all groups and literacy levels rank the “likability” of the advisor at a similar level, and these ratings do not depend on whether the advice confirms people’s priors or not. This implies that subjects in the experiment are able to differentiate between the quality of the advice (where we see strong differences) and the personality of the advisor in the video.

Another intriguing finding is that though people rate the passive advice as having higher quality, they are not more likely to indicate a willingness to return to the advisor who recommends the passive approach. This result is consistent with index funds being a substitute for traditional financial advice and confirms empirical studies that document the un-bundling of the index fund from broker advice (Mullainathan, Noeth, and Schoar 2012; Sun 2021).

Third, we confirm the main findings by examining two alternative beliefs that are related to the choice of active versus passive management but not directly asked in the pre- and post-video ranking question. The average fund fee is a piece of information that retail investors are typically

6. Some prior studies have shown that low financial literacy also leads to low take-up of financial advice (Bhattacharya et al. 2012; Gaudecker 2015; Chang and Szydlowski 2020)

unaware of, which may be a reason that many choose active management. Similarly, we ask whether investors believe it is possible to earn higher than the market return. Both treatment videos explain the average mutual fund fee, but the passive video makes it clear that the fees are not providing retail investors with higher returns. Consequently, we find that the fee information is better retained by those watching the passive video. Likewise, the active video recommends an investment strategy that identifies industries or firms with excess returns relative to the market, and investors watching this video are more likely to believe in beating the market. Taken together, these results offer additional support that the subjects experience actual shifts in their investment beliefs following the video.

Finally, at the end of the session participants were prompted to make a portfolio choice from six hypothetical portfolios as if they were to invest with their own money. We incentivized the choices: Subjects could win a \$3,000 award, set up as a lottery prize for participating in this experiment, which would be received in the form of the portfolio they picked in this question.

The six funds are three pairs, where each pair consists of an index fund and an actively managed fund that have approximately equal risk and net-of-fee return. The three pairs represent three different levels of risk-return trade-off to appeal to investors with different risk preferences. We did not show the names of the funds, but only presented their historical performances using six bar charts and had the average historical returns labeled. The type of fund (active or passive) was also clearly stated next to each chart.

We find that both pre-existing beliefs and the advice received matter for people's portfolio choices, and if anything, the impact of the advice appears greater. Further, the advice that recommends active management has a strong effect on the portfolio choices of the low literacy subjects, implying that these investors are likely to be steered into (perhaps unsuitable) products that are recommended by financial advisors.

Related Literature Our paper relates to the literature that analyzes the effect of financial advisors and financial advice on advisees' investment decisions. Researchers have previously documented that advised portfolios underperform self-directed portfolios in risk-adjusted returns (e.g., [Bergstresser, Chalmers, and Tufano 2009](#); [Hackethal, Haliassos, and Jappelli 2012](#); [Kramer 2012](#); [Del Guercio](#)

and Reuter 2014; Egan, Ge, and Tang 2020). Arguably, empirical studies have suggested a link between the poor quality of financial advice and certain features of the advised portfolios, such as favoring active funds (e.g., Linnainmaa, Melzer, and Previtero 2021), excessive turnovers and risk-taking (e.g., Bluethgen et al. 2008; Del Guercio and Reuter 2014), and high commissions (e.g., Christoffersen, Evans, and Musto 2013; Egan 2019; Chalmers and Reuter 2020). The low quality of financial advice is often attributed to the conflicts of interest between advisors and their clients which originate from the fundamental misalignment of advisors' financial incentives and the best interests of their clients (e.g., Inderst and Ottaviani 2009; Edelen, Evans, and Kadlec 2012; Christoffersen, Evans, and Musto 2013; Gurun, Stoffman, and Yonker 2021). Studies have generally found that violations of fiduciary duty are widespread among financial advisors (Dimmock, Gerken, and Graham 2018; Charoenwong, Kwan, and Umar 2019) and the fraud and misconduct have persisted over time in the market of financial advice (Qureshi and Sokobin 2015; Egan, Matvos, and Seru 2019). Other papers suggest that advisors' own misbeliefs (Foerster et al. 2017; Linnainmaa et al. 2020) and limited professional knowledge (Anagol, Cole, and Sarkar 2017) have also prevented them from providing good advice.

Our experimental design allows us to control for the quality of the financial advice, thus abstracting away from supply-side issues like agency problems or advisor competency. The two types of videos we offer represent two polar cases – advice that recommends diversified low-cost index funds and advice that recommends stock-picking actively managed funds. This design enables us to measure whether and how much financial advice moves people's beliefs. The portfolio outcome we evaluate is also restricted to the choice between (hypothetical) index funds and actively managed funds which match in pairs in terms of return and risk, which again shuts off other dimensions of differentiation, so that we can focus on the active-passive trade-off.

On the advisee side, the literature shows that confidence in financial advisers (Bhattacharya et al. 2012; Gurun, Stoffman, and Yonker 2021; Burke and Hung 2021) and financial literacy of the advisees (Bhattacharya et al. 2012; Gaudecker 2015; Chang and Szydlowski 2020) can boost advice-taking, and the reliance on default options can crowd out advice (Reuter and Richardson 2022). Further, because of the existence of conflicts of interest, higher trust can supplement low financial literacy (Georgarakos and Inderst 2014; Gennaioli, Shleifer, and Vishny 2015). Our

findings are consistent with the literature on trust and financial literacy. People with lower financial knowledge scores tend to agree with the advice regardless of which type of advice treatment they are given, suggesting a higher level of trust on average. In contrast, higher-literacy people can more effectively evaluate financial advice and adopt high-quality advice, relying less on trust.

Our paper contributes to the literature that uses experimental design to analyze financial advice. Previously in the literature, both the audit study and the online experiment methodologies have been applied to the analysis of financial advice. In an audit study, Mullainathan, Noeth, and Schoar (2012) show that U.S. financial advisers bias toward active management and cater to clients' pre-existing biases. Similarly, Anagol, Cole, and Sarkar (2017) present evidence of low-quality advice in an audit study of the Indian life insurance market. Bhattacharya et al. (2020) carried out an audit study in Hong Kong which shows women auditors receive worse financial advice. In an online experiment, Agnew et al. (2018) find that financial advisors can exploit clients' trust by mixing up good and bad advice in a multi-stage strategy. Kim, Maurer, and Mitchell (2019) also adopt an online experiment method to examine the relationship between cognitive ability, financial literacy and the demand of advice. In addition, Bhattacharya et al. 2012 run a field experiment in which financial advice was given in a written document. Compared with these methods, a laboratory experiment allows us to exert strict experimental controls like an online experiment, while placing the subjects in a simulated situation closer to reality like an audit study. Our findings highlight the considerable impact of financial advice on people's beliefs about investment strategies – even through an arm's-length setting that imitates a first-time meeting with an advisor or an online advice presentation.

Our paper also relates to the larger body of work on credence goods in non-financial settings. Gennaioli, Shleifer, and Vishny (2015) argue that financial advisors are akin to doctors, whereas Hackethal, Haliassos, and Jappelli (2012) think they are like babysitters. Both analogies stem from the fact that advisees are informationally disadvantaged and unable to fully evaluate the quality of advice even after the financial advisory services are provided to them. Dulleck and Kerschbamer (2006) discuss this general type of information problems in markets for experts' services. In this paper, we find that investors vary in their ability to distinguish good advice from bad advice, and that their perceptions of the quality of the advice eventually influence their judgement in our post-video

survey.

2 Experiment Design and Data Collection

2.1 Subject Recruitment and Setup

We conducted an experiment in which we invited people from the greater Boston area to watch financial advice videos. The experiment was run at the MIT and Harvard experimental labs in order to allow participants more convenient access to different sites. The general setup consists of three parts. First, we elicit people's priors about investment via a pre-video survey. Independent of their prior beliefs, we then randomly assign people to watch two types of videos of financial advice. Lastly, we use a post-video survey to measure people's perceptions of financial advice and any changes in their beliefs about investment strategies.

To attract residents, particularly employees in the greater Boston area, we contacted a number of local employers to advertise our recruiting materials via their internal email lists and blackboards in public areas such as workplace cafeterias. In addition, we circulated recruiting materials on Craigslist, the Harvard Decision Science Lab and the MIT Behavioral Research Lab websites, and school newsletters and emails. The objective of the experiment was described as "to understand how people evaluate different types of financial advice."

We advertised the chance of getting a \$3,000 award in the form of fund portfolios from this experiment to provide a monetary incentive. To participate in this experiment, people must physically come to our research laboratory. Once people show up at the lab, we confirm their IDs and eligibility. This check-in step differentiates our study from online survey experiments. We did not collect names or any personally identifiable information from the participants. Each of them was assigned a randomly generated number for identification purposes throughout the experiment process.

2.2 Financial Advice Videos

The advice videos are central to our experiment design. Through another recruitment process targeting professional actors, we screened and hired two females and two males to perform in our videos as financial advisors. Before each video recording, we provided the actors with a full script to memorize and trained them to act as advisors. They strictly followed the scripts with the help of

a teleprompter and with the natural emotions that advisors would normally present. When writing the scripts, we consulted with several local financial advisors and asked for their suggestions on the language. Our videos are representative of financial advice given in many online investor education programs or robo-advice platforms. The scene and content of the videos are similar to those of a face-to-face meeting when individual investors pay a visit to retail financial advisors.

In each video, there is one professionally-dressed advisor who talks about investment strategies and financial advice in front of a plain white background, framed from chest or shoulder up. We selected names for advisors that are most common for their generation, and asked them to use those names when greeting audiences at the beginning of the videos. We keep all other elements the same across all the videos, including the screen cuts, camera angles, lighting, etc. Each video lasts for approximately 4 to 6 minutes. In order to keep the viewers' attention and pass on messages more effectively in a few minutes, we divided the whole video into several sections. Between each section, there was a 3-second black transition screen with the topic of the next section showing on the screen in white.

We wrote scripts that recommend either a passive or an active investment strategy to the audience, with supporting arguments for the strategy recommended. In the *Passive Video*, the advisor argues that no active fund manager can always beat the market and recommends low-cost well-diversified index funds. The supporting arguments highlight that diversification can help reduce risk exposure to any one stock or sector, and the lower cost of index funds makes a large difference at long time horizon. In the *Active Video*, the advisor emphasizes the importance of outperforming the market benchmark and recommends funds managed by competent portfolio managers with a good track record. The advisor further argues that by paying for the professional managers and market research, actively managed funds can assist investors in identifying stocks and sectors that are most promising for high returns, and timing the market to better seize opportunities.

In the first section of every video, the advisor gives a short self-introduction and mentions their qualification of being an experienced financial advisor. The script of this opening part is the same in all videos, except that the two female advisors use the same female name and the two male advisors use the same male name. The second section provides a general explanation of what index funds and actively managed funds are, and what the average fee per year is like for these two types of

funds. The third section recommends either a passive or active investment strategy. The fourth section supports the strategy recommended with some arguments and a histogram.⁷

After completing the pre-video survey, participants were required to carefully watch one of the videos depending on which treatment group they were randomly assigned to. Immediately before the video starts, we reminded the participants that they would be asked questions about the video. To further motivate the participants and make them feel having skin in the game, we told them that one of the questions will be about a decision they would make for the \$3,000 portfolio which they have a chance of winning as part of the study.

2.3 Pre- and Post-Video Surveys, and Post-Experiment Debrief

Our pre-video survey starts with collecting a standard set of demographic information, including age, gender, marital status, job status, annual income, etc., from the participants. This is not only for us to collect the basic demographic information for analysis, but also similar to what real and robo financial advisors would possibly ask their customers at the in-take. We also asked them to give a self-assessment of financial literacy on a 7-point scale and on a percentile scale.

In order to measure how people think about investment strategies, we asked the subjects to rank seven potential components of investment strategies in the order of importance. This pre-video ranking question is designed to elicit people's prior beliefs on passive versus active investment strategies. The seven components we used in this question are: *Diversification*, *Picking Good Fund Managers*, *Picking Good Stocks*, *Timing the Market*, *Minimizing Risks*, *Minimizing Fees*, and *Selling Funds That Had Bad Performance Last Year*. We construct belief measures from the answers to these questions, which is discussed in the next section.

To understand whether the subjects have knowledge about mutual fund fees, we asked how a 2.5% annual fee for a mutual fund compares to the average fund management fee in the market. 2.5% was higher than the 99th percentile of the net expense ratios at the time of the experiment, thus, people who deem a 2.5% fee as inexpensive either lack financial knowledge or are highly

7. We included additional randomized variations over whether the advisor's compensation is disclosed in the first section and whether the second section is included. All videos have the third and fourth sections. In our analysis, we find that the variations beyond the recommended investment strategy lead to very weak differences in people's perceptions of the advice videos and their beliefs, therefore, we combine those more nuanced treatments to focus on the most important variation which is the recommendation of the active or passive investment strategy. See Appendix A for the full scripts of the videos and Appendix B for a tabulation of all treatment arms.

insensitive to fees. After these belief questions, we ask people eight questions that are intended to test their financial literacy levels. These knowledge questions range from relatively easy ones, for example, about the meaning of owning stock, to harder ones that need some calculations or college-level financial knowledge.

After being treated by the financial advice videos, people filled out a post-video survey. First, we asked them to rate the quality of the advice and the advisor, and report how much they agree with what they just saw. We then gave them the same investment strategy ranking question as that in the pre-video survey, which required ranking the seven components of investment strategies in the order of importance. This question serves to elicit people's post-video belief on passive versus active investments. People were again questioned how a 2.5% annual fee for a mutual fund compares to the average fee in the market. Further, we asked the subjects whether they believe it is possible or impossible to beat the market in the long term.

Finally, the subjects were invited to choose one portfolio from six hypothetical portfolios if they were to invest with their own money. Graphs of historical annual returns of the six portfolios are provided on screen. The six portfolios vary in risks and average returns, with three of them being labeled as actively managed portfolios, and the other three being labeled as index portfolios. People were also informed that if they were selected to receive the \$3,000 award, they would receive it in the fund portfolio which they picked in this question.

After the subjects completed the post-video survey and before they left the lab, we showed them another "debrief" video that was designed to neutralize any potentially misleading information presented by the "advisor". The debrief videos were recorded by the same actors as those in the treatment videos, and had two scripts depending on whether the advice was passive or active. The debrief highlighted the conflicts of interest facing advisors who are employed by fund companies or compensated by commissions, how the agency conflict can lead them to recommend actively managed funds, and that academic research found only limited merit of active management.

3 Measurement and Random Assignment

3.1 Answers to Pre-Video Ranking Question

We extract people’s prior beliefs for passive versus active management from their answers to the pre-video ranking question. The question asked people to rank seven different components of investment strategy in the order of importance. We intentionally picked seven components where some are more related to passive investment, some inclined to active investing, and some in-between or irrelevant. We mix up the components and present them in a random order. This sub-section describes how we construct measures for the prior (pre-video) beliefs. The post-video ranking question is identical to the pre-video ranking question, and the post-video beliefs are assessed in the same way.

We show the summary statistics of answers to the pre-video ranking question on the seven investment strategies in [Table 1](#) Panel A. The ranking answers for each strategy range from the lowest importance 1 to the highest importance 7. The *Diversification* strategy has the highest average rank of 5.07, and the *Selling Funds That Had Bad Performance Last Year* strategy has the lowest average rank of 2.10. The reason could be that many people heard about praises of diversification, possibly from school or financial media, but could not see the value of selling losing positions.⁸

[Table 1 About Here]

3.2 Construction of “Pro-Passive” Score

Assuming that people’s beliefs about investment strategies are revealed through the ranking question, we now use the rankings to construct an ex ante belief score on the passive-active spectrum. Based on academic theory, we expect *Diversification*, *Minimizing Risk*, and *Minimizing Fees* to correlate with passive beliefs; *Picking Good Stocks*, *Picking Good Fund Managers*, and *Timing the Market* to associate with active management; and *Selling Poorly Performed Funds* to be uncorrelated with either. However, investors’ beliefs may not align with this classification, thus, we first examine the revealed correlations among people’s rankings.

8. For example, due to loss aversion ([Tversky and Kahneman 1992](#)).

Table 2 presents the pair-wise correlations between the component rankings, as well as their correlations both with the financial knowledge score (to be explained in the next sub-section), and with the self-ranked financial literacy. Our goal is to identify the belief components that are more inclined toward active or passive investment strategies, which we will refer to as “pro-active” and “pro-passive” beliefs in the rest of this paper.

The rank of *Diversification* has a significant negative relationship with *Picking Good Fund Managers*, *Picking Good Stocks*, *Timing the Market*, and *Selling Poorly Performed Funds*, all of which are representative of the philosophy of active management, suggesting *Diversification* be categorized as a pro-passive belief component. For the same reason, *Minimizing Fees* is a clear indicator for the pro-passive belief, though *Diversification* and *Minimizing Fees* appear to be uncorrelated with each other.

Picking Good Stocks and *Timing the Market* are strongly negatively correlated with both *Diversification* and *Minimizing Fees*, and we count for them as pro-active beliefs. *Picking Good Fund Managers* is potentially a component of pro-active beliefs, but it appears negatively correlated with both passive and active beliefs, and in particular has a strong negative correlation with *Timing the Market*. In the same vein, *Minimizing Risk* and *Selling Poorly Performed Funds* are also irrelevant to people’s beliefs on whether passive or active management is important, because they are ambiguously related to more clearly narrated strategies like *Timing the Market* and *Minimizing Fees*.

Together, Table 2 suggests that the following four components as the most central to people’s beliefs on passive versus active investments, and we use them to construct our main belief score: *Diversification* and *Minimizing Fees* for pro-passive, and *Picking Good Stocks* and *Timing the Market* for pro-active.

[Table 2 About Here]

We define a 4-point classification scheme to measure investment beliefs on the active-passive spectrum. Starting with an initial value of zero, we add 1 if *Diversification* is among the most important three out of the seven components; minus 1 if it is among the least important three components, and repeat this step for the ranking of *Minimizing Fees*. Then, we add 1 if *Picking*

Good Stocks is among the least important three components; minus 1 if it is among the most important three components, and again repeat this step for the ranking of *Timing the Market*. We call the resulting metric the “*Pro-Passive Score*” of a subject. In the end, the largest possible Pro-Passive Score is 4, which indicates that the participant has strong preference for passive management in their pre-video belief. The smallest possible value -4 indicates the opposite extreme that the participant has a strong prior preference for active management.

Figure 1 Panel A plots the distribution of the 4-point Pro-Passive Score. Based on the distribution, we categorize the participants with positive scores as the “*Pro-Passive*” type and those with non-positive points as the “*Pro-Active*” type. In robustness checks, we single out the participants with zero point as the “*Unclear*” belief group, while leaving the positive-scored participants in the Pro-Passive group and negative participants in the Pro-Active group, and the results remain unchanged.

[Figure 1 About Here]

We also create an “*Intensity Score*” of beliefs, which is a more granular measure. The calculation still sets the initial value at zero for each participant. Based on the ranking answers which range from 1 (the least important) to 7 (the most important), we apply the adding and subtracting rules as follows. Given the ranking of *Diversification* being X, we add X-4 to the score. For example, if the person ranks *Diversification* as the second most important component so that X equals 6, we add 2 to the his or her current value of intensity score. We repeat this step with the ranking of *Minimizing Fees*. Next, if the ranking answer to *Picking Good Stocks* is Y, we add 4-Y to the score. For example, if the person ranks *Picking Good Stocks* as the third most important component so that Y equals 5, we add -1 to the current value of intensity score. We repeat this with the ranking of *Timing the Market*. In the end, the largest possible value for intensity score is 10, which means the person is very pro-passive in the pre-video ranking answers. The smallest possible value is -10, which means the person is very pro-active.

Figure 1 Panel B plots the distribution of the *Pro-Passive Intensity Score*, and shows that our classification of the subjects into the two prior types based on the 4-point score discussed above naturally separates the two modes in the distribution of the intensity score.

Since the revealed correlations between the components could be affected by noise in people's beliefs, we consider two alternative ways of categorizing the belief components. The first alternative simply follows the ex ante classification and counts *Diversification*, *Minimizing Fees*, and *Minimizing Risk* as passive components, and *Picking Stocks*, *Timing the Market*, and *Picking Fund Managers* as active components, resulting in a 6-point score. The second alternative considers the fact that *Diversification* tends to be ranked highly by both pro-passive and pro-active investors, and replaces it with *Minimizing Risk* in the 4-point score calculation. We present the robustness of the results using these alternative measures in the Appendix and discuss it in Section 4.

3.3 Financial Knowledge Score

In the pre-video survey, we use eight questions that are designed to test the participant's knowledge on financial investments. Details of each question are shown in Table 3 Panel A. These eight questions are shown to people in a random order in our pre-video survey. If we sort the eight questions by the percentage of right answers in our sample, one question about the meaning of owning stock turns out to be the easiest one, five questions cluster at the medium level, and two questions are the hardest (Table 3 Panel B).

These eight questions were mainly derived from the questions widely used in the existing literature of measuring financial literacy. For example, the "risk diversification" question (Q5) was taken from one of the three questions, which are later known as the "Big Three", piloted in the 2004 Health and Retirement Study (HRS) by Lusardi and Mitchell (2007). The "compound interest" question (Q2) was adapted from interest compounding question from the "Big Three". The "time value of money" question (Q3) is the same as one of the five *Basic Literacy Questions* in van Rooij, Lusardi and Alessie (2007). Three other questions (Q4, Q6, Q8) are from the *Advanced Literacy Questions* in van Rooij, Lusardi, and Alessie (2011). The remaining two questions are relatively new. The "percentage changes" question (Q1) aims to test the numeracy of how percentage changes are calculated, and the "mutual fund fees" question (Q7) is designed to test people's basic knowledge of how annual management fees are charged.

[Table 3 About Here]

In order to check whether our knowledge questions reasonably measure the financial literacy

level (i.e., whether the three-level classification of knowledge questions is reasonable), we test whether participants act consistently given the three-level grouping by difficulties. In Panel C of Table 3, we show the results of consistency checks. First, for people who answered the two hard-level questions (Q4 and Q6) right, they indeed perform better on average (i.e., higher right %) in lower-level questions than the whole sample. For example, the average correct rate is 87.27% for the easiest question about the meaning of owning stock, while the whole sample average is 79.27%. Second, for people who answered at least three out of the five medium-level questions (Q1, Q2, Q3, Q5, and Q7) right, on average they have higher correctness in answering the easy question (Q8) than the whole sample (i.e., 88.58% versus 79.27%). Third, for people who answered the easy question right but got at least three out of the five medium-level questions wrong, they perform much worse (i.e., lower right %) in hard questions than the whole sample average right % (i.e., 30.53% versus 51.63%, 18.95% versus 33.78%).

The correctness rates of some questions in our sample are comparable to those in literature whose surveys were fielded in the U.S. about the same year as ours. For example, the 2012 NFCS⁹ reported that only 28% of their respondents answered the “interest rate and bond price” question (same to our Q6) correctly, close to the 34% in our results. We classify this question into the *Hard* level among our eight questions, while it was also the literacy question that the least people could correctly answer in the 2012 NFCS (FINRA Foundation 2013). Similarly, the “long horizon returns” question has a correct answer rate of 52% in our sample, while in van Rooij, Lusardi, and Alessie (2011)¹⁰ the number is 47.2% for the same question.¹¹

Discrepancies do exist for some questions’ correct rate between our sample and that in van Rooij, Lusardi, and Alessie (2011). For example, the “meaning of owning a stock” question has only a 62.2% correct rate in van Rooij, Lusardi, and Alessie (2011), but more than 79% of our participants answered it right. Nevertheless, the ordinal ranks of the questions’ difficulty level are

9. The 2012 National Financial Capability Study (NFCS) is a survey online from July to October 2012 among a nationally-representative sample of 25,509 American Adults. It is a project of the FINRA Investor Education Foundation (FINRA Foundation). See <https://www.usfinancialcapability.org>.

10. They fielded the questions in the 2005–2006 De Nederlandsche Bank’s Household Survey (DHS). The DHS contains a nationally-representative sample of over 2,000 Dutch households and is an online survey.

11. Notice that there are minor differences in the wording between our Q5 and the “risk diversification question” in van Rooij, Lusardi and Alessie (2007). Our wording is: “Considering a long time period (**for example 30 years**), which asset **has historically generated** the highest return?” The wording in van Rooij, Lusardi, and Alessie (2011) is: “Considering a long time period (**for example 10 or 20 years**), which asset **normally gives** the highest return?”

similar and comparable. The only exception is the “risk diversification” question. In our sample, about 70% of people answered the “risk diversification” question (Q5) correctly. But in van Rooij, Lusardi, and Alessie (2011), the number is only 48.2%.

In sum, our consistency analysis on the answers of financial knowledge questions suggests that, by simply adding up the number of right answers across the eight knowledge questions for each participant, we get a reasonably good measure of the participant’s knowledge level of finance. The minimum of knowledge score is 0, which means the participant gets no knowledge question right; the maximum is 8, which means the participant gives right answers to all of the questions. Summary statistics of the knowledge score can be found in Table 1. Correlation between the knowledge score and the self-ranked financial literacy can be found in Table 2. Figure 1 Panel C plots the distribution of the knowledge score among the Pro-Passive and Pro-Active subjects. Pro-Passive people on average have higher financial knowledge scores, however, the two distributions have substantial overlap and imply that the groups based on prior beliefs are not purely an approximation for financial literacy.

3.4 Random Assignment

Independent of their answers to the pre-video ranking question that captures the prior beliefs on passive versus active management, we randomly assigned people into treatment arms that show the subjects a video where an advisor recommends either a passive or an active investment strategy. The pre- and post-video surveys are the same for all of them. A total of 521 valid responses were obtained from our experiment,¹² in which 265 were assigned to be in the active investment advice group (“*Active Video*”), and 256 in the passive investment advice group (“*Passive Video*”). The video recorded by the two male advisors are watched by 101 and 161 participants respectively; the video recorded by the two female advisors are watched by 97 and 162 participants respectively.

The random assignment of people into the two types of investment advice treatment videos, combined with our classifications of Pro-Passive and Pro-Active prior beliefs, leads to a 2-by-2 division of our whole sample. Table 1 Panel B shows the sizes of the treatment cells. To assess the quality of random assignment, we examine the observed differences between individuals assigned

12. In order to screen out those participants who are not paying attention when answering the questions, we set out screener questions in several positions in the survey and dropped the invalid responses.

to watch the financial advisor video giving the index advice and individuals assigned to watch the financial advisor video giving the active investment advice. Specifically, we test the differences in means, and the results are presented in [Table 4](#). Among the variables we tested, some are directly from the subjects' pre-video answers like gender and age, while the others, like knowledge score and prior belief, are constructed from subjects' answers to multiple pre-video questions. Many of the variables have the number of observations less than 265 for the active investment advice group or less than 256 for the passive investment advice group. These absences of observations are due to some individuals answering "I do not know" or "I do not want to answer" to some of the survey questions. The last column gives the p-value of the t-test for each variable. As shown in the table, no p-value is statistically significant. All co-variates in the table are balanced between the two groups, indicating good randomization of the subjects at least according to their observables.

[[Table 4](#) About Here]

We repeat the balance test on the two treatment groups conditional on people's prior beliefs and present the results in [Tables C.1](#) and [C.2](#) in Appendix C. [Table C.1](#) presents the balance table for the sub-sample of people with Pro-Passive prior belief. We find that, conditional on having Pro-Passive prior belief, there are fewer people who are unemployed, having yearly income under \$35,000, and more people who save at least half of their income and have retirement accounts in the subgroup who watched the passive video. These factors can be inter-related given that some of our experiment participants are full-time students (but at least 25 years old). The self-ranked financial literacy level also has a difference at the 5% significance level. [Table C.2](#) presents the balance table for people with *Pro-Active* prior belief. The only imbalance appears in gender, in which the passive video treated group contains more male than the active video treated group. The difference is significant at the 1% level. Overall, the balance tables assure that the observable characteristics of treatment groups in our experiment are generally similar, which means our randomization works well in retrospect. We also control for some of the co-variates into our regressions later, and our results are robust to including or not including the co-variates as controls.

4 Update of Beliefs

This section presents the main results of the paper which are that people update their beliefs about investment strategies in response to financial advice, and that there is important heterogeneity between the subjects with high and low levels of financial literacy. We start with the results in the full sample, then move on to investigate the roles of financial literacy, as well as the subjects' confidence in their financial knowledge.

4.1 Treatment Effects in Full Sample

Our analysis first estimates how the different treatments affect people's investment beliefs. The outcome variable we are interested in is the changes in people's beliefs about passive versus active management. From the post-video ranking question (identical to the pre-video question), we create a *Posterior Pro-Passive Score*, which again ranges from -4 (strongly pro-active) to +4 (strongly pro-passive), and compute the difference between the posterior and the prior. A positive change means a subject's belief becomes more pro-passive, and vice versa.

[Figure 2](#) offers graphical evidence of the belief shifts resulted from the video treatments. Panel A plots the levels of the posterior beliefs, where each column of sub-figures include two (randomly assigned) treatment groups that have the same prior type. We see significant divergence in their posterior beliefs following the video treatments: Beliefs are moved toward the strategy that is recommended in the corresponding video. The asymmetric effects of the two types of videos are also evident: After the passive video, a large fraction of the subjects are moved to a strong pro-passive belief (a score of 3 or 4), while after the active video, the posterior beliefs are more spread out across different levels.

Panel B of [Figure 2](#) shows the distributions of the *changes* in the pro-passive scores for the four treatment groups. The top row (treatment groups where the advice video is in line with people's prior belief) shows changes largely centered around zero, suggesting that a large fraction of people hold beliefs constant when they receive financial advice that confirms their beliefs. The bottom row suggests that when the advice presented in the video is opposite to the prior belief, both videos have an average effect of pulling beliefs in the direction of the video. Again, the effect of the Passive Video is stronger. On a scale of -4 to +4, the Passive Video shifts beliefs by about 3 points toward

more pro-passive. In contrast, the Active Video shifts subjects' beliefs by 1.5 points toward more pro-active. Both of these magnitudes are significantly different from zero with p-values below 0.01.

[Figure 2 About Here]

We now examine the effects of the treatments on beliefs with regressions. We estimate the effects of the 2-by-2 treatment groups (to be referred to “the treatment groups” for short) using the following OLS regression specification:

$$Y_i = \alpha + \beta \text{Prior Belief \& Video Treatment Dummies}_i + \gamma \text{KnowledgeScore}_i + \delta \text{Controls}_i + \text{AdvisorFE} + \varepsilon_i \quad (1)$$

The dependent variable Y_i stands for the change in the pro-passive belief or the posterior belief. The main independent variables of interest are the dummy variables for the treatment groups from the 2-by-2 division depending on people's prior and the type of advice video played. We include three dummy variables and omit Pro-Active subjects watching the Active Video as the baseline group. In some specifications, we control for the knowledge score of the subject. Other control variables include the subject's gender, the natural logarithm of their age, whether they are unemployed, and whether they have a college degree. We include advisor fixed effects in all regressions, which allows us to single out the effect of the advice content from the characteristics of the advisor. Finally, α is a constant, and ε_i is an error term.

Table 5 presents the regression analysis of the results of Figures 2. Panel A studies the change in the four-point *Pro-Passive Score*, from before to after the video. Before estimating Equation (1), we first estimate a simple model regressing the dependent variable on an indicator (± 1) that represents the direction of the video (+1 for the Passive Video and -1 for the Active Video). The coefficient gives an estimate of the magnitude of the belief shift in the direction of the video. Column 1 suggests that investment beliefs move by 1.34 points on a scale of -4 to +4, in the direction recommended in the video, and this is an average effect without conditioning on an investor's prior.

Columns 2-3 estimate the regression specifications as in Equation (1) without and with including the *Knowledge Score* as a control. The group with Pro-Active prior watching the Active Video is

omitted.¹³ Relative to them, we see that people with the same type of prior but watching the Passive Video move their beliefs by 3.12 points towards pro-passive. The coefficient for the Pro-Passive and Passive Video group is much smaller, suggesting less change in belief when the advice confirms the prior belief; but the coefficient is significant, implying that the pro-passive and pro-active groups are moved slightly more apart from each other after each watching advice in line with their priors. The coefficient on Pro-Passive and Active Video suggests that people with pro-passive priors who were exposed to the active advice are swayed toward more pro-active on average. This effect is smaller than that of the passive advice on the pro-active type and implies that the passive advice is in general more effective at changing beliefs. Column 3 suggests that the financial literacy level of the subject does not have a separate effect on belief updating apart from the main treatment effects.

Because subjects with Pro-Passive and Pro-Active prior beliefs can have different levels of financial knowledge (Figure 1 and Table 2), we want to understand whether the effects of the treatments simply reflect the responses by people with different levels of financial sophistication. Thus, we next add two interaction terms of the indicator for high financial literacy with both types of videos and estimate the following specification:

$$Y_i = \alpha + \beta \text{ Prior Belief \& Video Treatment Dummies}_i + \eta \text{ High Literacy}_i \times \text{ Video Treatment Dummies}_i + \gamma \text{ KnowledgeScore}_i + \delta \text{ Controls} + \text{AdvisorFE} + \varepsilon_i \quad (2)$$

where *High Literacy* is an indicator for whether the *Knowledge Score* is six or above.¹⁴ The estimates of equation (2) are presented in columns 4-5, and column 5 further adds the control variables. The estimated main treatment effects stay similar to before, and the coefficients on the added interaction terms (omitted from the table) are all small and statistically insignificant, suggesting that the main treatment effects are not driven simply by differences in financial literacy.

Complementary to the belief shift studied in Panel A, Panel B of Table 5 uses the level of the

13. We obtain a small and insignificant effect on the treatment group of Pro-Active, watching the Active Video, if the regression includes all four treatment group dummies and suppress the constant term.

14. This classification results in two sub-samples (*High Literacy* and *Low Literacy*) that are almost equal in size. Moreover, 94% of the *High Literacy* subjects answered at least one “hard” question (as indicated in Table 3) correctly, and 48% answered both hard questions correctly in the financial literacy test, so the *High Literacy* dummy seems to correlate with a high degree of financial knowledge.

posterior four-point *Pro-Passive Score* as the dependent variable, and it conveys two main messages. First, both the prior belief and the financial advice matter for the posterior. Financial advice that confirms the pre-existing beliefs leads to the most extreme ex post beliefs, while the beliefs of investors who are converted from the opposite view by financial advice land in the middle. Second, a simple decomposition of the coefficients into the effects of the priors versus those of the advice videos shows that financial advice is of first-order importance in explaining people's posterior beliefs. Consider the Pro-Active investors who are randomized into the two different types of video treatments. The difference between their posterior beliefs is 2.76 points – a divergence entirely driven by the difference in advice. By the same token, among the Pro-Passive subjects, the posterior difference is $4.05 - 1.80 = 2.25$. The average of the two wedges (around 2.5) represents the effect of the Passive Video relative to the Active Video on posteriors. To back out the effect of the priors, we observe that the posterior difference between Pro-Index and Pro-Active subjects who watched the same video is 1.29 points ($4.05 - 2.76$) for the Passive Video and 1.80 for the Active Video, suggesting an average effect of around 1.6. Thus, though people's investment beliefs are inertial, the financial advice that was given in the video appears to have a bigger effect on the post-video beliefs.

[Table 5 About Here]

We show several robustness tests of the results in Appendix C. The motivations for the tests are discussed in Section 3.2. Table C.3 considers an alternative sample that excludes the subjects with unclear prior beliefs whose *Pro-Passive Scores* equal zero. Table C.4 examines belief shifts and posteriors using the 10-point *Intensity Score* of the investment belief. Table C.5 uses the alternative belief score that accounts for three passive components and three active components, and Table C.6 uses the alternative 4-point score that replaces *Diversification* (the most popular belief) with *Minimizing Risk*. The main results of Table 5 remain quantitatively similar and statistically significant in all these robustness tests.

4.2 Role of Financial Literacy

We next evaluate the heterogeneous responses by subjects with different financial literacy. The existing literature has found financial literacy to be complementary to advice-taking. For example, Bhattacharya et al. (2012) and Gaudecker (2015) show that people with lower financial knowledge

are also less likely to seek financial advice. There are two alternative hypotheses. One is that financial literacy can also be a substitute for financial advice, in that people capable of making own financial decisions can be less influenced by advice. The other alternative is that financial literacy may enable people to use advice more efficiently, for example, by better evaluating the quality of the advice or the advisor, or better comprehending the advice (see [Collins 2012](#); [Finke 2013](#), discussed in [Gomes, Haliassos, and Ramadorai 2021](#)).

[Figure 3](#) plots the histograms of belief changes for the sub-samples of participants divided by financial literacy. Panel A contains the *High Literacy* subjects whose knowledge scores are at or above six, and Panel B shows the *Low Literacy* subjects.

The contrast between the bottom two charts in Panel A shows that investors with high literacy have differential responses to the two types of videos, particularly when they hold the opposite pre-existing beliefs from the video. The high-literacy subjects appear to take up the passive advice – which is arguably the better investment advice – but respond little to the active advice. After the Passive Video, those investors who used to lean toward active management shift their beliefs by +2.8 toward more pro-passive (bottom left). The opposite case - of pro-passive people watching the active advice - shows a belief shift of only 0.85 toward more pro-active (bottom right). Moreover, 35% of the subjects in this group do not change their investment belief, as can be seen with the density at zero. Thus, despite their potential do-it-yourself financial ability, the high-literacy subjects are receptive to financial advice, and their financial knowledge appears to help them identify the higher-quality advice.

Turning to the *Low Literacy* subjects in Panel B and again focusing on the bottom row, we see that subjects lacking financial literacy are strongly swayed by both types of financial advice. The mean effects of the index advice and active advice are +3.3 and -2.3, respectively, suggesting that low-literacy investors are open to receive financial advice, which is different from the prior literature’s finding. The low-literacy subjects do not appear to be “stubborn”: They update their beliefs substantially according to the advice, even if the advice is opposite to their pre-existing beliefs. However, the disadvantage of these financially unsophisticated subjects is that they have difficulty identifying good and bad advice.

[Figure 3 About Here]

Turning to the regression analysis in [Table 5](#), we show in columns 6-7 of both panels the treatment effects in sub-samples of high- and low-literacy subjects. The main differences between the two sub-samples are the coefficients on the Pro-Passive, Active Video treatment group. Panel A shows that the Active Video fails to generate a significant effect on the high-literacy people with pro-passive beliefs, however, it substantially changes the belief of the low-literacy people of the same type. Panel B focuses on the posteriors and suggests that the high-literacy pro-passive people still have highly pro-passive beliefs after watching the Active Video. However, among the low-literacy subjects watching the active advice video, the difference in the beliefs between pro-passive and pro-active priors disappears.

4.3 Heterogeneous Strengths of Prior Belief

So far we have analyzed how the average differences in people's priors affect how they update beliefs about investment strategies after receiving advice. Another parameter that is important in Bayesian updating models is the tightness, or strength, of a person's prior belief. Stronger priors predict putting less weight on the financial advice, so the magnitude of updating following advice should be lower. Of course, the strength of the prior is correlated with people's financial literacy. People with more knowledge may also have more clearly formed prior beliefs, and consequently, the subjects may be less open to financial advice. However, there could also be variations in confidence even among people with the same literacy level.

For a measure of people's confidence in their prior belief, we use one question in the pre-video survey that asked subjects to rank themselves based on their financial knowledge. This subjective measure of knowledge can approximate for the subjects' confidence, i.e., all else equal, people who rank themselves higher may be more confident, or firm, in their prior investing views and thus may be less influenced by financial advice.¹⁵

We re-estimate the belief updating result while allowing the treatment effects to vary by the strength of the prior belief, and the results are presented in [Table 6](#). In column 1, we regress the belief shift on the direction of the video (+1 for the Passive Video and -1 for the Active Video)

15. We did not ask people about the strength of their prior directly, since we were concerned that people would not understand what a confidence interval was and it would be too difficult to explain.

and its interaction with the subject's self rank (a number ranking between 0 and 1). The result suggests more confident people update beliefs less according to the financial advice in the video. In column 2, we directly control for the effect of financial literacy on the degree of the updating. As expected, the magnitude of the coefficient on the interaction term with confidence drops and becomes marginally insignificant (p-value 0.13), because of the high correlation between confidence and the true financial literacy.

We then examine the effect of the confidence rank within each group of financial literacy. Column 3 shows that among the subjects with high financial literacy, those with more confident priors update beliefs less in response to the financial advice. Column 4 implies that confidence does not seem to matter among the low-literacy subjects, possibly because these people have some sense of their lack of financial skills. Again, these financially less sophisticated people appear to be broadly open to financial advice.

In columns 5-7, we estimate the heterogeneity along confidence for the finer treatment groups, again with Pro-Active, Active Video as the omitted group, and we interact all group dummies with the self rank measure. The results suggest that the unconfident people are more likely to change their investment strategy ranking in response to the video they see, but the estimates are also noisy. One result that stands out is in column 6, among the high-literacy people with pro-active (potentially biased) beliefs *ex ante*. The passive advice can potentially benefit this group, but after watching the video, only the less confident among this group show a change toward more pro-passive beliefs. In contrast, the low-literacy group show more updating. Therefore, the results suggest that having strong conviction in biased beliefs may prevent people from taking in good advice.

[Table 6 About Here]

5 Perception of Advice

We next ask whether the subjects' priors and the type of the advice affect people's assessments of the quality of the advice or the advisor. The metrics come from the post-video survey, which collected the participants' evaluations of the financial advice. One question asks: "In general, do you agree with what the adviser recommended?" People were required to choose from a 9-point Likert scale for this question, which ranges from 1 (strongly disagree) to 9 (strongly agree). Similarly, we

collected the subjects' opinions on whether the advice was convincing, whether the advisor was likable, and whether they would return to the advisor in the video with their own money.

Table 7 Panel A examines the 9-point scaled answers for how much people agree with the recommendation as the dependent variable. Column 1 regresses the dependent variable only on an indicator for the Passive Video and shows that on average, people agree more with the passive video by 0.64 points on a scale of 1 to 9, or about one third of one standard deviation of the dependent variable. Columns 2-3 estimate equation (1) without and with controlling for the *Knowledge Score*. The results indicate that the Passive Video is strongly preferred by the pro-passive subjects but not disliked by the pro-active subjects, while the Active Video is rated significantly lower by people with pro-passive priors. These again imply that people regard the passive advice as higher quality. The coefficient on *Knowledge Score* in column 3 suggests that, above the effects absorbed by the main treatment groups, people with higher financial literacy tend to have a lower rating of financial advice.

Once we control for the reactions by different financial literacy levels to the two types of videos in columns 3-4 estimating equation (2), the responses appear slightly more symmetric across the two types of subjects: People generally agree less with advice that contradicts their priors (first and third rows), however, the dislike is still much stronger in the pro-passive group watching the active advice. Including additional control variables (column 5) does not change the result, and only age is significantly correlated with agreeing with the advice. The coefficients on *High Literacy* interacted with the video types (coefficients omitted from table) show that people with high financial literacy have significantly lower agreement with the Active Video. However, the low rating by the pro-passive subjects of the active video stays robust even after controlling for the reactions by different levels of literacy.

[Table 7 About Here]

In columns 6-7, we split the sample by high- and low financial literacy. Again we can see that the reactions in columns 2-5 are driven by the high-literacy sub-sample. In contrast, the low-literacy subjects do not demonstrate differentiated responses to the videos across the treatment groups. Thus, it appears that it may be more difficult for the unsophisticated investors to evaluate the quality of

financial advice, and they tend to agree with any advice that is given. This is consistent with the earlier result that these low-literacy subjects also update their beliefs indiscriminately following any type of advice. Panel B examines the subjects' ratings of how convincing the advice is and reveal similar findings as those in Panel A.

Overall, the subjects' perceptions of the quality of the advice suggest that people do not necessarily rate financial advice as lower quality if the advice contradicts their prior beliefs. The high literacy subjects distinguish between good and bad advice and are willing to agree with high-quality advice, even if the advice contradicts their priors. At the same time, they express disagreement if they hold pro-passive beliefs and receive a lower-quality advice recommending active management. The low literacy subjects cannot sufficiently judge the quality of the advice, but our results suggest that they are open to receive advice and do not dislike advice that contradicts their *ex ante* beliefs.

Going beyond the content of the financial advice, we are also interested in the subjects' evaluations of the quality of the financial advisor. [Table 8](#) shows the effects of the treatment groups on whether the subject finds the advisor to be likable (Panel A), and whether they would return to the advisor with their own money (Panel B). Both dependent variables are again on a 9-point Likert scale. Interestingly, none of the estimated treatment effects is significant in Panel A where the dependent variable is the likability of the advisor in the video. Thus, the perceived quality of the financial advisor appears independent of the advice video and its interaction with the subject's prior.¹⁶ There is also no difference between the High- and Low-Literacy sub-samples. Thus, we infer that our subjects can differentiate their evaluation towards the advisor from the evaluation of the advice itself, and even when they perceive a piece of advice as low quality, they do not attribute it to the advisor's personal traits. Our treatment seems to influence the post-video judgement on the advice, but not on the advisor.

Panel B examines whether the subjects would return to the advisor with their own money as an approximation for the subjects' "trust" in the advisor. The results show that trust varies by the prior belief and the advice video in a pattern similar to the treatment effects on agreeing with the

16. We also see no effect when using the subject's rating of the advisor's competency as the dependent variable. Those results are omitted.

advice or finding the advice convincing, and is distinct from liking the advisor. Most of all, the lowest level of trust results from pro-passive subjects watching the active advice video. This result adds to the existing literature that models trust as based on familiarity or personal relationships (e.g., [Gennaioli, Shleifer, and Vishny 2015](#)) by suggesting that trust also depends on the perceived quality of the advice. Another finding from Panel B is that while people with *Pro-Passive* priors find the index advice to be high quality ([Table 7](#)), they are not more likely to return to the advisor who recommends the passive strategy. If generalized, this result implies that recommending passive funds is unlikely to be profitable for financial advisors.

[[Table 8](#) About Here]

6 Robustness with Non-Ranking Based Measures of Beliefs

The analysis on investor beliefs in [Section 4](#) has relied on the 4-point *Pro-Passive Scores* which are constructed based on the participants' rankings of seven investment objectives before and after the video treatment. To make sure that our measures are not biased due to people feeling pressured to change their rankings in an experimental setting, we rely on two alternative questions to assess whether there are true shifts in the investment beliefs.

One question concerns the subject's belief about the average mutual fund fee. Both before and after the video, the subject was required to answer: "How does a 2.5% fee compare to the average mutual fund in the market?", and had to choose between 1 (very cheap) and 7 (very expensive). Investors who answer a high number to this question demonstrate fee sensitivity and can be inferred as more inclined to invest passively. Basic facts about the average mutual fund fees (0.2% for index funds and 1.6% for actively managed funds) were stated in both types of advice videos. The difference is that the Passive Video urges investors to avoid high fees, but the Active Video argues that fees are paid for higher quality of management. In short, both types of videos teach investors that a 2.5% fee is expensive, but we expect this information to be salient to people watching the Passive Video which highlights the negative aspect of high fees, whereas the Active Video justifies fees, thus making them appear less relevant for investor decisions.

[Table 9](#) Panel A estimates the magnitudes of the effects of the videos on fee beliefs. The dependent variable is the change in the fee beliefs from before to after the video treatment. To

increase the power of the tests, we replace “I do not know” answers in the pre-video survey with the neutral answer 4, and include a dummy variable for these subjects. Consistent with our hypothesis of investor learning, the experiment leads all groups to consider a 2.5% fee as more expensive, however, the Passive Video moves people’s beliefs by more. In addition, because the average fee is simply a fact, priors do not appear to matter much in the updating of the belief about fees, and the effects in the groups watching the same type of video are similar. Moreover, financial literacy does not appear to play a major role in people’s updating with respect to fee information.

[Table 9 About Here]

Another question in the post-video survey asked the subject whether they agree with “It is possible to always beat the market” on a scale of 1 (strongly disagree) to 7 (strongly agree). A higher answer reveals a preference for active management. We analyze the subjects’ beliefs on beating the market in Panel B of Table 9. A higher dependent variable means that the subject believes more strongly in beating the market. As expected, Pro-Active investors who watch the Active Video have the strongest beliefs in beating the market among all groups. At the other extreme, Pro-Passive investors who watched the Passive Video consider it least likely to beat the market. Posterior beliefs of the other two groups are similar to each other and closer to the lower end, suggesting that either their prior or the video treatment makes them believe that beating the market is not very likely. However, while this is true on average, it is not the case for the Low Literacy subjects shown in column 7. Though some of them held Pro-Passive beliefs ex ante, they are converted to become believers in beating the market after watching the recommendation for active management. In fact, their posterior becomes almost identical to that of people who initially held Pro-Active beliefs and watched the Active Video. This result is consistent with Gruber 1996 and French 2008 which argue that part of the reason for the continued popularity of actively managed funds may be the existence of a clientele who are influenced by financial advisors or marketing materials to believe in stock-picking.

7 Portfolio Choice

Last but not least, we consider the subjects' portfolio choices in the incentivized portfolio choice question. In the post-video questionnaire, we asked people to choose one portfolio from six hypothetical portfolios as if they were to invest with their own money. We also told them that the \$3,000 prize which they had a chance of winning as part of the study would be paid as money invested in the portfolio of their choice. We then presented one graph of historical annual returns for each portfolio, with the portfolio's average return over the years annotated on the graph. Three of the portfolios were labeled as actively managed portfolios, and the other three were labeled as index portfolios. These hypothetical portfolios showed different risk-return trades and were created in such a way that each index portfolio has the same average historical returns as one actively managed portfolio after fees and expenses.

Figure 4 presents the subjects' answers to this portfolio choice question. Overall, people's choices appear in line with the posterior beliefs which reflect the effects of both prior beliefs and the financial advice. The likelihood of choosing an actively managed fund is higher for those with Pro-Active priors than for those with Pro-Passive priors (70% vs. 49% among those who watched the active advice, and 94% vs. 81% among those who watched the passive advice). The effects of the videos again prove stronger than those of the priors, and the Passive Video increases the likelihood of choosing an index fund by approximately 50% relative to the Active Video does (the raw probabilities are 81% vs. 25% for pro-active priors, and 94% vs. 49% for pro-passive priors). Another interesting observation is that though the combination of Pro-Active prior belief and the Active Video leads to the most strong pro-active belief, in fact, a quarter of the subjects with this combination end up choosing an index fund. This may imply some disconnection between beliefs and actions or some very low level of financial literacy.

[Figure 4 About Here]

Figure 5 breaks down the fund choice statistics by the levels of financial literacy. The main patterns of Figure 4 remain, but we also find that in the treatment groups where the advice and the prior belief are conflicted, the High Literacy people are more likely to choose an index fund than

the Low Literacy group. This result again suggests that financial literacy leads to more adoption of high-quality advice and/or less influence by low-quality advice.

[Figure 5 About Here]

Table 10 estimates the effects of the treatment groups on the likelihood of a subject selecting an index fund after the video treatment in a linear probability model, and the dependent variable equals one (zero) if the subject chooses an index fund (actively managed fund).¹⁷ The subjects who replied “Do not want to answer” are dropped from this regression analysis. The ordering of the treatment effects resembles that in Table 5 Panel B, confirming portfolio choices are largely consistent with the directions and strengths of people’s posterior beliefs, but we also note that priors contribute even less to portfolio choices than they do to posterior beliefs. The advice videos affect fund choices greatly: the likelihood of choosing an index fund when watching the Passive Video relative to the Active Video is 58% higher for Pro-Active subjects, and 47% (71%-24%) higher for Pro-Passive subjects. In contrast, conditional on the type of advice video, priors matter to a lesser degree (the differences are 24% and 71%-58%=13%, respectively for the Active video and the Passive Video). We further confirm that financially sophisticated subjects are strongly influenced by the passive advice: among them, the portfolio choices by those with different priors become indistinguishable from each other after the Passive Video (column 6). This pattern is reversed in column 7, which shows that for subjects with lower financial literacy, it is the Active Video that dominates the effect of the priors.

[Table 10 About Here]

8 Conclusion

Financial advice can potentially improve the welfare of investors who are incapable of making sound financial decisions on their own. The literature has made much progress on factors affecting the supply of financial advice, but demand-side questions such as how people process advice are still relatively under-studied.

17. The results remain similar with a Probit model.

This paper studies the demand side of financial advice in a randomized lab experiment. We focus on the financial advice that recommends either an active or a passive approach to investment. The experiment elicits people's prior beliefs and randomizes the subjects into treatment groups to watch pre-recorded financial advice videos that either confirm or contradict their priors on the preferred investment strategy. We show the effects of the treatment on the changes in people's beliefs, perceptions of the financial advice, and incentivized portfolio choices.

The first takeaway of our study is simply that people appear receptive to financial advice and allow advice to influence their investment beliefs. We find no evidence that people discard advice simply because it contradicts their prior beliefs. More specifically, a large fraction of subjects in our study appear open to the textbook advice of holding passive funds, diversification and fee minimization, despite these concepts being potentially counter-intuitive. Additionally, many are unconvinced by the popular ideas of timing the market or beating benchmarks. We do acknowledge, however, that the subjects we recruited appear to have higher average financial literacy than that of the whole population.

Another key finding of our paper is that high- and low-literacy people have different ways of processing financial advice. The financially sophisticated investors appear to first evaluate the quality of advice, and update beliefs only if they deem the advice to be high quality. Due to their ability at assessing the advice, it is difficult to sell them low quality advice.

The unsophisticated investors, on the contrary, do not seem capable of evaluating the quality of the advice. They update beliefs strongly according to any advice that is given, thus, they are likely to be steered into perhaps unsuitable or lower quality financial products. Thus, one policy implication of our paper calls for the protection of these unsophisticated investors by improving the quality of financial advice that is directly accessible to them.

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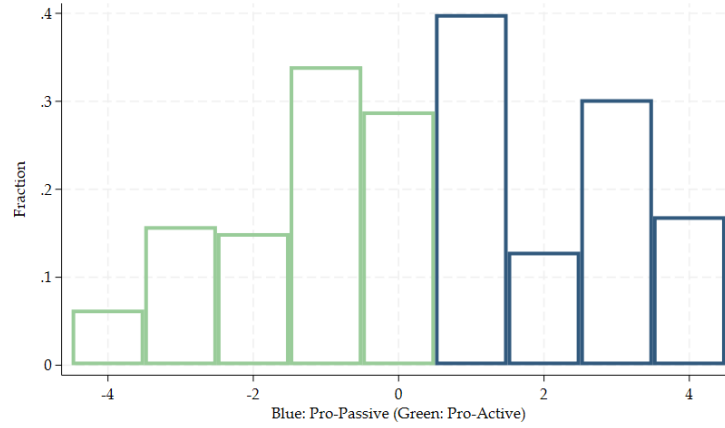
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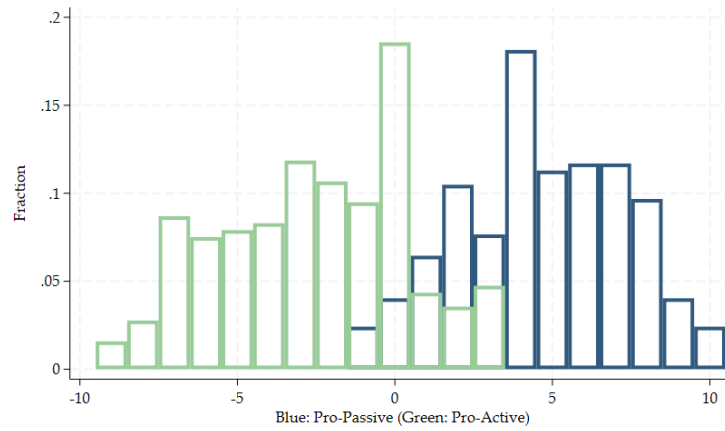
Figure 1: **Distribution of Prior Beliefs and Financial Literacy**

Panel (a) plots the distribution of the pre-video *Pro-Passive 4-Point Score* ranging from -4 to 4. Panel (b) plots the distribution of the pre-video *Pro-Passive Intensity Score*, a more granular score ranging from -10 to 10. Calculations of the Pro-Passive scores are presented in Section 3.2. Panel (c) plots the distribution of the *Knowledge Score* defined in Section 3.3. Blue represents subjects classified as “pro-passive”. Green represents subjects classified as “pro-active”.

(a) *Pro-Passive 4-Point Score*



(b) *Pro-Passive Intensity Score*



(c) *Knowledge Score*

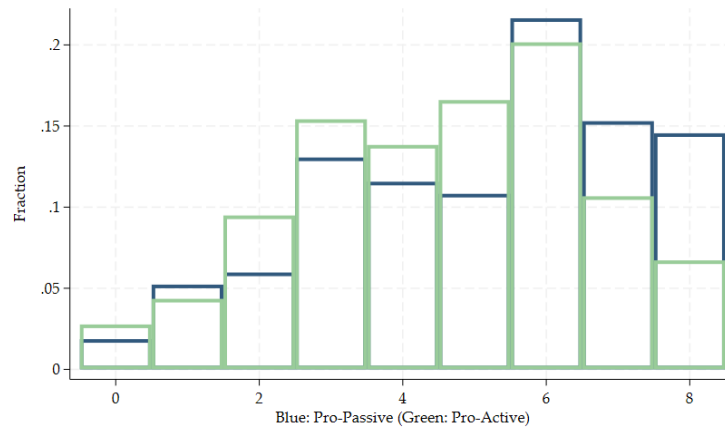
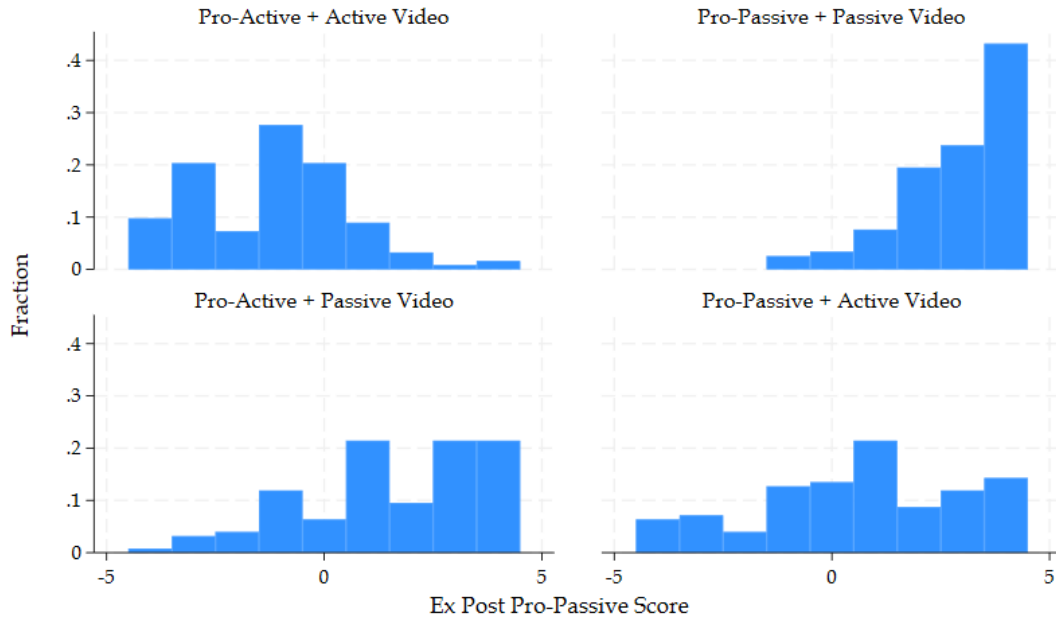


Figure 2: **Posterior Beliefs and Changes in Beliefs about Investment Strategy**

Panel A plots the distributions of the post-video *Pro-Passive Scores* for the two-by-two treatment groups. Panel B plots the changes in the *Pro-Passive Scores* from before to after the video treatment. The posterior scores range from -4 (strongly pro-active) to +4 (strongly pro-passive). The changes range from -8 to +8.

(a) Posterior Pro-Passive Score



(b) Change in Pro-Passive Score

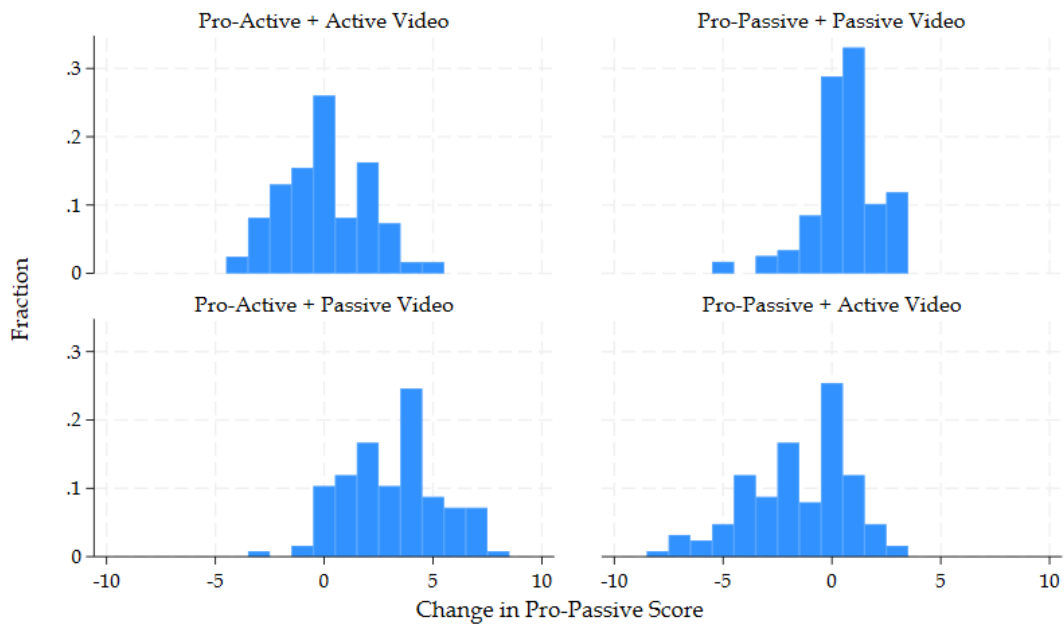
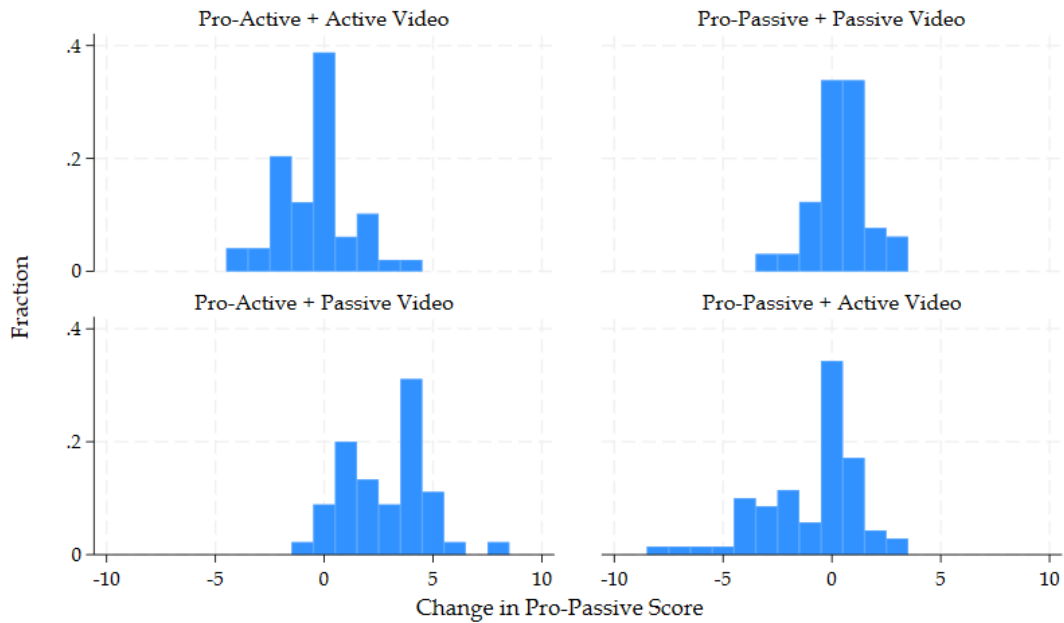


Figure 3: **Changes in Beliefs about Investment Strategy by Financial Literacy**

Panel A plots distributions of the changes in the *Pro-Passive Scores* from before to after the video treatment for the two-by-two treatment groups for the sub-sample of high-literacy subjects whose knowledge score is 6 or above out of 8. Panel B plots the changes for the sub-sample of low-literacy subjects whose knowledge score is below 6. The changes of beliefs range from -8 to +8.

(a) High Literacy Sub-Sample



(b) Low Literacy Sub-Sample

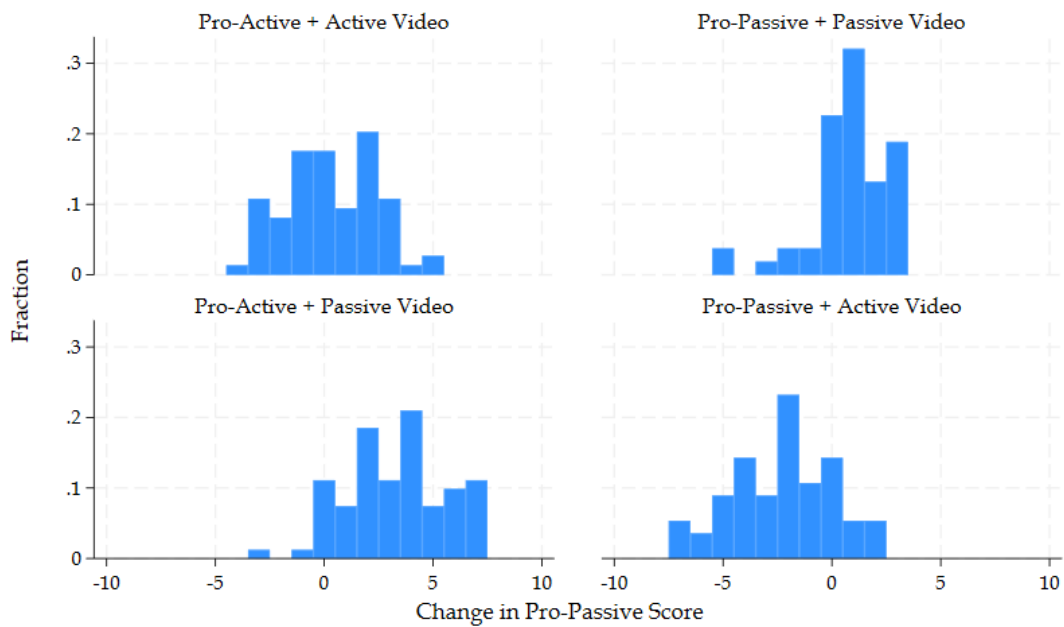


Figure 4: **Choice of Fund: Full Sample**

This figure shows by the four treatment groups the fractions of subjects choosing an index fund, an actively managed fund, or answering “Do not want to answer” in the post-video portfolio choice question.

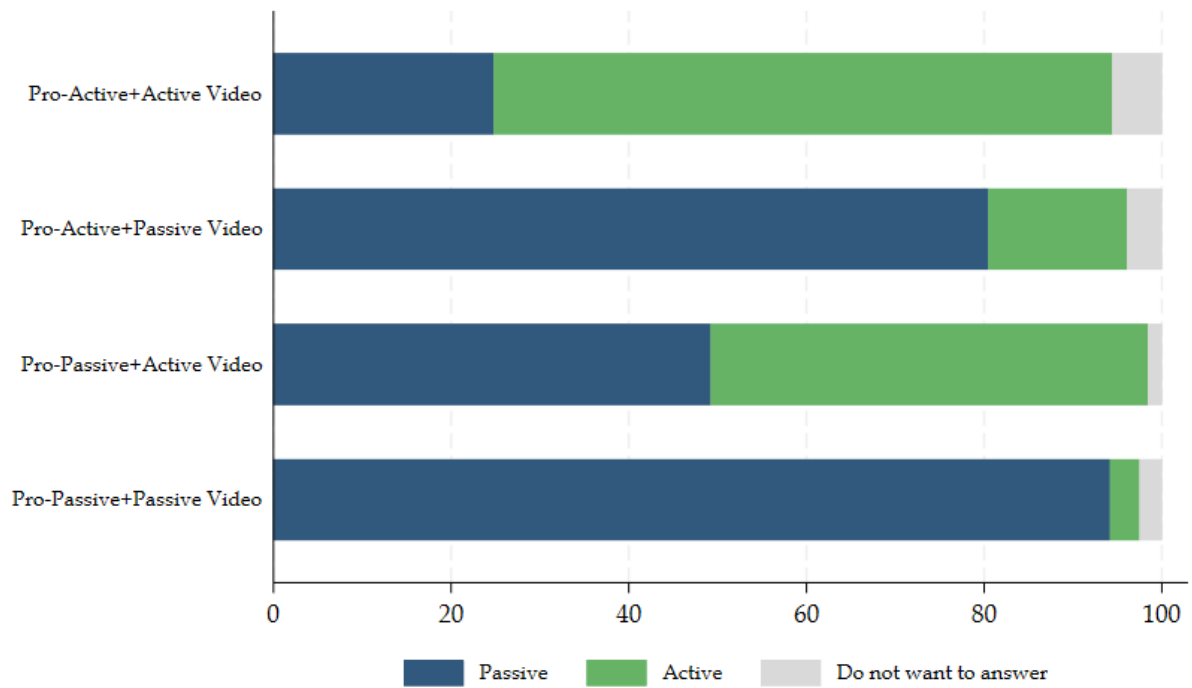
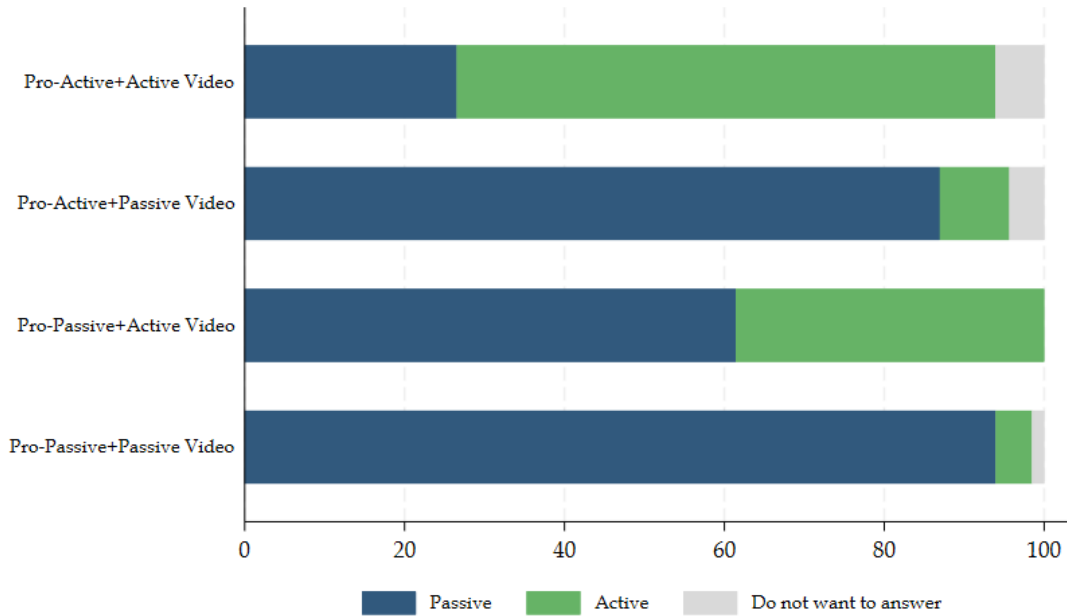


Figure 5: Choice of Fund: by Financial Literacy

Panels (a) and (b) show in sub-samples of high- and low financial literacy by the four treatment groups the fractions of subjects choosing an index fund, an actively managed fund, or answering “Do not want to answer” in the portfolio choice question post-video. The high-literacy sub-sample contains subjects who correctly answered at least 6 of the financial knowledge questions. The low-literacy sub-sample contains those who answered 5 or fewer questions correctly.

(a) High Literacy Sub-Sample



(b) Low Literacy Sub-Sample

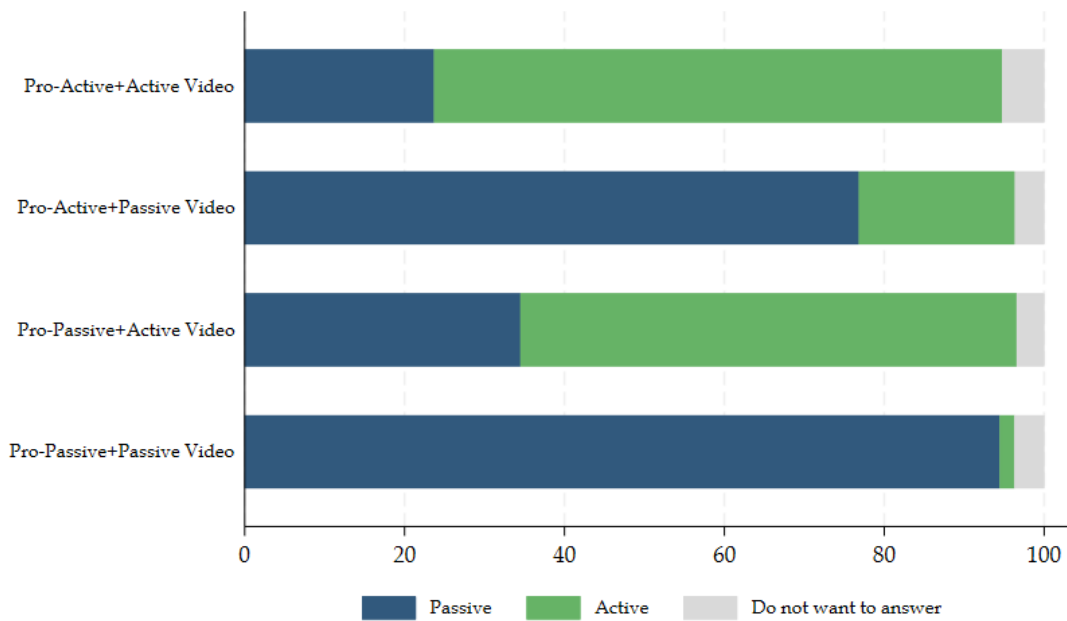


Table 1: Descriptive Statistics

Panel A reports the summary statistics of answers to the pre-video ranking question on investment strategies. Subjects were asked to rank the seven (randomly ordered) potential components of an investment strategy in the order of importance. 1 indicates the least important, and 7 indicates the most important. Knowledge score is the number of correct answers out of the 8 financial literacy questions. Self rank of financial literacy is a subject's rank of their knowledge about investment strategies as a percentile among individual investors in the U.S.. The post-video scoring questions refer to the rating questions about the quality of the advice and the advisor. Panel B reports the number of subjects in each treatment group.

Panel A: Summary Statistics	N	mean	s.d.	min	p25	p50	p75	max
<i>pre-video ranking questions on investment strategies</i>								
Diversification?	501	5.07	1.84	1	4	5	7	7
Picking Good Stocks?	501	4.81	1.70	1	4	5	6	7
Picking Good Fund Managers?	501	4.35	1.89	1	3	4	6	7
Minimizing Risk?	501	4.33	1.77	1	3	4	6	7
Minimizing Fees?	501	4.05	1.84	1	2	4	6	7
Timing the Market?	501	3.29	1.84	1	2	3	5	7
Selling Poorly Performed Funds?	501	2.10	1.45	1	1	2	3	7
<i>pre-video knowledge score based on financial literacy questions</i>								
Knowledge Score	521	4.84	2.10	0	3	5	6	8
<i>pre-video self-ranked financial literacy in percentile rank</i>								
Self-Rank of Financial Literacy	449	0.45	0.24	0	0.25	0.45	0.62	0.98
<i>post-video scoring questions</i>								
Agree with Recommendation?	496	6.45	1.71	1	5	7	7	9
Advice Convincing?	496	6.46	1.78	1	5	7	7	9
Advisor Likeable?	496	6.60	1.65	1	6	7	8	9
Advisor Competent?	496	6.92	1.46	1	6	7	8	9
Advisor Convincing?	496	6.45	1.75	1	5	7	7	9
Will Return?	496	5.47	1.95	1	4	5	7	9
Panel B: Sample Size in Treatment Cells								
		Total		Passive Video		Active Video		
Pro-Passive Prior		248		120		128		
Pro-Active Prior		253		128		125		

Table 2: Pearson Correlations

This table shows the Pearson correlation coefficients between the knowledge score, the self-rank of financial literacy, and the pre-video rankings of components of investment strategies. p-values are reported in parentheses.

	Knowledge Score	Self-Rank of Literacy	Diversification	Picking Good Stocks	Picking Good Fund Managers	Minimizing Risk	Minimizing Fees	Timing the Market
Knowledge Score	1.000							
Self-Rank of Literacy	0.436 (0.000)	1.000						
Diversification	0.340 (0.000)	0.189 (0.000)	1.000					
Picking Good Stocks	-0.069 (0.122)	-0.025 (0.605)	-0.288 (0.000)	1.000				
Picking Good Fund Managers	0.079 (0.077)	-0.032 (0.503)	-0.105 (0.018)	-0.084 (0.060)	1.000			
Minimizing Risk	-0.087 (0.051)	-0.024 (0.616)	-0.200 (0.000)	-0.247 (0.000)	-0.232 (0.000)	1.000		
Minimizing Fees	0.040 (0.375)	0.039 (0.423)	-0.064 (0.156)	-0.335 (0.000)	-0.265 (0.000)	0.081 (0.071)	1.000	
Timing the Market	-0.108 (0.016)	-0.081 (0.091)	-0.198 (0.000)	0.107 (0.017)	-0.199 (0.000)	-0.283 (0.000)	-0.370 (0.000)	1.000
Selling Poorly Performed Funds	-0.261 (0.000)	-0.087 (0.069)	-0.220 (0.000)	-0.106 (0.017)	-0.199 (0.000)	-0.117 (0.009)	-0.081 (0.072)	-0.072 (0.108)

Table 3: Knowledge Questions Consistency

Panel A: Knowledge Questions	
Q1:	Imagine you invested \$1,000 in a stock two years ago. The stock's price declined 40% the first year and rose 40% the next year. As a result, you have: Lost money / Made money / Just broken even / Do not know / Do not want to answer.
Q2:	Let's say you have 200 dollars in a savings account. The account earns 10 percent interest per year. How much would you have in the account at the end of two years? \$210 / \$220 / \$240 / \$242 / \$264 / Do not know / Do not want to answer.
Q3:	Assume a friend inherits \$10,000 today and his sibling inherits \$10,000 3 years from now. Who is richer because of the inheritance? My friend / His sibling / They are equally rich / Do not know / Do not want to answer.
Q4:	Considering a long time period (for example 30 years), which asset has historically generated the highest return? Savings accounts / Bonds / Stocks / Do not know / Do not want to answer.
Q5:	Do you think that the following statement is true or false? "Buying a single company stock usually provides a safer return than a stock mutual fund." True / False / Do not know / Do not want to answer.
Q6:	If the interest rate rises, what should happen to bond prices? They should Rise / Fall / Stay the same / None of the above / Do not know / Do not want to answer.
Q7:	If a mutual fund charges management fees of 2% per year this means that: As an investor you receive only 98% of the returns of the fund every year / 2% of the current value of your investment in the fund is paid in management fees every year / Do not know / Do not want to answer.
Q8:	Which of the following statements is correct? If somebody buys the stock of firm B in the stock market: He owns a part of firm B / He has lent money to firm B / He is liable for firm B's debts / None of the above / Do not know / Do not want to answer.

Panel B: Summary Statistics of the Correctness of Knowledge Questions									
	N	mean	s.d.	min	p25	p50	p75	max	Level
Q1 (percentage changes)	521	0.64	0.48	0	0	1	1	1	Medium
Q2 (compound interest)	521	0.61	0.49	0	0	1	1	1	Medium
Q3 (time value of money)	521	0.64	0.48	0	0	1	1	1	Medium
Q4 (long horizon returns)	521	0.52	0.50	0	0	1	1	1	Hard
Q5 (risk diversification)	521	0.70	0.46	0	0	1	1	1	Medium
Q6 (interest rate and bond price)	521	0.34	0.47	0	0	0	1	1	Hard
Q7 (mutual fund fees)	521	0.60	0.49	0	0	1	1	1	Medium
Q8 (meaning of owning stocks)	521	0.79	0.41	0	1	1	1	1	Easy

Panel C: Consistency			
	Question Level	Sub-sample right %	Whole sample right %
<i>For people who answered the two hard questions right</i>			
Q8 (meaning of owning stocks)	Easy	87.27%	79.27%
Q5 (risk diversification)	Medium	82.61%	70.44%
Q7 (mutual fund fees)	Medium	65.84%	59.50%
Q1 (percentage changes)	Medium	75.16%	64.49%
Q2 (compound interest)	Medium	69.57%	61.04%
Q3 (time value of money)	Medium	71.43%	64.30%
<i>For people who answered at least three of the medium level questions right</i>			
Q8 (meaning of owning stocks)	Easy	88.58%	79.27%
<i>For people who answered the easy questions right but at least three medium level questions wrong</i>			
Q4 (long horizon returns)	Hard	30.53%	51.63%
Q6 (interest rate and bond price)	Hard	18.95%	33.78%

Table 4: Balance Table

This table reports the results of balance tests on subject characteristics and demographics between the groups watching the active and passive videos. p-values are from two-sample t-tests on the differences of mean values between the active and passive video treatment groups.

Variable	Active Video		Passive Video		P-value Act.-Pas.
	N	Mean/SE	N	Mean/SE	
Gender (1=Male)	265	0.51 (0.03)	256	0.56 (0.03)	0.23
Age	264	38.53 (0.74)	256	39.91 (0.79)	0.20
Marital Status (1=Married)	265	0.26 (0.03)	256	0.30 (0.03)	0.35
Country of Birth (1=US)	259	0.83 (0.02)	249	0.85 (0.02)	0.59
Citizenship (1=US)	261	0.92 (0.02)	251	0.94 (0.01)	0.27
Have a Full-time Job	265	0.44 (0.03)	255	0.45 (0.03)	0.90
Unemployed	265	0.09 (0.02)	255	0.06 (0.01)	0.22
Income under 35k	255	0.42 (0.03)	240	0.42 (0.03)	0.91
Save at least 50% of Income	260	0.02 (0.01)	252	0.03 (0.01)	0.74
Have Retirement Account	265	0.52 (0.03)	256	0.59 (0.03)	0.11
Invest in Stocks	265	0.32 (0.03)	256	0.30 (0.03)	0.62
College Degree	265	0.81 (0.02)	256	0.82 (0.02)	0.79
Self-assessed Literacy Level	264	3.76 (0.10)	256	3.72 (0.09)	0.78
Self-ranked Literacy Level	228	45.64 (1.57)	221	43.44 (1.59)	0.33
Willingness to take Risk	262	4.06 (0.09)	254	4.02 (0.09)	0.73
Knowledge Score (0-8)	265	4.82 (0.13)	256	4.87 (0.13)	0.78
Trust Financial Institutions	263	3.76 (0.09)	256	3.63 (0.10)	0.34
Trust People	265	3.53 (0.10)	256	3.51 (0.10)	0.89
Prior Belief (1=Pro-Active Prior)	253	0.49 (0.03)	248	0.52 (0.03)	0.62

Table 5: Belief Shifts and Post-Video Investment Belief

This table shows the effects of the treatments on changes in beliefs and posterior beliefs. The dependent variable in Panel A is the change in a subject's four-point *Pro-Passive Score* from before to after the video treatment. The dependent variable in Panel B is the subject's post-video *Pro-Passive Score*. *Video Direction* equals 1 for the passive advice video and -1 for the active advice video. *Pro-Active* equals 1 if the subject's pre-video four-point score was less than or equal to zero. *Pro-Passive* equals 1 if the subject's pre-video four-point score was greater than zero. *Passive Video (Active Video)* indicates if the subject watched the video recommending the passive (active) strategy. *Knowledge Score* is the total number of right answers to the pre-video financial knowledge questions. *High Literacy* equals 1 if the subject correctly answered at least 6 of the financial knowledge questions and 0 if they answered 5 or fewer questions correctly. Control variables, whose coefficients are omitted, include gender, age, unemployment, and college education. Robust standard errors are reported in parentheses. Coefficients significant at the 10%, 5%, and 1% levels are marked with *, **, and ***, respectively.

	(1)	(2)	(3)	(4)	(5)	(6) High Lit	(7) Low Lit
Full Sample							
Panel A: <i>Change in Pro-Passive Score</i>							
<i>Video Direction</i>	1.341*** (0.104)						
<i>Pro-Active, Passive Video</i>		3.122*** (0.262)	3.121*** (0.262)	3.105*** (0.261)	3.429*** (0.308)	3.178*** (0.376)	3.030*** (0.352)
<i>Pro-Passive, Passive Video</i>		0.553** (0.229)	0.568** (0.232)	0.575** (0.232)	0.982*** (0.308)	0.818*** (0.286)	0.566 (0.345)
<i>Pro-Passive, Active Video</i>		-1.587*** (0.278)	-1.575*** (0.279)	-1.539*** (0.276)	-1.608*** (0.277)	-0.574 (0.370)	-2.570*** (0.396)
<i>Knowledge Score</i>			-0.019 (0.044)	0.007 (0.047)	0.007 (0.084)		
<i>Constant</i>	0.559*** (0.104)	0.021 (0.178)	0.110 (0.276)	-1.123 (1.200)	-1.380 (1.207)	-0.397* (0.240)	0.275 (0.245)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	493	493	493	491	491	229	264
R-squared	0.255	0.415	0.415	0.428	0.434	0.372	0.475
Panel B: <i>Posterior Pro-Passive Score</i>							
<i>Video Direction</i>	1.235*** (0.093)						
<i>Pro-Active, Passive Video</i>		2.755*** (0.241)	2.757*** (0.244)	2.783*** (0.244)	3.061*** (0.275)	2.977*** (0.403)	2.569*** (0.303)
<i>Pro-Passive, Passive Video</i>		4.045*** (0.199)	4.001*** (0.207)	3.957*** (0.213)	4.301*** (0.273)	4.444*** (0.296)	3.792*** (0.276)
<i>Pro-Passive, Active Video</i>		1.797*** (0.263)	1.764*** (0.264)	1.761*** (0.265)	1.697*** (0.269)	2.925*** (0.370)	0.573 (0.363)
<i>Knowledge Score</i>			0.058 (0.044)	0.062 (0.046)	0.042 (0.083)		
<i>Constant</i>	0.976*** (0.093)	-1.168*** (0.159)	-1.435*** (0.254)	-3.236*** (1.115)	-3.387*** (1.116)	-1.553*** (0.255)	-0.902*** (0.198)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	493	493	493	491	491	229	264
R-squared	0.271	0.377	0.379	0.384	0.389	0.451	0.381

Table 6: Strengths of Priors and Belief Shifts

This table estimates how the effects of the treatments vary by different levels of self-ranked financial literacy, both in the full sample and in sub-samples of high- and low actual financial literacy. The dependent variable is the change in a subject's four-point *Pro-Passive Score* from before to after the video treatment. *Video Direction* equals 1 for the passive advice video and -1 for the active advice video. *Self Rank* is the subject's self-ranked percentile of financial literacy and ranges from 0 to 1. *Pro-Active* equals 1 if the subject's pre-video four-point score was less than or equal to zero. *Pro-Passive* equals 1 if the subject's pre-video four-point score was greater than zero. *Passive Video (Active Video)* indicates if the subject watched the video recommending the passive (active) strategy. The high literacy sub-sample includes subjects who correctly answered at least 6 of the financial knowledge questions. The low literacy sub-sample includes those who answered 5 or fewer questions correctly. Robust standard errors are reported in parentheses. Coefficients significant at the 10%, 5%, and 1% levels are marked with *, **, and ***, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>Change in Pro-Passive Score</i>						
	Full Sample	High Lit	Low Lit	Full Sample	High Lit	Low Lit	
<i>Video Direction</i>	1.800*** (0.231)	1.821*** (0.233)	2.130*** (0.443)	1.569*** (0.276)			
<i>Video Direction</i> × <i>Self Rank</i>	-1.047** (0.442)	-0.784 (0.516)	-1.882** (0.731)	-0.058 (0.700)			
<i>Video Direction</i> × <i>High Lit</i>		-0.293 (0.251)					
<i>Pro-Active, Passive Video</i>					3.796*** (0.545)	5.859*** (0.957)	3.221*** (0.637)
<i>Pro-Active, Passive Video</i> × <i>Self Rank</i>					-1.685 (1.108)	-5.203*** (1.712)	-0.835 (1.461)
<i>Pro-Passive, Passive Video</i>					1.431*** (0.461)	1.771** (0.879)	1.757*** (0.506)
<i>Pro-Passive, Passive Video</i> × <i>Self Rank</i>					-1.715* (0.894)	-1.775 (1.521)	-3.264** (1.381)
<i>Pro-Passive, Active Video</i>					-2.508*** (0.715)	-0.934 (1.373)	-2.398*** (0.877)
<i>Pro-Passive, Active Video</i> × <i>Self Rank</i>					1.836 (1.335)	0.249 (2.267)	-0.371 (1.973)
<i>Self Rank</i>	-0.632 (0.446)	-0.294 (0.519)	-0.213 (0.733)	-0.283 (0.711)	0.485 (0.705)	2.053* (1.171)	0.719 (0.847)
<i>High Literacy</i>		-0.374 (0.251)					
<i>Constant</i>	0.869*** (0.233)	0.895*** (0.235)	0.466 (0.443)	0.898*** (0.281)	-0.187 (0.393)	-1.260* (0.727)	-0.115 (0.456)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	431	431	205	226	431	205	226
R-squared	0.273	0.280	0.276	0.301	0.424	0.411	0.465

Table 7: Assessments of Advice

The dependent variable in Panel A is how much the subject agrees with the recommendation, and in Panel B is the rating of how convincing the advice is. *Pro-Active* equals 1 if the subject's pre-video four-point score was less than or equal to zero, and 0 otherwise. *Pro-Passive* equals 1 if the subject's pre-video four-point score was greater than zero, and 0 otherwise. *Passive Video (Active Video)* indicates if the subject watched the video recommending the passive (active) strategy. *Knowledge Score* is the total number of right answers to the pre-video financial knowledge questions. *High Literacy* equals 1 if the subject correctly answered at least 6 of the financial knowledge questions and 0 if they answered 5 or fewer questions correctly. Control variables, whose coefficients are omitted, include gender, age, unemployment, and college education. Robust standard errors are reported in parentheses. Coefficients significant at the 10%, 5%, and 1% levels are marked with *, **, and ***, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Full Sample					High Literacy	Low Literacy
Panel A:							
<i>Agree with Recommendation</i>							
<i>9-Point Likert scale: 1(Strongly Disagree) ~ 9(Strongly Agree)</i>							
<i>Passive Video</i>	0.639*** (0.149)						
<i>Pro-Active, Passive Video</i>		-0.003 (0.198)	-0.004 (0.197)	-0.251 (0.217)	-0.281 (0.216)	-0.177 (0.346)	0.062 (0.231)
<i>Pro-Passive, Passive Video</i>		0.550*** (0.194)	0.632*** (0.199)	0.340 (0.219)	0.312 (0.221)	0.898*** (0.331)	0.320 (0.242)
<i>Pro-Passive, Active Video</i>		-0.738*** (0.224)	-0.674*** (0.219)	-0.608*** (0.219)	-0.615*** (0.223)	-1.075*** (0.371)	-0.231 (0.253)
<i>Knowledge Score</i>			-0.106*** (0.038)	-0.028 (0.062)	-0.036 (0.066)		
<i>Constant</i>	6.122*** (0.115)	6.496*** (0.145)	6.980*** (0.216)	6.900*** (0.268)	4.982*** (0.890)	6.282*** (0.267)	6.629*** (0.161)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	500	500	500	500	498	231	269
R-squared	0.051	0.087	0.103	0.115	0.130	0.171	0.046
Panel B:							
<i>Advice Convincing</i>							
<i>9-Point Likert scale: 1(Not at All) ~ 9(Extremely)</i>							
<i>Passive Video</i>	0.653*** (0.156)						
<i>Pro-Active, Passive Video</i>		0.163 (0.223)	0.158 (0.217)	-0.008 (0.237)	0.035 (0.237)	-0.050 (0.383)	0.251 (0.261)
<i>Pro-Passive, Passive Video</i>		0.526** (0.215)	0.651*** (0.217)	0.458* (0.246)	0.439* (0.248)	0.871** (0.353)	0.346 (0.272)
<i>Pro-Passive, Active Video</i>		-0.621*** (0.239)	-0.523** (0.234)	-0.475** (0.233)	-0.438* (0.236)	-0.804** (0.389)	-0.253 (0.286)
<i>Knowledge Score</i>			-0.162*** (0.040)	-0.089 (0.067)	-0.079 (0.071)		
<i>Constant</i>	6.128*** (0.121)	6.442*** (0.169)	7.183*** (0.240)	7.074*** (0.289)	4.624*** (0.945)	6.087*** (0.288)	6.676*** (0.205)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	501	501	501	501	499	231	270
R-squared	0.037	0.058	0.092	0.099	0.116	0.113	0.028

Table 8: Assessments of Financial Advisor

The dependent variable in Panel A is the rating of how likable the advisor is, and in Panel B is how likely the subject will return to the advisor in the video. *Pro-Active* equals 1 if the subject's pre-video four-point score was less than or equal to zero, and 0 otherwise. *Pro-Passive* equals 1 if the subject's pre-video four-point score was greater than zero, and 0 otherwise. *Passive Video (Active Video)* indicates if the subject watched the video recommending the passive (active) strategy. *Knowledge Score* is the total number of right answers to the pre-video financial knowledge questions. *High Literacy* equals 1 if the subject correctly answered at least 6 of the financial knowledge questions and 0 if they answered 5 or fewer questions correctly. Control variables, whose coefficients are omitted, include gender, age, unemployment, and college education. Robust standard errors are reported in parentheses. Coefficients significant at the 10%, 5%, and 1% levels are marked with *, **, and ***, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Full Sample					High Literacy	Low Literacy
Panel A:							
<i>Advisor Likable</i>							
<i>9-Point Likert scale: 1(Not at All) ~ 9(Extremely)</i>							
<i>Passive Video</i>	0.135 (0.141)						
<i>Pro-Active, Passive Video</i>		0.031 (0.194)	0.029 (0.191)	0.206 (0.222)	0.271 (0.215)	-0.177 (0.305)	0.119 (0.244)
<i>Pro-Passive, Passive Video</i>		-0.001 (0.192)	0.060 (0.193)	0.286 (0.232)	0.296 (0.226)	0.046 (0.282)	0.114 (0.266)
<i>Pro-Passive, Active Video</i>		-0.237 (0.216)	-0.189 (0.220)	-0.222 (0.224)	-0.178 (0.227)	0.102 (0.304)	-0.501 (0.339)
<i>Knowledge Score</i>			-0.078** (0.039)	-0.058 (0.068)	-0.027 (0.074)		
<i>Constant</i>	6.524*** (0.108)	6.643*** (0.144)	7.003*** (0.230)	6.857*** (0.288)	3.692*** (0.881)	6.429*** (0.224)	6.771*** (0.186)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	501	501	501	501	499	231	270
R-squared	0.081	0.084	0.094	0.099	0.137	0.085	0.108
Panel B:							
<i>Will Return</i>							
<i>9-Point Likert scale: 1(Never) ~ 9(Certainly)</i>							
<i>Passive Video</i>	0.240 (0.173)						
<i>Pro-Active, Passive Video</i>		-0.107 (0.244)	-0.113 (0.240)	-0.196 (0.268)	-0.206 (0.272)	-0.237 (0.411)	-0.073 (0.297)
<i>Pro-Passive, Passive Video</i>		-0.029 (0.243)	0.092 (0.244)	0.014 (0.288)	0.006 (0.290)	0.144 (0.379)	-0.003 (0.335)
<i>Pro-Passive, Active Video</i>		-0.613** (0.249)	-0.520** (0.247)	-0.481* (0.249)	-0.487* (0.256)	-0.681* (0.398)	-0.336 (0.319)
<i>Knowledge Score</i>			-0.157*** (0.044)	-0.036 (0.073)	-0.021 (0.078)		
<i>Constant</i>	5.350*** (0.125)	5.659*** (0.176)	6.376*** (0.255)	6.096*** (0.310)	4.622*** (1.118)	5.276*** (0.307)	5.906*** (0.208)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	499	499	499	499	497	229	270
R-squared	0.015	0.027	0.054	0.063	0.069	0.039	0.020

Table 9: Beliefs on Mutual Fund Fees and Beating the Market

The dependent variable in Panel A is the change in a subject’s answer to “How does a 2.5% fee compare to the average mutual fund in the market?” (1=Very Cheap, 7=Very Expensive) from before to after the video. The answer is replaced with 4 for subjects who answered “I do not know” pre-video. The dependent variable in Panel B is the subject’s post-video assessment of “It is possible to always beat the market” (1=Strongly Disagree, 7=Strongly Agree). *Pro-Active* equals 1 if the subject’s pre-video four-point score was less than or equal to zero. *Pro-Passive* equals 1 if the subject’s pre-video four-point score was greater than zero. *Passive Video (Active Video)* indicates if the subject watched the video recommending the passive (active) strategy. *Knowledge Score* is the total number of right answers to the pre-video financial knowledge questions. *High Literacy* equals 1 if the subject correctly answered at least 6 of the financial knowledge questions and 0 if they answered 5 or fewer questions correctly. Control variables, whose coefficients are omitted, include gender, age, unemployment, and college education. Robust standard errors are reported in parentheses. Coefficients significant at the 10%, 5%, and 1% levels are marked with *, **, and ***, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Full Sample				High Literacy	Low Literacy
Panel A:						
	<i>Change in Fee Belief</i>					
<i>Pro-Active, Passive Video</i>	0.572*** (0.190)	0.577*** (0.189)	0.564** (0.231)	0.617*** (0.226)	0.537** (0.246)	0.589** (0.275)
<i>Pro-Passive, Passive Video</i>	0.483*** (0.180)	0.448** (0.178)	0.443* (0.229)	0.378* (0.224)	0.442** (0.222)	0.555* (0.283)
<i>Pro-Passive, Active Video</i>	-0.121 (0.196)	-0.152 (0.195)	-0.126 (0.196)	-0.106 (0.194)	-0.208 (0.236)	0.062 (0.312)
<i>Don't Know</i>	1.183*** (0.120)	1.229*** (0.122)	1.219*** (0.122)	1.089*** (0.130)	1.383*** (0.150)	1.057*** (0.192)
<i>Knowledge Score</i>		0.053 (0.033)	0.164*** (0.056)	0.148*** (0.056)		
<i>Constant</i>	0.911*** (0.158)	0.642** (0.253)	0.348 (0.290)	1.426* (0.829)	0.910*** (0.190)	0.906*** (0.245)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	Yes	Yes	No	No
Control Variables	No	No	No	Yes	No	No
Observations	445	445	445	443	216	229
R-squared	0.214	0.219	0.229	0.257	0.279	0.178
Panel B:						
	<i>Belief in Beating the Market</i>					
	<i>7-Point Likert scale: 1(Strongly Disagree) 7(Strongly Agree)</i>					
<i>Pro-Active, Passive Video</i>	-0.887*** (0.239)	-0.885*** (0.240)	-0.938*** (0.271)	-0.986*** (0.274)	-1.125*** (0.412)	-0.692** (0.295)
<i>Pro-Passive, Index Video</i>	-1.393*** (0.239)	-1.400*** (0.240)	-1.461*** (0.292)	-1.475*** (0.300)	-1.705*** (0.357)	-1.198*** (0.324)
<i>Pro-Passive, Active Video</i>	-0.885*** (0.256)	-0.891*** (0.257)	-0.873*** (0.259)	-0.877*** (0.266)	-1.485*** (0.373)	-0.253 (0.358)
<i>Knowledge Score</i>		0.011 (0.046)	0.056 (0.080)	0.044 (0.081)		
<i>Constant</i>	4.798*** (0.169)	4.743*** (0.279)	4.646*** (0.350)	3.753*** (1.122)	5.111*** (0.264)	4.566*** (0.218)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	Yes	Yes	No	No
Control Variables	No	No	No	Yes	No	No
Observations	453	453	453	451	225	228
R-squared	0.073	0.073	0.075	0.076	0.102	0.067

Table 10: Post-Video Fund Choice

This table shows the effects of the treatments on subjects' selection of a fund portfolio at the end of the experiment. The dependent variable is an indicator that equals 1 if the subject chooses an index fund and 0 otherwise. *Pro-Active* equals 1 if the subject's pre-video four-point score was less than or equal to zero. *Pro-Passive* equals 1 if the subject's pre-video four-point score was greater than zero. *Passive Video (Active Video)* indicates if the subject watched the video recommending the passive (active) strategy. *Knowledge Score* is the total number of right answers to the pre-video financial knowledge questions. *High Literacy* equals 1 if the subject correctly answered at least 6 of the financial knowledge questions and 0 if they answered 5 or fewer questions correctly. Control variables, whose coefficients are omitted, include gender, age, unemployment, and college education. Robust standard errors are reported in parentheses. Coefficients significant at the 10%, 5%, and 1% levels are marked with *, **, and ***, respectively.

	(1)	(2)	(3)	(4)	(6)	(7)
	<i>Choose Index Fund</i>					
	Full Sample				High Literacy	Low Literacy
<i>Pro-Active, Passive Video</i>	0.576*** (0.052)	0.577*** (0.052)	0.622*** (0.060)	0.627*** (0.060)	0.628*** (0.082)	0.559*** (0.067)
<i>Pro-Passive, Passive Video</i>	0.705*** (0.044)	0.678*** (0.045)	0.739*** (0.053)	0.728*** (0.054)	0.668*** (0.073)	0.731*** (0.055)
<i>Pro-Passive, Active Video</i>	0.237*** (0.061)	0.216*** (0.060)	0.209*** (0.061)	0.207*** (0.061)	0.335*** (0.091)	0.093 (0.082)
<i>Knowledge Score</i>		0.034*** (0.009)	0.044*** (0.017)	0.040** (0.018)		
<i>Constant</i>	0.262*** (0.040)	0.107* (0.057)	0.056 (0.072)	0.118 (0.217)	0.282*** (0.068)	0.249*** (0.050)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	Yes	Yes	No	No
Control Variables	No	No	No	Yes	Yes	Yes
Observations	484	484	484	482	225	259
R-squared	0.332	0.352	0.357	0.364	0.314	0.382

Internet Appendix of

“Processing Financial Advice: Experimental Evidence
on Active vs. Passive Investment Advice”

by Antoinette Schoar and Yang Sun

December 2023

Appendix A: Full Video Scripts

Section 1

[self-intro]

Good morning! My name is Cynthia Johnson (Thomas Jenkins) and I've been a financial adviser for eight years, and I'm a certified financial planner, which is the most widely recognized and demanding set of requirements for technical knowledge and ethical standards in the industry.

[fee] - flat

My investment advisory services extend to a broad range of products with different fees, so it's important to provide you with information you need to make well-informed investment decisions. Part of this information is how I am paid. My company charges a flat fee for all of its financial advisory services, and I am compensated on either a meeting-by-meeting or yearly basis. This means, my compensation does not depend on the amount of business I generate, or the specific funds I recommend to my clients, and I have no financial incentive to recommend a particular product to my clients. For example, if you want to invest \$10,000, the up-front costs would be \$300 per visit to cover all financial advisory services. In addition, you only pay the management fee of the funds that applies to all investors.

[fee] - commission

My investment advisory services extend to a broad range of products with different fees, so it's important to provide you with information you need to make well-informed investment decisions. Part of this information is how I am paid. My company works with a number of select mutual fund families from which we receive compensation. We are paid a commission based on the amount of investments we generate for the mutual fund firm and on the fees that the customers pay. For example, if you want to invest \$10,000, the up-front cost would be 3 percent or \$300, a fraction of which goes to my firm for advising investors to put their money into this fund.

Section 2

[basics of strategies]

(The transition slide between section 1 and section 2 shows: "Introduction to Investment Strategies".)

In general, you should know there are two types of mutual funds. The first set is called index funds, which are funds that track the market or part of the market, hence the name. That means they hold a maximally diversified portfolio of stocks across all the firms in the market, and they aim to meet average market returns. These funds have an average fee of about 0.2 percent per year since they require little intervention from the fund's manager. The second set of mutual funds is called actively managed funds. These funds are run by portfolio managers who pick specific companies they invest in based on their market research and investment philosophy. This means they try to set up a balanced portfolio which aims to beat average market returns. These funds have an average fee of about 1.6 percent per year to cover the costs of the managers and market research.

Section 3

[recommend one strategy] - Passive Investment Strategy

(The transition slide between section 2 and section 3 shows: “Which Strategy to Choose?”)

The investment strategy that I recommend to all the clients I work with is to build a well-diversified portfolio of stocks, bonds, and mutual funds. I focus on funds with low fees and turnover. This approach will allow you to capture a larger percentage of the total returns and minimize exposure to any one investment. The aim is to meet the average return of the market and not to be exposed to the ups and downs of any one stock or sector. So how do you implement the strategy? Optimally, diversify your investments with index funds.

[recommend one strategy] - Active Investment Strategy

(The transition slide between section 2 and section 3 shows: “Which Strategy to Choose?”)

The investment strategy that I recommend to all the clients I work with is to build a well-balanced portfolio of stocks, bonds, and mutual funds. I focus on funds that are managed by experienced portfolio managers with a great track record. This approach will allow you to generate the highest returns on your investments and minimize exposure to the movements of the market. The aim is to beat the market and not just to mimic the ups and downs of average market returns. So how do you implement the strategy? Focus your investments on actively managed funds.

Section 4

[reasons for the recommendation] - Passive Investment Strategy

(The transition slide between section 3 and section 4 shows: “Why Index Funds?”)

What are the benefits of this strategy? Savvy investors say: “it’s not timing the market, it’s time in the market”. These investors know that no one has a crystal ball, and that not even the best managers can predict the future. So they seek to reduce their risk exposure to any one stock or sector by diversifying, rather than trying to predict the market and picking individual stocks or sectors. Also, they benefit from profitable upswings in the market by keeping their money invested when most other investors are pulling out of the market. In fact, research highlights the importance of picking diversified funds since on average well-diversified portfolios consistently deliver higher returns in the long run. Let me give you the numbers. When you look at short or long-time horizons, more than half of U.S. index funds performed above the median or middle performance of their respective categories. What this means is that by investing in funds that aim to meet the average return on the market, you’re likely to have a better than average mutual fund. In addition, index funds cost less than actively managed funds, since diversification is a simple yet effective strategy that doesn’t require a manager picking stocks and timing the market. This way you benefit from the long-term growth of the overall market while more of the returns go to you instead of the fund manager. Over time, even a small difference in costs can make a huge difference in your overall portfolio. Let’s look at an example. Over the 20-year time period ending in 2009, the average returns of index funds and actively managed funds were close to the same while the average yearly fee was under 0.5 percent for index funds and around 1.5 percent for actively managed funds. Why should you pay so much attention to fees? While it may seem that a small difference in fees shouldn’t matter, even a one percent difference in fees makes a huge difference in the long run. The data is clear. If you want your investment to have the strongest performance in the long run, you need to invest in low-cost well-diversified index funds. In a nutshell, if you want to build wealth by investing, make sure you work with advisers who recommend low-cost well-diversified index funds. Thank you for your time, and good luck investing.

[reasons for the recommendation] - Active Investment Strategy

(The transition slide between section 3 and section 4 shows: “Why Actively Managed Funds?”)

What are the benefits of this strategy? Savvy investors say: “The wise man puts all his eggs in one basket and watches the basket.” These investors know that no one builds wealth with plain vanilla funds and that even large or popular stocks can vary greatly in their returns from year to year. So they seek to reduce their exposure to underperforming stocks and to market movements in down periods rather than just sitting through them. Also, they take advantage of the opportunities that arise in boom periods by focusing on sectors that have the most promise for high returns. In fact, research highlights the importance of picking the right fund, since there are many funds that actually underperform the market, while others consistently outperform the market over long periods of time. Let me give you the numbers. When you look at the U.S. mutual fund industry over the last 3 years, for example, data shows that over 80 percent of large-cap value funds outperform their index after fees. So, by actively picking stocks in trying to time the market, these funds do better than their benchmark. When you invest in an actively managed fund, what you pay for is the unique advantages of detailed market research, experience, and the skill of the portfolio managers. Actively managed funds also have the flexibility and tools to react to the movements of the market, allowing them to seize opportunities in the moment as they arise. Over time, even a small difference in returns can make a huge difference in your portfolio. Let’s look at an example. Over the 20-year period ending in 2007, every one of the 20 top performing funds was actively managed. Why should you pay so much attention to returns? Well, it might seem that small difference in returns shouldn’t matter. In fact, even a one percent difference in returns makes a huge difference in the long run. The data is clear: if you want your investments to have superior performance you need to invest in high performing well managed funds. In a nutshell, if you want to build wealth by investing, make sure you work with advisers who recommend high-performing well-managed mutual funds. Thank you for your time and good luck investing.

Appendix B: Additional Treatments Not Studied in This Paper

In addition to the two types of investment strategy treatment, we also embedded four types of treatment with respect to the advisor's compensation in the video script: "flat fee", "commission fee", "skip fee", and "skip fee and basics". This variation in the compensation treatment is inserted into the first section of the video. Following the self-introduction part, the financial advisor in both the "flat fee" and "commission fee" videos describes how they are compensated via a flat fee or through commission, respectively. Then these two types of video continue to the second section. The "skip fee" videos, however, exclude the part in which the advisor talks about their compensation. After the opening part, the "skip fee" videos jump to the second section of describing index funds and active funds. The "skip fee and basics" videos skip both the fee compensation part and the second section of basic descriptions.

Through our analysis, we find that arms of the compensation treatment have very weak effects on people's evaluation of the financial advice and their beliefs. The compensation treatment groups are randomized and are orthogonal to the investment strategy treatment. We therefore present all results only for the 2-by-2 treatment groups, but interpret each treatment group as representing the average across the types of the compensation treatment.

Table B.1 presents the details about both the investment strategy and compensation treatment arms. Table B.2 shows the number of subjects randomized into each treatment cell. Our main analyses focus on the combination between the *Pro-Passive* and *Pro-Active* priors and the *Passive Video* and *Active Video* treatments.

Table B.1: Structure of Treatment Arms in Financial Advice Videos

This table describes the structure of the two investment strategy treatment arms and the four fee treatment arms in our financial advisor videos. Videos are sectioned into four parts. There are eight types of videos in total. The upper panel shows how the four types of fee treatment are structured in the active investment advice videos. The lower panel shows how the four types of fee treatment are structured in the passive investment advice videos. A check mark indicates that the video contains that section or subsection. The absence of a section or subsection in the video is indicated with a cross mark.

	Section 1		Section 2 basics of strategies	Section 3 recommend one strategy	Section 4 reasons for the recommendation	
	self-intro	fee				
Active Video	<i>flat fee</i>	✓	flat	✓	actively managed funds	✓
	<i>commission fee</i>	✓	commission	✓	actively managed funds	✓
	<i>skip fee</i>	✓	×	✓	actively managed funds	✓
	<i>skip fee & basics</i>	✓	×	×	actively managed funds	✓
Passive Video	<i>flat fee</i>	✓	flat	✓	index funds	✓
	<i>commission fee</i>	✓	commission	✓	index funds	✓
	<i>skip fee</i>	✓	×	✓	index funds	✓
	<i>skip fee & basics</i>	✓	×	×	index funds	✓

Table B.2: Sample Size in Finer Treatment Cells

This table shows the number of subjects randomized into each treatment cell according to [Table B.1](#).

	Total	Passive Video	Active Video
Pro-Passive Prior	248	120	128
Commission	64	32	32
Flat	59	28	31
Skip fee	97	46	51
Skip fee & basics	28	14	14
Pro-Active Prior	253	128	125
Commission	59	29	30
Flat	69	34	35
Skip fee	96	51	45
Skip fee & basics	29	14	15

Appendix C: Additional Tables and Figures

Table C.1: Balance Table Conditional on *Pro-Passive* Beliefs

This table reports the results of balance tests on subject characteristics and demographics between the groups watching the active and passive videos, conditional on people having *Pro-Passive* prior beliefs. p-values are from two-sample t-tests on the differences of mean values between the active and passive video treatment groups.

Variable	Active Video		Passive Video		P-value
	N	Mean/SE	N	Mean/SE	Act.-Pas.
Gender (1=Male)	128	0.55 (0.04)	120	0.50 (0.05)	0.39
Age	128	38.87 (1.08)	120	41.41 (1.23)	0.12
Marital Status (1=Married)	128	0.27 (0.04)	120	0.34 (0.04)	0.25
Country of Birth (1=US)	124	0.87 (0.03)	118	0.88 (0.03)	0.81
Citizenship (1=US)	124	0.94 (0.02)	119	0.96 (0.02)	0.61
Have a Full-time Job	128	0.46 (0.04)	120	0.53 (0.05)	0.32
Unemployed	128	0.10 (0.03)	120	0.03 (0.01)	0.01**
Income under 35k	125	0.42 (0.04)	115	0.31 (0.04)	0.10*
Save at least 50% of Income	126	0.01 (0.01)	118	0.04 (0.02)	0.08*
Have Retirement Account	128	0.59 (0.04)	120	0.76 (0.04)	0.00***
Invest in Stocks	128	0.39 (0.04)	120	0.35 (0.04)	0.51
College Degree	128	0.85 (0.03)	120	0.90 (0.03)	0.25
Self-assessed Literacy Level	127	3.98 (0.14)	120	3.80 (0.14)	0.35
Self-ranked Literacy Level	109	51.24 (2.03)	104	45.34 (2.28)	0.05*
Willingness to take Risk	126	4.13 (0.14)	120	3.95 (0.13)	0.35
Knowledge Score (0-8)	128	5.16 (0.19)	120	5.35 (0.19)	0.49
Trust Financial Institutions	128	3.69 (0.13)	120	3.48 (0.14)	0.28
Trust People	128	3.52 (0.15)	120	3.45 (0.15)	0.76

Table C.2: Balance Table Conditional on *Pro-Active* Beliefs

This table reports the results of balance tests on subject characteristics and demographics between the groups watching the active and passive videos, conditional on people having *Pro-Active* prior beliefs. p-values are from two-sample t-tests on the differences of mean values between the active and passive video treatment groups.

Variable	Active Video		Passive Video		P-value
	N	Mean/SE	N	Mean/SE	Act.-Pas.
Gender (1=Male)	125	0.44 (0.04)	128	0.62 (0.04)	0.00***
Age	124	37.60 (1.02)	128	38.37 (1.07)	0.61
Marital Status (1=Married)	125	0.27 (0.04)	128	0.26 (0.04)	0.80
Country of Birth (1=US)	123	0.79 (0.04)	124	0.82 (0.03)	0.50
Citizenship (1=US)	125	0.89 (0.03)	126	0.93 (0.02)	0.27
Have a Full-time Job	125	0.43 (0.04)	127	0.39 (0.04)	0.46
Unemployed	125	0.06 (0.02)	127	0.09 (0.03)	0.37
Income under 35k	119	0.45 (0.05)	120	0.53 (0.05)	0.18
Save at least 50% of Income	124	0.04 (0.02)	127	0.02 (0.01)	0.24
Have Retirement Account	125	0.47 (0.04)	128	0.45 (0.04)	0.67
Invest in Stocks	125	0.26 (0.04)	128	0.23 (0.04)	0.69
College Degree	125	0.76 (0.04)	128	0.76 (0.04)	0.97
Self-assessed Literacy Level	125	3.54 (0.15)	128	3.64 (0.13)	0.60
Self-ranked Literacy Level	111	39.75 (2.30)	112	41.40 (2.25)	0.61
Willingness to take Risk	124	4.05 (0.12)	127	4.13 (0.14)	0.67
Knowledge Score (0-8)	125	4.59 (0.18)	128	4.55 (0.18)	0.88
Trust Financial Institutions	125	3.80 (0.13)	128	3.78 (0.14)	0.92
Trust People	125	3.56 (0.14)	128	3.51 (0.14)	0.80

Table C.3: Belief Shifts and Post-Video Investment Belief (Excluding Zero Score)

This table shows the robustness of Table 5 after excluding the subjects with a prior *Pro-Passive Score* of zero. The dependent variable in Panel A is the change in a subject's *Pro-Passive Score* from before to after the video treatment. The dependent variable in Panel B is the subject's post-video *Pro-Passive Score*. *Video Direction* equals 1 for the passive advice video and -1 for the active advice video. *Pro-Active* equals 1 if the subject's pre-video four-point score was less than or equal to zero. *Pro-Passive* equals 1 if the subject's pre-video four-point score was greater than zero. *Passive Video (Active Video)* indicates if the subject watched the video recommending the passive (active) strategy. *Knowledge Score* is the total number of right answers to the pre-video financial knowledge questions. *High Literacy* equals 1 if the subject correctly answered at least 6 of the financial knowledge questions and 0 if they answered 5 or fewer questions correctly. Control variables, whose coefficients are omitted, include gender, age, unemployment, and college education. Robust standard errors are reported in parentheses. Coefficients significant at the 10%, 5%, and 1% levels are marked with *, **, and ***, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Full Sample					High Literacy	Low Literacy
Panel A. <i>Change in Pro-Passive Score (Dropping Zero-Score Prior)</i>							
<i>Video Direction</i>	1.323*** (0.116)						
<i>Pro-Active, Passive Video</i>		3.061*** (0.308)	3.059*** (0.306)	3.008*** (0.309)	3.312*** (0.362)	3.439*** (0.440)	2.726*** (0.414)
<i>Pro-Passive, Passive Video</i>		0.178 (0.257)	0.205 (0.259)	0.189 (0.260)	0.590* (0.351)	0.790*** (0.279)	-0.034 (0.389)
<i>Pro-Passive, Active Video</i>		-1.958*** (0.301)	-1.936*** (0.301)	-1.907*** (0.300)	-1.978*** (0.302)	-0.589 (0.366)	-3.143*** (0.437)
<i>Knowledge Score</i>			-0.032 (0.049)	-0.011 (0.052)	-0.021 (0.094)		
<i>Constant</i>	0.537*** (0.116)	0.395* (0.211)	0.540* (0.315)	-0.897 (1.306)	-1.176 (1.319)	-0.378 (0.230)	0.873*** (0.305)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	422	422	422	420	420	199	223
R-squared	0.239	0.441	0.442	0.451	0.457	0.372	0.515
Panel B. <i>Posterior Pro-Passive Score (Dropping Zero-Score Prior)</i>							
<i>Video Direction</i>	1.187*** (0.102)						
<i>Pro-Active, Passive Video</i>		2.760*** (0.282)	2.763*** (0.286)	2.788*** (0.288)	3.102*** (0.329)	3.072*** (0.442)	2.460*** (0.368)
<i>Pro-Passive, Passive Video</i>		4.245*** (0.220)	4.213*** (0.227)	4.168*** (0.235)	4.577*** (0.317)	4.959*** (0.259)	3.787*** (0.324)
<i>Pro-Passive, Active Video</i>		2.002*** (0.279)	1.977*** (0.281)	1.981*** (0.283)	1.906*** (0.288)	3.442*** (0.342)	0.587 (0.401)
<i>Knowledge Score</i>			0.038 (0.048)	0.045 (0.051)	0.018 (0.092)		
<i>Constant</i>	1.027*** (0.102)	-1.368*** (0.184)	-1.540*** (0.298)	-3.135*** (1.199)	-3.368*** (1.202)	-2.062*** (0.212)	-0.899*** (0.261)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	422	422	422	420	420	199	223
R-squared	0.252	0.381	0.382	0.386	0.394	0.501	0.367

Table C.4: Belief Shifts and Post-Video Investment Belief (Intensity Score)

The dependent variable in Panel A is the change in a subject's *Pro-Passive Intensity Score* from before to after the video treatment. The dependent variable in Panel B is the subject's post-video *Pro-Passive Intensity Score*. *Video Direction* equals 1 for the passive advice video and -1 for the active advice video. *Pro-Active* equals 1 if the subject's pre-video four-point score was less than or equal to zero. *Pro-Passive* equals 1 if the subject's pre-video four-point score was greater than zero. *Passive Video (Active Video)* indicates if the subject watched the video recommending the passive (active) strategy. *Knowledge Score* is the total number of right answers to the pre-video financial knowledge questions. *High Literacy* equals 1 if the subject correctly answered at least 6 of the financial knowledge questions and 0 if they answered 5 or fewer questions correctly. Control variables, whose coefficients are omitted, include gender, age, unemployment, and college education. Robust standard errors are reported in parentheses. Coefficients significant at the 10%, 5%, and 1% levels are marked with *, **, and ***, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Full Sample					High Literacy	Low Literacy
Panel A.							
<i>Change in Pro-Passive Intensity Score</i>							
<i>Video Direction</i>	2.791*** (0.206)						
<i>Pro-Active, Passive Video</i>		6.471*** (0.537)	6.469*** (0.535)	6.516*** (0.536)	6.944*** (0.627)	6.658*** (0.788)	6.218*** (0.713)
<i>Pro-Passive, Passive Video</i>		1.571*** (0.461)	1.616*** (0.466)	1.684*** (0.473)	2.219*** (0.604)	2.218*** (0.618)	1.413** (0.666)
<i>Pro-Passive, Active Video</i>		-2.933*** (0.547)	-2.899*** (0.555)	-2.770*** (0.555)	-2.864*** (0.566)	-1.195 (0.725)	-4.584*** (0.814)
<i>Knowledge Score</i>			-0.059 (0.087)	-0.006 (0.095)	-0.014 (0.165)		
<i>Constant</i>	0.397* (0.211)	0.511 (0.316)	0.451 (0.377)	-0.926 (1.312)	1.259 (1.447)	-0.354 (0.227)	0.872*** (0.305)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	493	493	493	491	491	229	264
R-squared	0.278	0.420	0.421	0.430	0.432	0.406	0.455
Panel B.							
<i>Posterior Pro-Passive Intensity Score</i>							
<i>Video Direction</i>	2.568*** (0.191)						
<i>Pro-Active, Passive Video</i>		5.639*** (0.506)	5.647*** (0.512)	5.756*** (0.513)	6.195*** (0.571)	6.393*** (0.847)	5.056*** (0.626)
<i>Pro-Passive, Passive Video</i>		8.560*** (0.403)	8.417*** (0.423)	8.350*** (0.439)	8.895*** (0.553)	9.328*** (0.610)	8.000*** (0.550)
<i>Pro-Passive, Active Video</i>		3.789*** (0.529)	3.681*** (0.530)	3.703*** (0.537)	3.603*** (0.551)	5.982*** (0.737)	1.310* (0.729)
<i>Knowledge Score</i>			0.185** (0.087)	0.195** (0.093)	0.171 (0.167)		
<i>Constant</i>	2.294*** (0.191)	-2.191*** (0.324)	-3.043*** (0.507)	-5.410** (2.286)	-5.674** (2.309)	-2.907*** (0.532)	-1.651*** (0.382)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	493	493	493	491	491	229	264
R-squared	0.279	0.394	0.400	0.403	0.407	0.491	0.381

Table C.5: Belief Shifts and Post-Video Investment Belief (Alternative 6-Point)

The dependent variable in Panel A is the change in a subject's *Pro-Passive Score* from before to after the video treatment. The dependent variable in Panel B is the subject's post-video *Pro-Passive Score*. This alternative construction uses *Diversification*, *Minimizing Fees*, and *Minimizing Risk* as passive components, and *Picking Good Stocks*, *Timing the Market*, and *Picking Good Fund Managers* as active components. *Video Direction* equals 1 for the passive advice video and -1 for the active advice video. *Pro-Active* equals 1 if the subject's pre-video four-point score was less than or equal to zero. *Pro-Passive* equals 1 if the subject's pre-video four-point score was greater than zero. *Passive Video (Active Video)* indicates if the subject watched the video recommending the passive (active) strategy. *Knowledge Score* is the total number of right answers to the pre-video financial knowledge questions. *High Literacy* equals 1 if the subject correctly answered at least 6 of the financial knowledge questions and 0 if they answered 5 or fewer questions correctly. Control variables, whose coefficients are omitted, include gender, age, unemployment, and college education. Robust standard errors are reported in parentheses. Coefficients significant at the 10%, 5%, and 1% levels are marked with *, **, and ***, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Full Sample					High Literacy	Low Literacy
Panel A. <i>Change in Pro-Passive Score (Alternative 6-Point)</i>							
<i>Video Direction</i>	1.889*** (0.125)						
<i>Pro-Active, Passive Video</i>		4.282*** (0.321)	4.286*** (0.323)	4.298*** (0.323)	4.701*** (0.389)	4.362*** (0.449)	4.226*** (0.439)
<i>Pro-Passive, Passive Video</i>		1.894*** (0.288)	1.804*** (0.297)	1.797*** (0.298)	2.281*** (0.397)	1.978*** (0.357)	1.944*** (0.454)
<i>Pro-Passive, Active Video</i>		-1.291*** (0.346)	-1.361*** (0.344)	-1.307*** (0.336)	-1.417*** (0.334)	-0.274 (0.450)	-2.389*** (0.492)
<i>Knowledge Score</i>			0.116** (0.055)	0.145** (0.059)	0.039 (0.106)		
<i>Constant</i>	0.334*** (0.125)	-0.902*** (0.205)	-1.432*** (0.342)	-3.616** (1.494)	-3.616** (1.504)	-0.952*** (0.280)	-0.914*** (0.286)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	501	501	501	499	499	231	270
R-squared	0.317	0.397	0.402	0.413	0.421	0.394	0.445
Panel B. <i>Posterior Pro-Passive Score (Alternative 6-Point)</i>							
<i>Video Direction</i>	1.849*** (0.120)						
<i>Pro-Active, Passive Video</i>		4.114*** (0.303)	4.117*** (0.306)	4.137*** (0.307)	4.340*** (0.354)	4.516*** (0.482)	3.854*** (0.393)
<i>Pro-Passive, Passive Video</i>		5.755*** (0.264)	5.691*** (0.271)	5.645*** (0.278)	5.889*** (0.355)	6.191*** (0.386)	5.477*** (0.377)
<i>Pro-Passive, Active Video</i>		2.394*** (0.330)	2.343*** (0.330)	2.332*** (0.331)	2.276*** (0.333)	3.496*** (0.472)	1.251*** (0.459)
<i>Knowledge Score</i>			0.083 (0.054)	0.083 (0.058)	0.031 (0.103)		
<i>Constant</i>	0.717*** (0.120)	-2.343*** (0.194)	-2.724*** (0.323)	-4.018*** (1.432)	-4.024*** (1.453)	-2.702*** (0.309)	-2.116*** (0.252)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	501	501	501	499	499	231	270
R-squared	0.330	0.428	0.431	0.433	0.435	0.472	0.419

Table C.6: Belief Shifts and Post-Video Investment Belief (Alternative 4-Point)

The dependent variable in Panel A is the change in a subject's *Pro-Passive Score* from before to after the video treatment. The dependent variable in Panel B is the subject's post-video *Pro-Passive Score*. This alternative construction uses *Minimizing Fees* and *Minimizing Risk* as passive components, and *Picking Good Stocks* and *Timing the Market* as active components. *Video Direction* equals 1 for the passive advice video and -1 for the active advice video. *Pro-Active* equals 1 if the subject's pre-video four-point score was less than or equal to zero. *Pro-Passive* equals 1 if the subject's pre-video four-point score was greater than zero. *Passive Video (Active Video)* indicates if the subject watched the video recommending the passive (active) strategy. *Knowledge Score* is the total number of right answers to the pre-video financial knowledge questions. *High Literacy* equals 1 if the subject correctly answered at least 6 of the financial knowledge questions and 0 if they answered 5 or fewer questions correctly. Control variables, whose coefficients are omitted, include gender, age, unemployment, and college education. Robust standard errors are reported in parentheses. Coefficients significant at the 10%, 5%, and 1% levels are marked with *, **, and ***, respectively.

Panel A.		Change in Pro-Passive Score (Alternative 4-Point)					
<i>Video Direction</i>	1.338*** (0.105)						
<i>Pro-Active, Passive Video</i>		3.080*** (0.283)	3.082*** (0.284)	3.064*** (0.288)	3.413*** (0.349)	3.033*** (0.385)	3.097*** (0.398)
<i>Pro-Passive, Passive Video</i>		1.085*** (0.250)	1.020*** (0.253)	1.034*** (0.257)	1.466*** (0.346)	1.028*** (0.285)	1.184*** (0.399)
<i>Pro-Passive, Active Video</i>		-1.111*** (0.297)	-1.162*** (0.294)	-1.133*** (0.290)	-1.215*** (0.287)	-0.407 (0.360)	-1.904*** (0.439)
<i>Knowledge Score</i>			0.084* (0.046)	0.099** (0.050)	0.073 (0.094)		
<i>Constant</i>	0.317*** (0.105)	-0.460** (0.193)	-0.845*** (0.310)	-1.680 (1.261)	-1.893 (1.254)	-0.475** (0.222)	-0.461 (0.286)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	501	501	501	499	499	231	270
R-squared	0.250	0.339	0.343	0.354	0.362	0.334	0.374
Panel B.		Posterior Pro-Passive Score (Alternative 4-Point)					
<i>Video Direction</i>	1.287*** (0.097)						
<i>Pro-Active, Passive Video</i>		2.913*** (0.257)	2.913*** (0.257)	2.925*** (0.259)	3.012*** (0.300)	3.406*** (0.397)	2.590*** (0.338)
<i>Pro-Passive, Passive Video</i>		4.202*** (0.223)	4.208*** (0.223)	4.176*** (0.229)	4.277*** (0.289)	4.619*** (0.315)	3.968*** (0.312)
<i>Pro-Passive, Active Video</i>		1.907*** (0.267)	1.911*** (0.267)	1.896*** (0.266)	1.867*** (0.269)	2.816*** (0.364)	1.065*** (0.381)
<i>Knowledge Score</i>			-0.007 (0.044)	-0.006 (0.047)	-0.051 (0.086)		
<i>Constant</i>	0.430*** (0.097)	-1.821*** (0.169)	-1.787*** (0.277)	-2.942** (1.198)	-2.872** (1.220)	-2.306*** (0.239)	-1.502*** (0.229)
Advisor F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Literacy × Video Type	No	No	No	Yes	Yes	No	No
Control Variables	No	No	No	No	Yes	No	No
Observations	501	501	501	499	499	231	270
R-squared	0.270	0.373	0.373	0.375	0.376	0.437	0.343