

# White-labels, brands and trust: How mutual fund labels affect retirement portfolios

by

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## Abstract:

*Generic, or “white-label,” investment options are popular funds in retirement plans. Plan sponsors can assemble white-label options from multiple funds, thus raising diversification and enabling easier modifications to option components. This study shows how plan participants react to white-label and branded options, and, specifically, how brand trust alters participants’ allocations to white-label options. Using online experiments engaging 940 currently-employed retirement-plan participants from the Understanding America Study panel, participants make incentivized investment allocations and predict investment returns using distribution builders. Study One compares white label options with otherwise-equivalent, highly- (poorly-) trusted branded options. Study Two compares white-label options with options labelled with an employer’s name. Employers may want to put their name on white-label options to promote the company’s benefits and brand among their employees. We have several key findings. First, plan participants allocate significantly more to trusted brands when choosing between otherwise equivalent investment options. Second, options showing highly-trusted brand names are more attractive than equivalent white-label options, and the reverse holds for poorly-trusted brand names. It follows that highly-trusted brands could capitalize by displaying their names on investment options. Less-trusted brands could consider generic labelling. Third, options showing the names of highly-trusted employers are more attractive to plan participants than equivalent white-label options. Plan sponsors could consider adding the names of trusted employers to white-label options. In general, participants expect higher returns and lower risk from options that display the name of a highly-trusted brand. Together the results have important implications for how plan sponsors and fund managers present investment options to participants.*

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## **White labels, brands and trust: How mutual fund labels affect retirement portfolios**

### **I. Introduction:**

Many U.S. retirement plans are introducing generic mutual fund options into plan menus. These funds, commonly referred to as “white-label” funds, are not branded to a specific investment company and typically are named after the investment class in which they invest. A plan sponsor also has the option to brand these generic funds with the employer’s name. An obvious question is how the introduction of white-label funds to retirement plan menus will affect allocations, given that past research demonstrates that investment behavior can be influenced by factors such as the investment menu composition or cosmetic changes to fund names (Agnew, 2006; Benartzi and Thaler, 2001; Brown, Liang and Weisbenner, 2007; Huberman and Jiang, 2006; Liang and Weisbenner, 2002). Drawing from marketing brand research, we hypothesize that brand trust (either in the investment company or in the employer) may be driving asset allocations to brand-named (compared to white-label) funds, in addition to the participants’ perceptions of fund risk and return characteristics. Our results show that brand trust is an important factor in participants’ investment decisions. These findings highlight why plan sponsors should be mindful of the effects of fund labels when changing investment menus.

For this project, we designed and fielded experiments on a sample from the University of Southern California’s Understanding America Study panel. We test our brand trust theories using two experimental studies in which we gather asset allocation choices, as well as investors’ risk and return estimates for different funds. To generate estimates of expected risk and return, we follow other experimental researchers and use distribution builders (For an example, see Goldstein, Johnson, and Sharpe 2008). In our studies, all the experimental funds are index funds where the fees are assumed to be waived. For each index fund, we focus on four different labels: a highly-trusted brand name, a poorly-trusted brand name, a white-label where the name includes only the asset class, and an employer-branded white-label which includes the employer’s name along with the asset type. It follows that, according to theory, any fund within the same asset class should not significantly dominate another fund in the same class. Likewise, expected returns and risk perceptions between funds in the same asset class should not significantly differ, on average.

We find, in Study One, that a fund with a name that includes a highly-trusted brand receives higher allocations than a fund including the name of a less-trusted brand, confirming our hypothesis that brand trust matters. We also find that expected returns and different measures of expected risk are affected by trust in predicted ways. In Study Two, we compare white-label funds with employer-branded white-label funds. We find that investors allocate more to funds labelled with the names of trusted employers than to those with names of less trusted employers, and that expected risk and return measures change as hypothesized. However, while the changes in expected risk and return are often in the correct direction as employer trust changes, they are not always significant. Future studies are needed to confirm or refute this finding.

Our study contributes to the literature by demonstrating for the first time, through an experimental study, that brand trust in both fund providers and employers can affect

allocations, as well as risk and return expectations. We infer several implications for plan sponsors and fund management companies. First, before adding new funds to plan menus, plans sponsors should carefully consider whether participants' trust in those new fund brands could potentially distort their asset allocations. Second, they might also consider how their current menus influence behavior. Third, the findings show that plan sponsors who adopt white-label funds should consider adding the employer's name to the fund if the employer is highly trusted by employees. For the fund management companies, our findings indicate that those fund companies with relatively low trust ratings could offer their funds as white-labels, to increase inflows, while those with high trust ratings should capitalize on their names and include them in their funds' labels.

Our paper is organized as follows. We begin by reviewing earlier research into investment-menu effects, as well as why fund names and brand trust might matter. We follow with a deeper discussion of white-label funds and how they are incorporated into retirement plan menus. The next section describes our two studies and experimental method. We then present our results followed by a summary discussion of our findings and their implications in the conclusion.

## **II. Plan Menus, Fund Names and Brand Trust**

In theory, an individual should choose his investments by creating a portfolio of funds that optimizes expected returns for the level of risk the participant is willing to accept. However, results from many empirical studies suggest that in reality individuals often choose investments for reasons other than those supported by portfolio theory.

For example, using administrative data, several studies provide evidence that participants' allocations in defined contribution (DC) employer-sponsored plans are influenced by the size and composition of the retirement plans' investment menu. Research shows that often individuals follow simple diversification heuristics that are dependent on the investment options in the menu. When the menu is limited, Benartzi and Thaler (2001) find evidence that some individuals divide their retirement contributions evenly among their investment choices, the so-called "1/n heuristic." For larger menus, Agnew (2006) and Huberman and Jiang (2006) find that some investors follow a slightly modified diversification strategy in which they split their contributions evenly but only among a subset of the total investment options available. The number and mix of retirement investment options can also tilt an investor's portfolio towards a certain asset class according to studies by Brown, Liang and Weisbenner (2007), Tang, Mitchell, Mottola and Utkus (2010) and Bateman, Dobrescu, Newell, Ortmann and Thorp (2016).

Investments options that are familiar to participants may also draw participants' attention and investment money. Huberman (2001) finds interesting investing patterns related to the U.S. Regional Bell operating companies. He theorizes that investors appear to invest in what they know, rather than optimizing based on return and risk. In retirement plans, familiarity bias also appears to be an issue. For example, before restrictions were placed in some retirement plans, company stock was a very popular investment choice. Research at that time found evidence of several behavioral drivers related to high allocations to company stock,

including the familiarity bias, an endorsement effect induced by company stock matches and company loyalty (Agnew 2006, Benartzi 2001, Cohen 2009).

Cooper, Gulen and Rau (2005) also find that fund names can drive fund flows but for other reasons than familiarity. They study mutual fund flow data and find evidence that individuals sometimes select funds because they are associated with a popular investment style. To prove this, they trace changes in mutual funds' names from unpopular, or "cold style," names to popular, or "hot style," names. The popularity of the investment style, such as growth and value, was based on that style's return performance prior to the name change. They find a sharp increase in fund flows to funds that change their names to a hot style. They demonstrate that fund inflows are not dependent upon whether the fund actually changed its holdings to reflect the style or not. Thus, they show that a purely cosmetic name change can influence investment behavior.

Green and Jame (2013) likewise demonstrate that stock investment is influenced by the fluency of the company's name. Fluency relates to how easily individuals can process a name. Companies with short, easy-to-pronounce names are more fluent. Their study shows that these companies garner greater breadth of ownership. In addition, they study companies that changed their name and find those changing to a name with improved fluency also have associated increases in breadth of ownership. They find that more fluent mutual funds have the largest fund flows.

Beyond the fund names, the brand of the mutual fund company is strongly related to inflows. An extensive literature in marketing has shown that brand name is consequential for purchase decisions, with familiar and favorable brand names having a positive impact on purchase behavior (Zeithaml, 1988; Richardson, Dick and Jain, 1994). Further, when people perceive that they have high quality connections with brands, it can yield positive consequences for those brands (Ahluwalia, Burnkrant, and Unnava 2000; Ahluwalia, Unnava, and Burnkrant 2001; Raju, Unnava, and Montgomery 2009). One important dimension of such relations is how dependable people perceive brands to be, termed brand trust; people exhibit a greater propensity to conduct business with more trusted brands (Grégoire & Fisher, 2008; Sirdeshmukh, Singh, & Sabol, 2002). Prior work on financial decision-making has shown a similarly positive impact of brand. For example, Wang and Tsai (2014) demonstrate that people were more likely to purchase mutual funds with a more (vs. less) favorable brand image. In addition, Sialm and Tham (2015) find that individual fund inflows relate to the past performance of the fund's management company as a whole even though that past company performance of the company is often unrelated to individual fund performance. This spillover effect from the management company's brand to the funds is found only when individual funds are labeled with the name of the management company. In addition, when the authors separate the funds based on the fluency of the name (using Green and Jame 2013,) they find the spillover is only effective for the short, easy to pronounce names. They conclude from this that the spillovers are most likely due to brand or reputation, not rational learning.

A reasonable question arising from this research is whether menu shifts induced by the introduction of white-label funds could affect participants' allocations. In addition, the inclusion of an employer's name in the white-label fund's name could also affect inflows, depending on the employee's relationship with the firm. It is clear from the research that plan sponsors should recognize that factors beyond simple expected returns and risk may influence

allocations when they construct plan menus. One goal of our paper is to determine whether a participant's brand trust in a fund provider or his employer is something plan sponsors should consider when constructing investment menus.

### **III. White-Label Funds and Retirement Plan Investment Menus**

White-label funds have existed for decades, and are commonly used in large DC retirement plans. A Hewitt study estimated in 2014 that approximately 25% of plans offer a white-label option (Hewitt 2014).

In a comprehensive overview of white-label funds, Bare, Kloepfer, Lucas and Veneruso (2017) highlight several factors that may explain why plan sponsors find these products attractive. First, they state that plan sponsors enjoy the tremendous flexibility they have when constructing a white-label fund. A fund can consist of one simple underlying fund or combine multiple funds with collective investment trusts (CIT) and separate accounts into a more complex option. In theory, sponsors can create a white-label fund via a variable annuity, a separate account, a recordkeeping solution, a CIT or a mutual fund. Thus, the underlying funds in a large cap stock white-label fund could include funds from more than one firm. For large plans, this ability to combine multiple funds into one white-label is very beneficial. For one, it offers "scalable capacity," which is a strong selling point for large DC plans that sometimes are forced to offer very similar funds in their stand-alone menus because the active managers' capacities in each fund are limited (Bare et al 2017). Sponsors are also concerned that a large number of similar funds could cause choice overload among participants. Therefore, the prospect of simplifying the menu by including only one white-label fund that captures the whole asset class is appealing.

Second, plan sponsors can combine different investment strategies, like active and passive management, into one white-label. This permits sponsors to have more control over fees and to tailor their fund to their participants. Sponsors can also include a fund that may be too expensive to offer on its own but, when combined with other funds, would contribute to the portfolio's diversification and benefit participants.

Third, plan sponsors may favor how much easier it is to replace underperforming asset managers. Replacing branded funds can be difficult especially when participants feel connected to a brand. However, the process of changing asset managers within a white-label fund is much simpler. For example, if participants are not engaged with their plan, it is possible that they could be completely unaware of a change in the funds underlying a white-label option. Bare et al (2017) mentions that it is arguable whether the sponsor needs to issue a 30- to 90-day notice when the white-label fund is the investment vehicle, rather than the underlying funds. In sum, white-label funds allow sponsors to react quickly to changes in fund performance or the departure of a fund manager.

Yet, plan sponsors must also consider some potential drawbacks related to introducing white-label funds. These considerations are outlined by Bare et al (2017), and their points are summarized here. For one, they point out that sponsors are liable for the investment decisions related to the white-label fund construction. Choosing managers and setting portfolio allocations are fiduciary decisions, and therefore, plan sponsors must make sure to carefully document the fiduciary processes they employ to construct the funds. Plan sponsors may need

to seek additional help from the outside or hire additional staff to ensure that they have established sufficient fiduciary protections.

Second, adding white-labels funds brings additional operational requirements. On top of designing and implementing the white-label funds, plan sponsors must also continually monitor them. Depending on how the funds are made the sponsors may need to pay their plan's record keeper or trust/custodian for add-on services. The operational items may also require additional resources to carry out.

Finally, these funds generate a need for participant education, as well as customized communications. Both can be expensive and time consuming to implement. Communication can include disseminating customized fund fact sheets that report fund performance for the white-label options and information about the funds underlying those same options.

White-label funds can be incorporated into plans in a variety of ways. They can be included with other branded fund options or be the only options offered in the retirement plan. Figure 1 provides an example of a plan menu that includes branded mutual funds, branded CITs, white-label custom funds and white-label CITs. The white-label funds in this menu are branded by the plan provider, the New York State Deferred Compensation Plan (NYSDCP). Bare et al (2017) discuss that it is a common practice for employers to brand their white label options with the employer's name. Industry experts have told us that sometimes this is because companies like to brand their benefit packages. Bare et al (2017) suggest that employers may make participants more comfortable with their white-label investment options if the fund bears the company's name. However, they warn if a third-party is constructing the fund it may make participants believe the company has a greater role in the fiduciary decision making than they do. They also suggest that weak relationships between companies and employees could undermine the popularity an employer named fund which is in line with our hypothesis.

#### **IV. Experimental Design: Studies One and Two**

Motivated by the brand trust literature, and informed by two focus group sessions facilitated by Distillery, Inc., we conducted several experiments using the Understanding America Study (UAS) online panel through the University of Southern California (USC). The UAS is an online representative panel of approximately 6,000 American households. An appealing feature of the panel is the availability of data gathered from other studies using the panel. Available information useful to our study include participants' financial literacy, asset ownership and personality traits. All the studies were approved by William and Mary's Institutional Review Board.

Before fielding our two main studies, we ran a pretest to identify two investment company brands that were significantly different in terms of brand trust, but not on other variables. To do this, we asked 128 participants to indicate their familiarity with (1 = very unfamiliar, 7 = very familiar), knowledge of (2-item scale: "I consider myself knowledgeable," "I consider myself informed," 1 = strongly disagree, 7 = strongly agree;  $\alpha = .96$ ; Raju, Unnava, and Montgomery 2009), and trust in (3-item, 7-point scale: very undependable/very dependable, very incompetent/very competent, of low integrity/of high integrity;  $\alpha = .96$ ; Grégoire & Fisher, 2008) each of six different brands. From this output, we identified one high-trust brand ( $M = 3.81$ ) and one low-trust brand ( $M = 3.49$ ) to use in subsequent experiments; these brands

differed on their rated trust ( $F(1,123) = 6.17, p = .01$ ), but not on their familiarity or knowledge (all  $F_s < 2.05, p_s > .16$ ). This increases our confidence that we can attribute any observed effects to differences in perceived trust between the two brands and not to other brand-related variables. To protect company anonymity, we do not disclose here the names of the brands we tested. Instead we refer to them as the high-trust brand and the low-trust brand. The pretest also showed whether participants could understand the distribution builder - the graphical interface that measured participants' return and risk expectations for different asset classes. Most pre-test participants appreciated the instructional video that explained how to execute this task, and completed the task competently.

For the main experiment, we invited a sample of 1,250 panel members who are currently employed, and who participate in an employer-sponsored retirement plan that allows investment choices. We also required that the participants in our sample had previously participated in survey modules on financial literacy and asset ownership. In addition, participants needed to be 18 years or older and consent to participation. We fielded the experiment from October through November of 2018, and we closed the survey once we reached our target of 940 completed responses.<sup>1</sup>

We assigned participants randomly to one of four treatment groups, as depicted in Table 1. For the first task, we asked participants to imagine that their employer had started a new retirement plan, and explained to them that they would need to decide how to invest their retirement savings.<sup>2</sup> We provided participants with a fund description page (see Figure 2) that described the general types of funds that they could invest in. The description page also explained the naming convention for the funds. In Study One (Treatments 1 and 2) participants read:

*The funds that you can choose from may be managed by one or more portfolio managers.*

*If you see the name of a professional investment company preceding the fund name, the fund is managed by that company.*

*If you see "White Label" preceding the fund name, this means the fund has been put together for your employer's retirement plan and given a generic name. The fund may include one or more mutual funds which hold the same type of investment.*

For Study Two (Treatment 3), these instructions were slightly modified. We removed the second sentence about the professional investment company and replaced it with this sentence:

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<sup>1</sup> To view the survey for Treatment 3 (employer branded white-label option v. white label option), please go to this link: <https://uas.usc.edu/survey/playground/uas148/test/index.php>.

<sup>2</sup> Screen shots from the experiment are available on request.

*If you see the initials of your employer preceding the fund name, this means the fund has been put together for your employer's retirement plan. The fund may include one or more mutual funds which hold the same type of investment.*

The sentence above matches the white-label description almost exactly but does not include “and given a generic name” in the description. Figure 2 shows the fund description pages for Treatments 1 and 2 (Panel A) and Treatment 3 (Panel B).

After viewing the fund descriptions, participants received the following instructions:

*Now, we would like for you to imagine that your employer has started a new retirement plan. You must decide how to allocate the money that you have in your retirement account.*

*On the next page, you will see a retirement account allocation form. Please read through the form carefully, think about how you would allocate your retirement account, and then decide how to allocate your retirement account balance among the investment options listed.*

Depending on which treatment group they were assigned to, participants then saw one of four possible allocation screens, that closely resembled retirement plan fund selection forms. We also asked participants to assume that investment fees for all the funds are waived. We showed participants in Treatments 1-3 a menu of ten funds. The menu included two Money Market funds, two U.S Bond Index funds, two U.S. Large Cap Index funds, two U.S. Small Cap Index funds, and two non-U.S. Global Index funds. The menu for participants in Treatment 1 had a high-trust branded option for each type of fund, and a white-label option for each type of fund. For example, for the money market fund, the menu included a high-trust branded money market fund and a white-label money market fund. The menu for participants in Treatment 2 had a low-trust branded option for each type of fund, and a white-label branded option for each type of fund. The menu for participants in Treatment 3 had an employer-branded white-label option and a white-label option for each type of fund. Note that in Treatment 3, participants were asked at the beginning of the survey to provide the initials or a nickname for their employer. The survey was designed so the inputs from those answers were piped into the fund's names as they proceeded through the experiment. Thus, each employer fund was personalized to the participant. See Figure 3 for an example of the allocation page for Treatment 3. Finally, the menu for participants in Treatment 4 included only five options: a white-label option for each type of fund. Treatment 4 is our control treatment.

To incentivize this task, we told participants that two people would be randomly selected to earn a bonus based on their allocations and invited them to click a link to a more detailed description of the bonus calculation.<sup>3</sup> The goal of the allocation task was to discover

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<sup>3</sup> The link showed the following text: “You will be rewarded a bonus based on your allocations in this task. We will assume you invest a \$25 portfolio in your chosen funds for five years. Your bonus will equal your initial portfolio

participants' preferences for branded versus white-label funds when both are offered together. This comparison allows us to understand the influence of fund labelling within-subjects, as well as between treatments.

Following the allocation task, participants were asked to rank, from highest risk to lowest risk, all of the funds on their menu. We asked participants:

*“Below are the investment funds we just asked you to allocate your retirement account balance to in the last screen. Of these funds, which fund do you think will have the HIGHEST risk? And which fund do you think will have the LOWEST risk?”*

As in the allocation task, participants in Treatments 1-3 were asked to rank order ten funds, and participants in Treatment 4 were asked to rank order five funds.

The final experimental task required participants to use a graphical interface to show how much each of the funds might be worth in one year, given an initial investment of \$100,000. From each response, an approximate expected return, standard deviation of returns and probability for loss can be calculated for each individual and each asset. Collecting these data are important because portfolio theory suggests that optimal portfolio decisions should be driven by expected returns and risk.

We chose not to ask participants directly for these statistics based on the findings from studies of lay people, which show that statistics calculated from responses to graphical interfaces are more accurate than those obtained by asking participants for the statistics directly (Goldstein and Rothschild, 2014). The accuracy of these elicitation methods is supported by numerous other studies (Page, Lionel and Goldstein, 2016; Delavande and Rohwedder, 2008; Goldstein et al. 2008). We model our distribution builder on the ball and bin graph design in Delavande and Rohwedder (2008). However, we asked participants to distribute 100 balls, instead of 20, following Goldstein and Rothschild (2014). They argue that by using 100 balls, respondents can express percentages as frequencies (X out of 100). Several studies suggest that when questions about probabilities are framed in terms of natural frequencies they are better understood (Gigerenzer 1991; Goldstein et al. 2008). In addition, the subsequent analysis is simpler because we can easily represent the distribution builder outcomes as percentages. Figure 4 shows an image of our distribution builder.

Three other points deserve mention with regard to our distribution builder design. First, notice that we labelled the bin boundary points in dollars rather than percentage returns. We use dollars because previous research shows that participants with poor numeracy skills may have difficulty with percentages (Bautista et al 2011). Second, we made one of the dividing points equal to the value of the starting portfolio of \$100,000. This allows us to easily calculate the probability that the participant thinks the investment will lose money. Third, we chose the ranges of the bins so that knowledgeable participants could pick (objectively) plausible returns distributions, without excluding other valid choices. At the same time, we made the bins in the

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value of \$25 plus or minus any gains or losses you make on your chosen portfolio. The 5 year returns for the specific funds you chose will be generated using commonly accepted methods.” The panel provider drew two participants' identification numbers at random and paid them \$35.67 and \$35.15 respectively. We computed the 5-year return by bootstrapping ten years of historical monthly total returns to representative funds, weighted by the participants' experimental allocations.

middle of the distribution builder narrower than the outer bins. This gave us richer information on the range of values that are most objectively probable, and thus more precise estimates of participants' expected returns and expected variations in returns.

Returning to the survey, participants viewed the pretested instructional video prior to completing the distribution builder task. An example is shown in Figure 4. After watching the video, we asked participants:

*Suppose you have \$100,000 in retirement savings that you can invest. How much do you think the \$100,000 could be worth after one year if it is invested in a **[Insert BRAND] [Insert Fund Type] Fund**?*

*Many different outcomes are possible, with some outcomes more probable than others. Use the ball and bin chart below to indicate how likely you think each outcome is. Each ball represents a 1 in 100 chance that outcome will occur.*

Each participant built five distributions, one for each fund type described in the allocation task. Participants in Treatment 1 were asked to build distributions for high-trust branded funds, participants in Treatment 2 were asked to build distributions for low-trust branded funds, participants in Treatment 3 were asked to build distributions for employer branded funds, and participants in Treatment 4 were asked to build distributions for white-label funds.

The survey ends with several questions designed to explore participants' risk tolerance levels, personal assessment of their own investment knowledge and engagement with investment picking. We also ask the degree to which the participant trusts several different items. Using a seven point scale where 1 is "I do not trust at all" and 7 is "I trust completely," we inquire about trust in the stock market, banks, insurance companies, stock brokers, investment advisers, their employer, their employer's retirement plan, and people in general.

## **V. Results**

Table 2 reports descriptive statistics of the participants' demographics showing that the treatments are evenly balanced. These variables are used as controls in the later analyses. Table 3 shows the participants' total asset allocations to equity, bond and money market funds. In other words, the table reports the sum of participants' allocations to both branded and white-label options for each asset class. Allocations by asset class are relatively stable across treatments. In fact, with one exception, mean allocations by asset class do not significantly differ between treatments. From this, we conclude that differences in the treatment menus do not alter the participants' overall allocations (meaning brand plus white label allocations) to broad asset classes.

### **V.A. Study One**

Study One examines the difference in allocations between white-label funds and high-trust brands (Treatment 1) and white-label and low-trust brands (Treatment 2). Recall that in Treatment 1, participants allocated their investment portfolios from a menu consisting of

white-label funds and high-trust branded funds. In Treatment 2, participants allocated their investment portfolios from a menu consisting of white-label funds and low-trust branded funds.

To begin our analysis, we divide participants into three categories based on their observed allocations: those who invest everything in branded funds and nothing into the white-label funds, those who invest in both branded and white-label funds (mixed investors), and those who invest everything in white-label funds only.

Figure 5 presents the percentage of participants that fall into the three investment categories. If brand trust matters, we should observe that, relative to white-label fund investments, investors are more likely to invest in funds that are highly trusted and relatively less likely to invest in the low-trust brands. Recall that the funds are index funds without fees so, on average, allocations to either the branded fund or the white-label fund should dominate each other if brand trust matters. The results are consistent with these predictions. Within the treatments, the percentage of participants that fall into the three categories are significantly different at the 1 percent level (Significance levels are denoted by the stars above the brand-only bars). Furthermore, within the treatments, the difference in the percentage of investors invested only in the brand or only in the white-label funds is significantly different at the 1 percent level using a standard multivariate F-test for equality. The significance levels are shown above the white-label only bars. For the high trust treatment, 38 percent of the participants invest everything in the high trust brand versus 12 percent who put everything in white-labels. In contrast, only 18 percent invest everything in the low-trust brand relative to the 33 percent that put everything in the white-label. The remaining 50 percent of participants in each of these treatments- high trust and low trust-are mixed investors. Comparing across both treatments, the difference between total brand allocators is also significant at the 1 percent level. The significances across treatments are shown in the text box on the chart. We find a difference of 38 percent (high trust) versus 18 percent (low trust) when comparing these groups invested in the high-trust brand and low-trust brand. The white-label investors are also different across both treatments but the relative sizes reverse. The percentage of investors that are mixed investors are not significantly different across treatments.

Figure 6 examines the average total allocations to branded funds and white-label funds within each treatment. Once again, the results support our hypothesis that brand trust matters. The average allocation to branded funds is 64 percent in the high-trust treatment compared to 42 percent in the low-trust treatment. The text box on the chart shows that across treatments this difference is significant at the one percent level. In addition, we find that the average allocation to white-label funds in the first treatment is lower than those to the high-trust brand (36 percent to white-label versus 64 percent to high trust brand) but that this pattern reverses in the low-trust treatment (58 percent to white-label versus 42 percent to low trust brand). Again, all the differences are significant at the 1 percent level and denoted by the stars above the branded fund bars.

Figure 7 explores how mixed investors split their allocations between branded funds and white-label funds. We find an interesting pattern in brand investment suggesting that brand trust matters even to mixed investors. We broke the mixed investors allocations into three allocations bins: those investing greater than 50 percent in the branded funds, those investing 50 percent in branded funds (a 1/n strategy) and those investing less than 50 percent in branded funds. We find the percentage of 1/n investors is fairly stable across treatments and

not statistically different. However, the percentage of those investing more than 50 percent in the branded funds declines across treatments from 37 percent to 25 percent when moving from the high trust brand treatment to the low trust brand treatment. This difference is significant at the 10 percent level as denoted by the text box overlaying the chart. In contrast, the percentage of those investing less than 50 percent in the branded funds increases from 25 percent to 34 percent when moving from the high trust brand treatment to the low trust brand treatment. This difference is not significant. Both patterns are consistent with expectations if brand trust matters. Within treatments, only the difference between the percentage investing greater than 50 percent in the brand and the percentage investing less than 50 percent in the brand in the high trust treatment is statistically significant at the 10% level (significance denoted above the white-label only bar). We find the investment patterns of the mixed investor interesting. Our findings suggest that more research into this type of investor is needed.

Table 4 drills down to the asset level and examines the average allocations to each asset class. Consistent with the previous charts, the high-trust brand garners higher allocations than the white-label for every asset class. A comparison of the first two columns in the table demonstrates this fact. The differences in the mean allocations within each asset class are significant at the 1 percent level and highlighted in the third column. In contrast, for the low-trust treatment, allocations to the white-label funds are significantly higher in every asset class except the money market fund which is not significant. A comparison of the first two columns under the low trust treatment header in the table shows the differences. The significance levels range from 1 percent to 10 percent. Comparing across both treatments, the average difference in allocations between the high trust brand and the low trust brand are also significant, with the high trust brand always achieving larger allocations. The reverse holds for the white label funds. The significance of the across treatment comparisons can be found in the last two columns of the table. While Table 3 consolidated the allocations of all the equity funds into one, this table breaks down the asset allocations for each equity class. By comparing the last columns in each treatment section, it is clear that overall allocations (that is the sum of the white-label and brand investments) are similar across treatments. Therefore, consistent with Table 3, it appears that it is mainly the mix between brand and white-label allocations within each asset class that differ.<sup>4</sup>

We then examine how expected returns and risk perceptions are affected. We calculate the participants' expected returns and the expected probability that the investment will lose money based on their decisions in the distribution builder task.<sup>5</sup> Figure 8, Panel A shows the expected returns for the high-trust brand and the low-trust brand for each asset class, and Panel B shows the probability of loss for the high-trust brand and the low-trust brand for each

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<sup>4</sup> We thank Brent Davis for suggesting we examine whether mixed investors allocate their portfolios differently than white-label only and brand only investors. To explore this, we added the brand allocations and white-label allocations for each asset class to calculate a total for each treatment. We calculated these same numbers for each investor category (white-label only, brand only, mixed investors) within each treatment. Comparing these allocations within treatments and across treatments reveals that investors have similar asset allocations. preferences regardless of treatment and investor type. The full results are available from the authors on request.

<sup>5</sup> We approximate expected returns by weighting the returns implied by the mid-points of bin ranges with the probabilities set by the bin allocated.

asset class. For each asset class, the expected return is significantly higher and the expected probability of loss is lower for the high-trust brand, compared to the low-trust brand.

We test our results further by estimating a probit regression with the dependent variable equal to 1 if the participant invests everything in the brand, and zero if not. We estimate two models with several controls in Table 5. Model (1) includes the following control variables: a high-trust treatment indicator, male gender indicator, age, college plus graduate education indicator, a marriage indicator, and income above \$75,000 indicator, a white race indicator, a currently employed indicator, a high financial literacy indicator, and a past experience with assets indicator. Model (2) uses the controls in Model 1 and adds three brand control variables: brand trust (multi-item measure, median split), brand knowledge (multi-item measure, median split), brand attitude (multi-item measure, median split). We also interact each brand variable with the treatment measure. Table 5 presents the predicted probabilities. These probabilities support our earlier findings and are significantly different between the two treatments. For example, participants in the low-trust treatment are 12 percentage points on average less likely than participants in the high trust treatment to allocate all of their hypothetical retirement funds to branded options in Model 2.

In Table 6, we also estimate a GLM regression for total allocation to brand and allocation to each individual branded fund. The dependent variable in this regression is the relevant fractional allocation, that captures the variation in preferences of all participants – those who choose only options with one type of label as well as those who choose mixes of white labels and branded funds. We use the same variables as in Model (2) but for the individual asset classes we also include the participant's expectations of returns and the probability of loss derived from the distribution builder. This specification with returns and risk we call Model (3). We find a significant difference between the proportions allocated to all the asset classes except for the money market and small cap equity investments. Taken together, this analysis suggests that brand trust can be a significant factor in asset allocations.

## **V.B. Study Two**

Study two examines how adding an employer (plan sponsor) name to a white-label fund affects allocations relative to a "pure" white-label fund in Treatment 3. We hypothesize that trust in the employer matters in much the same way as brand trust mattered in the first study. We ask participants to rate the degree to which they trust their employer on a seven point scale where 1 is *"I do not trust at all"* and 7 is *"I trust completely."* We categorize participants based on their responses into three groups: Employer Trust=High (6-7), Employer Trust=Medium (5), and Employer Trust=Low(1-4).

As we observed in the first study, trust influences allocations. In Figure 9, we once again show the percentage of participants in the three investment categories: those who invest their entire portfolio in the employer brand, those that invest everything in the white-label funds and those mixed investors that invest in both. This time we break the sample into three employer trust categories. For those who have a high level of trust in their employers (N=112), 50 percent of the group invest everything in the employer brand. This compares to 38 percent in the medium-trust group (N=86) and 26 percent in the low-trust group (N=62). These percentages are significantly different at the 1 percent level across the trust groupings. See the text box overlaid on the chart for the significance levels across treatments. However, when

comparing just employer brand only investors and white-label only investors within each trust level, it is only the high-trust and medium-trust participants demonstrating a significant difference (refer to stars above branded bars for significance within trust categories). In both the high and medium trust level categories, the percentages of brand-only investors are significantly (1 percent level) greater than the percentage of white-label only investors in the same trust category. In the low-trust category, there is no significant difference between the proportion of participants who allocate all to the white-label fund and the proportion who allocate all to the employer fund.

In Figure 10, we examine the mean total allocations to the employer-branded fund by employer trust category. Consistent with results in Figure 9, the mean total allocations to the branded funds (white-label funds) fall (rise) as trust declines. In addition, within trust groups, the differences between the employer-branded fund and the pure-white-label fund are significantly different at the 1 percent level for both the high and medium employer trust categories. The stars above the branded bars display the significance. The difference in the low trust category is not significant. Across trust categories, the allocation to employer branded funds significantly differ at the 5 percent level, as do the total allocations to the white label funds across the categories. The significance levels are denoted in the text box within the table. These findings are once again consistent with the previous study and our hypothesis.

Figure 11 breaks down allocations by mixed investors into three categories: greater than 50 percent to brand, 50 percent to brand (1/n allocator) and less than 50% to brand.

Table 7 reports the allocations to each individual asset class fund. Within the high-trust category (the first section of data columns on the left of the table), the difference between the employer brand and the white-label mean allocations are significantly different at the 1 percent level. For all asset classes and in total, the employer branded fund receives higher mean allocations for the participants that highly trust their employer. For those reporting a medium level of trust in their employer, the differences in asset allocation between employer branded funds and white label funds are less strong but mean allocations to employer branded funds remain greater than white label funds in the same asset class. The differences in allocations for all asset classes but global equity are significant. For employees in the lowest employer trust category, there is not a significant difference between any of the employer fund and the white-label funds when broken down by asset class or summed in total. Looking at the two last columns on the right of the table, we do not find a significant difference in employer branded allocations across treatments for any asset category except for small equity. Similarly, when comparing white label allocations across trust categories no significant differences are found. Therefore, it appears that the separation between employer branded mean allocations and white label mean allocations grows with employer trust. Comparing total allocations to brand funds and to white-label funds by trust category (see last row of the table), significant differences in allocations are found within treatments and across treatments. Finally, as was found in Table 3 and in study one Table 4, the overall total allocations to an asset class (see the last column of each trust category) are similar across trust categories. Again, it appears that the overall allocations (brand plus white-label) do not change, instead the percentage mix of employer branded and white-label funds held within the asset class change.

Figure 12 reports the mean average expected returns (Panel A) and mean probability of loss (Panel B) for each of the asset classes. In most cases, the average expected returns are

greater for the high- and medium-trusted employers versus the low-trust employers but in one case (money market) the expected returns for the medium-trusted employers are above the high-trust. However, we cannot reject the null hypothesis that mean average returns in the three trust categories are equal, within any of the asset classes (see significance above high employer trust bars). In other words, while we measure higher expected returns for medium and high-trusted employers compared to low-trusted employers as we would expect, the differences in averages do not appear to be large. Further testing with a larger sample size could confirm or refute this finding.

As far as expected risk, the orderings are reversed for the probability of loss measures, as would be expected. The significance across treatments can be found above the higher employer trust bars. In addition, we find the hypothesis test that the average loss probabilities are similar across the three trust groups is rejected at the 10 percent level for money markets, bonds, and large equity. We do not find a significant difference between small equity and global equity across trust treatments. This again needs to be confirmed with a larger sample.

We run the same estimations as in Study One but add variables that capture the categories of employer trust. For our probit estimation (Table 8), where the dependent variable equals 1 if the participant allocates their entire portfolio to employer-named funds, we find that the predicted probabilities from the regressions are all significant. We observe large differences in these predicted probabilities. It is predicted in model (2) that 47 percent of participants will put everything into high-trust employer funds compared to 24 percent of participants in the low employer trust category. Only the differences in predicted probabilities between the high-employer-trust category and low-employer-trust category are significant. We do not find a difference between high- and medium-employer-trust categories or medium- and low-employer-trust categories.

When examining the allocations to employer-labelled asset classes, the predicted means generated from the GLM estimation again are all significant. Table 9 shows the fraction of total assets to the employer brands follow the expected pattern, as do the money market funds. However, the patterns are less predictable for the other assets. We test the difference in means and find for the fraction of all the assets, the fraction of money market investments and the fraction of large equity, the difference between the predicted mean allocations to high-employer-trust funds and low-employer-trust funds is significant and in the right directions (high employer trust allocation > low employer trust allocation). We find no difference in allocations to bonds and small equity. In addition, the global equity findings predict that low-employer-trust global funds will have a higher allocation than medium trust. Again, these results are not as strong as found in Study One but are broadly consistent. Additional experiments with a larger sample sizes are required to confirm or refute the findings.

## **VI. Conclusion**

Finance theory assumes that investors maximize risk-adjusted returns when choosing portfolios. In reality, people are also influenced by irrelevant factors, including cosmetic changes to investment fund names. As retirement plans adopt generic, or white-label, investment options into their menus, this study explores how plan participants react to white-label and branded options, and, specifically, how brand trust alters participants' allocations to options.

We find that brand trust plays a large role in asset allocations. Our experimental studies show that plan participants allocate significantly more to trusted brands when choosing between otherwise equivalent investment options. Specifically, in study one we find that options showing highly-trusted brand names are more attractive than equivalent white-label options, and that the reverse holds for poorly-trusted brand names. It follows that highly-trusted brands can capitalize by displaying their names on investment options while less-trusted brands could consider generic labelling.

In a second study, we explore how including an employer's name with a white-label option can affect investments. We find options showing the names of highly-trusted employers are more attractive to plan participants than equivalent white-label options. It follows that more trusted employers could consider adding their names to white-label options, whereas less trusted employers may need to consider more general labeling.

Finally, in both studies we find evidence that participants expect higher risk-adjusted returns and lower risk from options that display the name of a highly-trusted brand or highly-trusted employer. This is an interesting and potentially important implication of our findings because it suggests that how funds are labeled may affect how much income individuals think they need to save for retirement. The effects in Study Two are not as strong as Study One, but sample size in the second experiment could be an issue. Further experiments are needed here to confirm or refute this finding.

In sum, our research has important implications for plan sponsors and investment companies. Our study provides further evidence that menu design matters and that careful consideration must be given before introducing new options into plan menus. In addition, the naming of fund options is not a trivial task. Our study also highlights the importance of fund branding and brand trust and demonstrates the potential impact on fund flows. While naming white label funds after the employer is a common practice among retirement plans (Bare et al, 2017), this paper provides for the first time guidance to companies regarding whether or not adding their name to their brand label options will hurt or promote flows to their funds.

Finally, our work opens up many future avenues of research. First, we hope to test our findings using administrative data. Second, there are several additional experiments that we would like to conduct. For example, while our current study allows us to make predictions regarding how new employees will make allocations to branded and white label options, the current experimental design does not allow us to test how existing participants might change their allocation if white label funds are added to the menu. Examining a sequential allocation choice like this in a new experiment is an interesting idea for future research. Given so many people are already members of retirement plans and have made allocation choices, understanding how they will react to their plan adding white label options is important. Finally, we plan to explore whether overall allocations across the asset classes in retirement plans might be altered by menus that offer only branded funds in specific asset classes and only white-label options in others (see a real world example in Figure 1). In this paper, overall allocations were steady across treatments but it is important to note that participants always had a choice of one branded fund and one white-label fund within each asset class. It is not clear when this is not the case whether overall allocations might be altered.

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**Table 1. Treatment Group Sample Sizes**

<b>Treatment</b>	<b>Study</b>	<b>Description</b>	<b>N</b>
1	1	High Trust Brand versus White-label	233
2	1	Low Trust Brand versus White-label	231
3	2	Employer Branded White-label versus White-label	260
4	Control	White-label Only	228

**Table 2. Descriptive Statistics by Treatment**

	All		Treatment 1 High Trust Treatment		Treatment 2 Low Trust Treatment		Treatment 3 Branded White Label		Treatment 4 Pure White Label	
	Count	%	Count	%	Count	%	Count	%	Count	%
<b>N</b>	952		233		231		260		228	
<b>Male</b>	474	50%	121	52%	118	51%	134	52%	101	44%
<b>Married</b>	637	67%	169	73%	146	63%	169	65%	153	67%
<b>Age</b>										
19 to 29 years old	35	4%	5	2%	12	5%	9	3%	9	4%
30 to 39 years old	225	24%	56	24%	47	20%	75	29%	47	21%
40 to 49 years old	279	29%	73	31%	72	31%	66	25%	68	30%
50 to 59 years old	266	28%	65	28%	66	29%	66	25%	69	30%
60 to 70 years old	132	14%	31	13%	30	13%	40	15%	31	14%
70 to 80 years old	14	1%	3	1%	4	2%	4	2%	3	1%
Missing	1	0%	0	0%	0	0%	0	0%	1	0%
<b>Total</b>	<b>951</b>	<b>100%</b>	<b>233</b>	<b>100%</b>	<b>231</b>	<b>100%</b>	<b>260</b>	<b>100%</b>	<b>228</b>	<b>100%</b>
<b>Education</b>										
Less than High School	15	2%	1	0%	1	0%	4	2%	9	4%
High School	123	13%	37	16%	24	10%	28	11%	34	15%
Some College	168	18%	39	17%	49	21%	41	16%	39	17%
College (Assoc. or Bachel	443	47%	92	39%	120	52%	133	51%	98	43%
Post Graduate Degree	203	21%	64	27%	37	16%	54	21%	48	21%
<b>Total</b>	<b>952</b>	<b>100%</b>	<b>233</b>	<b>100%</b>	<b>231</b>	<b>100%</b>	<b>260</b>	<b>100%</b>	<b>228</b>	<b>100%</b>
<b>Household Income</b>										
Less than \$5,000	5	1%	2	1%	0	0%	1	0%	2	1%
\$5,000 to \$7,499	1	0%	1	0%	0	0%	0	0%	0	0%
\$7,500 to \$9,999	3	0%	2	1%	1	0%	0	0%	0	0%
\$10,000 to \$12,499	6	1%	0	0%	2	1%	0	0%	4	2%
\$12,500 to \$14,999	6	1%	1	0%	2	1%	2	1%	1	0%
\$15,000 to \$19,999	10	1%	1	0%	0	0%	4	2%	5	2%
\$20,000 to \$24,999	21	2%	4	2%	5	2%	5	2%	7	3%
\$25,000 to \$29,999	25	3%	8	3%	5	2%	5	2%	7	3%
\$30,000 to \$34,999	37	4%	8	3%	9	4%	9	3%	11	5%
\$35,000 to \$39,999	40	4%	8	3%	7	3%	16	6%	9	4%
\$40,000 to \$49,999	62	7%	13	6%	20	9%	16	6%	13	6%
\$50,000 to \$59,999	87	9%	22	9%	30	13%	16	6%	19	8%
\$60,000 to \$74,999	114	12%	32	14%	32	14%	32	12%	18	8%
\$75,000 to \$99,999	173	18%	43	18%	42	18%	44	17%	44	19%
\$100,000 to \$149,999	212	22%	50	21%	46	20%	73	28%	43	19%
\$150,000 or more	149	16%	38	16%	30	13%	36	14%	45	20%
Missing	1	0%	0	0%	0	0%	1	0%	0	0%
<b>Total</b>	<b>952</b>	<b>100%</b>	<b>233</b>	<b>100%</b>	<b>231</b>	<b>100%</b>	<b>260</b>	<b>100%</b>	<b>228</b>	<b>100%</b>
<b>Race</b>										
White	809	85%	201	86%	195	84%	226	87%	187	82%
Black	71	7%	17	7%	17	7%	17	7%	20	9%
Other	70	7%	14	6%	18	8%	17	7%	21	9%
Missing	2	0%	1	0%	1	0%	0	0%	0	0%
<b>Total</b>	<b>950</b>	<b>100%</b>	<b>233</b>	<b>100%</b>	<b>231</b>	<b>100%</b>	<b>260</b>	<b>100%</b>	<b>228</b>	<b>100%</b>
<b>Labor Status</b>										
Currently Working	948	100%	233	100%	229	99%	258	99%	228	100%
On Sick or Other Leave	1	0%	0	0%	1	0%	0	0%	0	0%
Unemployed-Looking	2	0%	0	0%	0	0%	2	1%	0	0%
Retired	1	0%	0	0%	1	0%	0	0%	0	0%
<b>Total</b>	<b>952</b>	<b>100%</b>	<b>233</b>	<b>100%</b>	<b>231</b>	<b>100%</b>	<b>260</b>	<b>100%</b>	<b>228</b>	<b>100%</b>

**Table 3. Allocations to Broad Asset Types by Treatment**

Participant Allocation (Equities, Bonds, Money Markets)	Average Investment in Asset Types			
	High-Trust Brand	Low-Trust Brand	Employer Branded	Pure White Label
	Treatment 1	Treatment 2	Treatment 3	(Control)
Allocation to Equity Funds	58%	58%	60%	56%
Allocation to Bond Funds	14%	14%	14%	14%
Allocation to Money Market Funds	27%	28%	26%	30%
Total	100%	100%	100%	100%

Hypothesis Tested	Allocation to Equity Funds	Allocation to Bond Funds	Allocation to Money Market Funds
	H0: Mean High Trust=Mean Low Trust=Mean Employer Brand=Mean Control	NS	NS
H0: Mean High Trust=Mean Control	NS	NS	NS
H0: Mean Low Trust=Mean Control	NS	NS	NS
H0: Mean Employer Brand =Mean Control	NS	NS	*

NS Not Significant\*\*\*Reject the null at the 1% level \*\*Reject the null at the 5% level, \*Reject the null at the 10% level

**Table 4: Study 1- Mean Allocations to Each Fund**

Fund Allocation	Mean Allocations to Each Fund & Within-Treatment Comparisons								Across Treatment Comparisons	
	High Trust Treatment (N=233)				Low Trust Treatment (N=231)				High Trust Brand v. Low Trust Brand	White-Label v. Low Trust White-Label
	High Trust Brand	White-Label	High Trust v. White-Label	Total: White-Label & Brand	Low Trust Brand	White-Label	Low Trust v. White-Label	Total: White-Label & Brand		
Money Market	17%	10%	a	27%	12%	15%		28%	b	a
Bond	10%	5%	a	14%	6%	8%	c	14%	a	a
Large Equity	18%	9%	a	26%	11%	15%	a	26%	a	a
Small Equity	10%	6%	a	16%	8%	10%	c	18%	b	a
Global Equity	9%	6%	a	16%	5%	9%	a	14%	a	a
Total Allocations	64%	36%	a		42%	58%	a		a	a

Note: "a" denotes significance ( $p \leq .01$ ), "b" denotes significance ( $p \leq .05$ ), "c" denotes significance ( $p \leq .1$ ), a blank denotes non-significance ( $p > .1$ )

**Table 5. Study 1- Average Predicted Probabilities from Probit Estimation**

**Dependent Variable: Allocates Everything to Brand Funds**

	(1) Allocates Everything to Brand Funds	(2) Allocates Everything to Brand Funds
High-Trust Brand Treatment	0.383*** (0.0317)	0.344*** (0.0307)
Low-Trust Brand Treatment	0.182*** (0.0254)	0.226*** (0.0302)
Difference in Predicted Probabilities (Low-Trust minus High-Trust)	-0.201*** (0.0409)	-0.118*** (.04322)
<i>N</i>	462	461

Standard errors in parentheses. Delta-Method Standard errors in difference test.

Model (1) Includes the following variables: treatment (indicator), gender (indicator), age, college plus graduate (indicator) married (indicator), income above \$75,000 (indicator), white (indicator), working (indicator), high financial literacy (indicator), past experience with assets indicator

Model (2) Includes variables from Model (1) and brand trust (multi-item measure, median split), brand knowledge (multi-item measure, median split), brand attitude (multi-item measure, median split). The brand variables are also interacted with the treatment measure.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 6. Study 1- Model (3)-Predicted Means from GLM Estimation**

**Dependent Variables: Fraction to Each Brand Asset With Brand Controls and Interactions**

	(1) All Brand Assets	(2) Money Market	(3) Bond	(4) Large Equity	(5) Small Equity	(6) Global Equity
High-Trust Brand Treatment	0.606 <sup>***</sup> (0.0237)	0.166 <sup>***</sup> (0.0147)	0.0905 <sup>***</sup> (0.00978)	0.165 <sup>***</sup> (0.0127)	0.0982 <sup>***</sup> (0.00725)	0.0902 <sup>***</sup> (0.00678)
Low-Trust Brand Treatment	0.483 <sup>***</sup> (0.0230)	0.141 <sup>***</sup> (0.0139)	0.0678 <sup>***</sup> (0.00788)	0.122 <sup>***</sup> (0.0107)	0.0963 <sup>***</sup> (0.00933)	0.0563 <sup>***</sup> (0.00561)
Difference in Predicted Means (Low Trust-High Trust)	-0.124 <sup>***</sup> (0.0331)	-0.024 (0.0208)	-0.023 <sup>*</sup> (0.0122 )	-0.043 <sup>**</sup> (0.0174)	-0.002 (0.0115 )	-0.034 <sup>***</sup> ( 0.009)
<i>N</i>	461	461	461	461	461	461

Standard errors in parentheses

Model (3) Includes variables from Model (2) in Table 4 plus for asset specific specifications (2) –(6) the expected return for the specific asset class and the probability of loss generated from the distribution builder exercise are included as independent variables.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 7. Study 2- Mean Allocations to Each Fund**

Fund Allocation	Mean Allocations to Each Fund Within Trust Categories and Significance Tests											Across Trust Categories	
	Employer Trust High (6-7) (N=112)				Employer Trust Medium (5) (N=86)				Employer Trust Low (1-4) (N=62)			Employer Branded v. Employer Branded	White-Label v. White-Label
	Employer Branded	White-Label	Employer Branded v. White-Label	Total: White-Label & Employer Branded	Employer Branded	White-Label	Employer Branded v. White-Label	Total: White-Label & Employer Branded	Employer Branded	White-Label	Total: White-Label & Employer Branded		
Money Market	20%	6%	a	26%	16%	9%	c	25%	14%	12%	26%		
Bond	9%	4%	a	13%	10%	5%	b	15%	9%	7%	15%		
Large Equity	18%	10%	a	27%	18%	13%	c	31%	15%	13%	27%		
Small Equity	11%	6%	a	18%	10%	6%	b	17%	8%	9%	17%	c	
Global Equity	10%	5%	a	16%	7%	5%		12%	9%	7%	15%		
Total Allocations	69%	31%	a	100%	62%	38%	a	100%	53%	47%	100%	a	b

Note: "a" denotes significance (p<=.01), "b" denotes significance (p<=.05), "c" denotes significance (p<=.1), a blank denotes non-significance (p>.1)

**Table 8. Study 2- Average Predicted Probabilities from Probit Estimation**

<b>Dependent Variable: Allocates Everything to Employer Named Funds</b>		
	(1)	(2)
	Allocates Everything to Employer Named Funds	Allocates Everything to Employer Named Funds
Employer Trust Low (1-4)	0.254*** (0.0551)	0.238** (0.0778)
Employer Trust Medium (5)	0.387*** (0.0516)	0.368*** (0.0526)
Employer Trust High (6-7)	0.500*** (0.0468)	0.471*** (0.0569)
Difference in Predicted Probabilities (Trust High minus Trust Medium)	0.113 (0.0699)	0.104 (0.0779)
(Trust Medium minus Trust Low)	0.133 (0.0755)	0.130 (0.0940)
(Trust High minus Trust Low)	0.246*** (0.0732)	0.233** (0.0971)
<i>N</i>	260	259

Standard errors in parentheses

Model (1) Includes the following variables: treatment (indicator), gender (indicator), age, college plus graduate (indicator) married (indicator), income above \$75,000 (indicator), white (indicator), working (indicator), high financial literacy (indicator), past experience with assets indicator

Model (2) Includes variables from Model (1) and brand trust (multi-item measure, median split), brand knowledge (multi-item measure, median split), brand attitude (multi-item measure, median split). The brand variables are also interacted with the treatment measure.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 9. Study 2- Model (3)-Predicted Means from GLM Estimation**

<b>Dependent Variables: Fraction to Each Employer Named Asset</b>						
	(1) All Employer Assets	(2) Money Market	(3) Bond	(4) Large Equity	(5) Small Equity	(6) Global Equity
Employer Trust Low (1-4)	0.550*** (0.0525)	0.122*** (0.0208)	0.109*** (0.0258)	0.113*** (0.0169)	0.0899*** (0.0175)	0.129*** (0.0313)
Employer Trust Medium (5)	0.615*** (0.0391)	0.163*** (0.0219)	0.0890*** (0.0131)	0.188*** (0.0195)	0.110*** (0.0119)	0.0721*** (0.0101)
Employer Trust High (6-7)	0.686*** (0.0386)	0.206*** (0.0292)	0.109*** (0.0185)	0.182*** (0.0218)	0.0997*** (0.0106)	0.0902*** (0.0117)
Difference in Predicted Means (Trust High -Trust Medium)	0.065 (0.0651 )	0.044 (0.0368)	0.020 (0.0228)	-0.006 (0.0286 )	-0.010 (0.0159)	0.018 (0.0153)
(Trust Medium-Trust Low)	0.071 (0.0556)	0.041 (0.0305 )	-0.020 (0.0294)	0.074*** (0.0267)	0.020 (0.0211)	-0.057* (0.0323)
(Trust High-Trust Low)	0.136** (0.0657)	0.085** (0.0370)	-0.000 (0.0321)	0.068** (0.029)	0.010 (0.0207 )	-0.057 (0.032)
<i>N</i>	259	259	259	259	259	259

Standard errors in parentheses. Differences in predicted means are rounded to three digits.

Model (3) Includes variables from Model (2) in Table specifications 2-6 the expected return and probability of loss generated from the distribution builder exercise.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Figure 1. Portion of Investment Options offered by New York State Deferred Compensation Plan<sup>6</sup>**



DO IT YOURSELF INVESTMENT OPTIONS

Category	Option Name	Investment Option Type	Gross Expense Ratio	Net Expense Ratio*
Stable Income	NYSDCP Stable Income Fund	Custom Fund	0.35%	0.35%
Bond Market Index	NYSDCB US Debt Index Unitized Account	CIT	0.0198%	0.0198%
Bond Fund	Voya Core Plus Trust Fund	CIT	0.23%	0.23%
Balanced Fund	Vanguard Wellington Fund—Admiral	Mutual Fund	0.16%	0.16%
S&P 500 Index (Large-Cap Blend)	NYSDCB Equity Index Unitized Account	CIT	0.0084%	0.0084%
Large-Cap Value	T. Rowe Price Equity Income Trust	CIT	0.33%	0.33%
	Boston Partners Large-Cap-Value Equity Fund	CIT	0.67%	0.67%
Large-Cap Growth	Vanguard PRIMECAP Fund— Admiral	Mutual Fund	0.33%	0.33%
	T. Rowe Price Blue Chip Growth Trust	CIT	0.40%	0.40%
Small/Mid-Cap Index Fund (SMID)	NYSDCB Russell 2500 Index Unitized Account	CIT	0.0225%	0.0225%
SMID Core	Vanguard Strategic Equity Fund—Investor	Mutual Fund	0.18%	0.18%
Small-Cap Value	Delaware Small-Cap Value Fund—Inst.	Mutual Fund	0.96%	0.71%
Small-Cap Growth	T. Rowe Price QM US Small-Cap Growth Equity Fund—Inst.	Mutual Fund	0.66%	0.66%
International Funds	NYSDCP International Equity Active Fund	Custom Fund	0.60%	0.60%
	NYSDCP International Equity Index Fund	Custom Fund	0.20%	0.20%
International Emerging Markets	Morgan Stanley Emerging Markets Portfolio—Inst.	Mutual Fund	0.95%	0.95%

<sup>6</sup> For more information about all of this plans' options, see [https://www.nysdcp.com/tcm/nysdcp/static/NYSDCP\\_Quarterly\\_2017-2Q.pdf?r=1](https://www.nysdcp.com/tcm/nysdcp/static/NYSDCP_Quarterly_2017-2Q.pdf?r=1).

## Figure 2. Screen Shots of Fund Description Pages in Survey

### Panel A. Study 1- High/Low Trust Brand versus White-Label Fund Description Page

**Important Note: All fees related to all fund investments have been waived.**

On the next page, you will be asked to allocate your retirement funds to different types of mutual funds. Mutual funds are investments that pool money together from investors to purchase a collection of stocks, bonds, and/or other investment products. A portfolio manager typically oversees the investments.

You can choose among several mutual funds invested in different asset types. They are described below.

#### Mutual Fund Asset Type Descriptions

- **Money Market Funds:** These funds aim to earn interest for investors while protecting the value of the original investment. They hold different combinations of short-term (less than one year), high quality, liquid government and corporate U.S. dollar investments.
- **U.S. Bond Funds:** These funds mainly hold fixed income investments, including bonds issued by the U.S. Government, corporate bonds and other forms of debt backed by mortgages or other assets.
- **Large Cap U.S. Funds:** These funds invest in U.S. stocks issued by relatively large companies. Stocks from the largest 70 percent of firms, when firm size is measured by the number of shares times the market price of shares, are usually classified as large-cap stocks.
- **Small Cap U.S. Funds:** These funds invest in U.S. stocks issued by relatively small companies. Stocks from the smallest 10 percent of firms, when firm size is measured by the number of shares times the market price of shares, are usually classified as small-cap stocks.
- **Global Funds:** These funds invest in stocks of established companies operating around the world. Funds can also restrict investments to companies operating in specific global regions. A fund investing in companies located only outside of the United States is an example. Investments are diversified among many countries and industries.

#### Mutual Fund Names

The funds that you can choose from may be managed by one or more portfolio managers.

If you see the name of a professional investment company preceding the fund name, the fund is managed by that company.

If you see "White Label" preceding the fund name, this means the fund has been put together for your employer's retirement plan and given a generic name. The fund may include one or more mutual funds which hold the same type of investment.

## Panel B. Study 2- Employer Brand versus White-Label Fund Description Page in Survey

**Important Note: All fees related to all fund investments have been waived.**

On the next page, you will be asked to allocate your retirement funds to different types of mutual funds. Mutual funds are investments that pool money together from investors to purchase a collection of stocks, bonds, and/or other investment products. A portfolio manager typically oversees the investments.

You can choose among several mutual funds invested in different asset types. They are described below.

### Mutual Fund Asset Type Descriptions

- **Money Market Funds:** These funds aim to earn interest for investors while protecting the value of the original investment. They hold different combinations of short-term (less than one year), high quality, liquid government and corporate U.S. dollar investments.
- **U.S. Bond Funds:** These funds mainly hold fixed income investments, including bonds issued by the U.S. Government, corporate bonds and other forms of debt backed by mortgages or other assets.
- **Large Cap U.S. Funds:** These funds invest in U.S. stocks issued by relatively large companies. Stocks from the largest 70 percent of firms, when firm size is measured by the number of shares times the market price of shares, are usually classified as large-cap stocks.
- **Small Cap U.S. Funds:** These funds invest in U.S. stocks issued by relatively small companies. Stocks from the smallest 10 percent of firms, when firm size is measured by the number of shares times the market price of shares, are usually classified as small-cap stocks.
- **Global Funds:** These funds invest in stocks of established companies operating around the world. Funds can also restrict investments to companies operating in specific global regions. A fund investing in companies located only outside of the United States is an example. Investments are diversified among many countries and industries.

### Mutual Fund Names

If you see the initials of your employer preceding the fund name, this means the fund has been put together for your employer's retirement plan. The fund may include one or more mutual funds which hold the same type of investment.

If you see "White Label" preceding the fund name, this means the fund has been put together for your employer's retirement plan and given a generic name. The fund may include one or more mutual funds which hold the same type of investment.

### Figure 3. Screenshot of Allocation Page in Survey

This is an example of an allocation page where the participant must choose between a white-label fund and a white-label fund “branded” with the employer’s name, W&M.

[Click here to see the Mutual Fund Asset Type Descriptions](#)

**Important Note: All fees related to all fund investments have been waived.**

Please allocate your retirement account balance among any of the investment options listed below. You may enter any whole number between 0 and 100 for any of the options below, but the sum of all the numbers must be 100. Please type the percentage you wish to allocate to each investment option.

As an incentive to choose carefully, we will reward two randomly selected participants with a bonus. If you are selected, you will earn money based on the investment choices you make in this task. For more information on the prize calculation, [click here](#).

<b>Money Market Funds</b> <input type="text"/> % White Label Money Market Fund <input type="text"/> % W&M Money Market Fund	<b>U.S. Small Cap Funds</b> <input type="text"/> % White Label Small Cap U.S. Index Fund <input type="text"/> % W&M Small Cap U.S. Index Fund
<b>U.S. Bond Funds</b> <input type="text"/> % White Label U.S. Bond Index Fund <input type="text"/> % W&M U.S. Bond Index Fund	<b>Global Funds</b> <input type="text"/> % White Label Non U.S. Global Stock Index Fund <input type="text"/> % W&M Non U.S. Global Stock Index Fund
<b>U.S. Large Cap Funds</b> <input type="text"/> % White Label Large Cap U.S. Index Fund <input type="text"/> % W&M Large Cap U.S. Index Fund	<b>Total</b> 0 %

## Figure 4. Screenshot of Distribution Builder in Survey

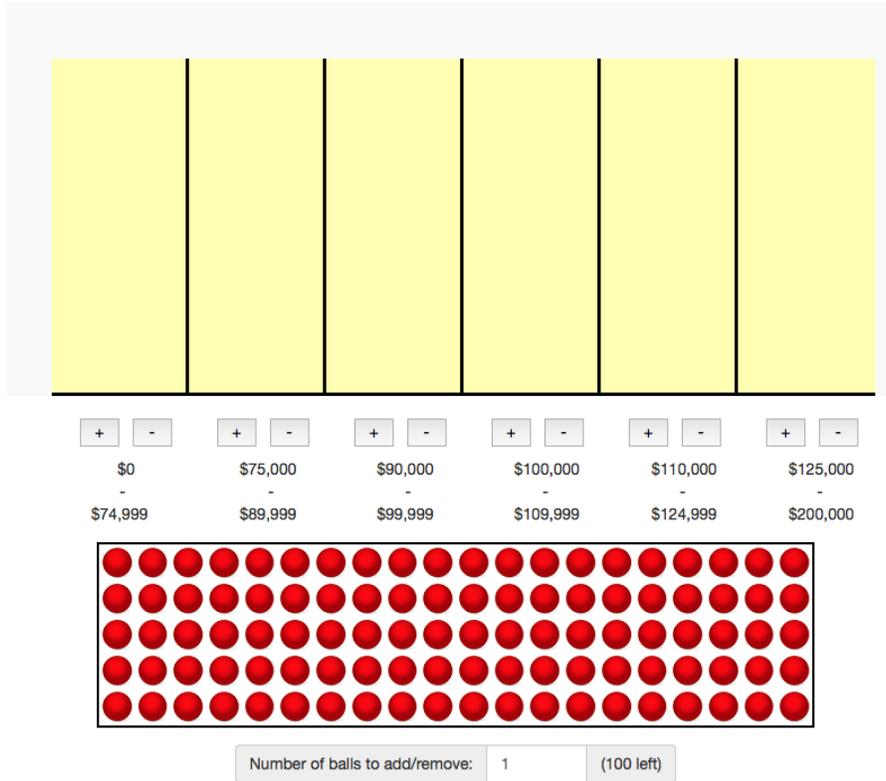
[Click here to see the Mutual Fund Asset Type Descriptions](#)

[Click here if you would like to review the video instructions](#)

**Important Note: All fees related to all fund investments have been waived.**

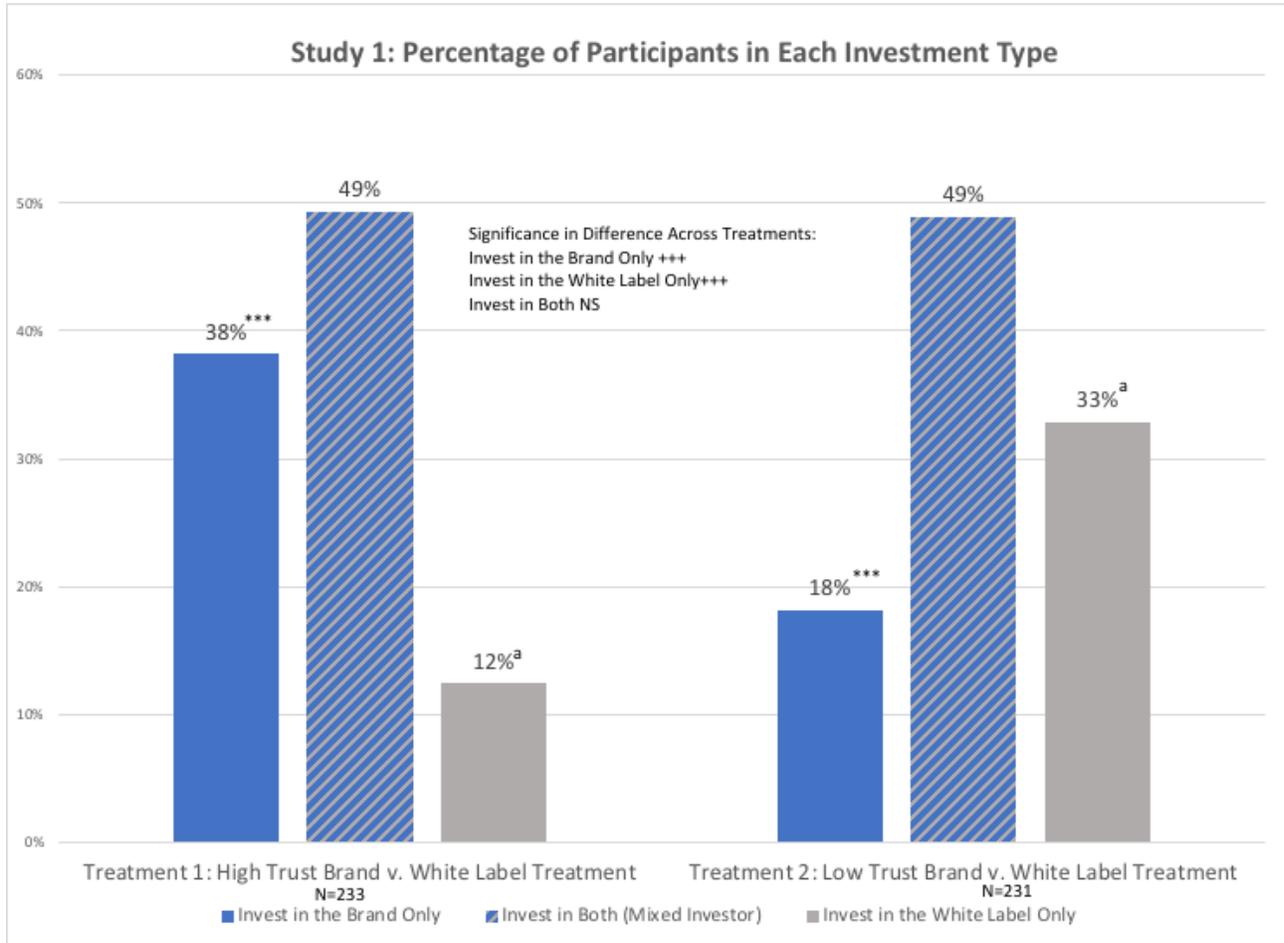
Suppose you have \$100,000 in retirement savings that you can invest. How much do you think the \$100,000 could be worth after one year if it is invested in a **W&M Money Market Fund**?

Many different outcomes are possible, with some outcomes more probable than others. Use the ball and bin chart below to indicate how likely you think each outcome is. Each ball represents a 1 in 100 chance that outcome will occur.



**Figure 5. Study 1- Percentage of Participants in the Three Investment Types (Brand Only, Mixed Investor or White-Label Only)**

Panel A:



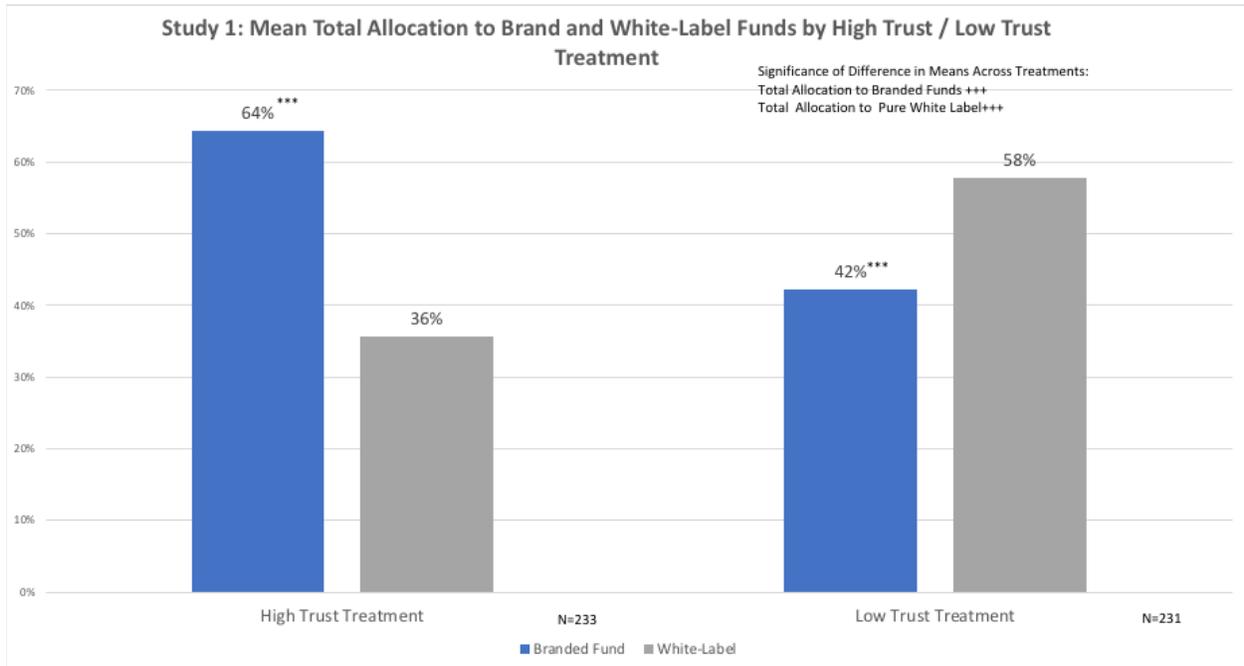
Notes:

Stars above the brand only solid blue bars report the significance of within treatment tests of the differences between the percentage of participants in each investor type. NS Not Significant \*\*\*Significant at the 1% level \*\*Significant at the 5% level, \*Significant at the 10% level.

Letters above the white-label only gray bars report the significance of within treatment tests of the differences between the percentage of brand only investors and the percentage of white-label only investors. NS Not Significant "a" Significant at the 1% level "b" Significant at the 5% level, "c" Significant at the 10% level.

The text box overlaid on the table reports the significance of differences across treatments related to investor types (Brand only v. Brand only ; White-label v. White-label, Mixed v. Mixed): NS Not Significant,+++Significant at the 1% level, ++Significant at the 5% level, +Significant at the 10% level.

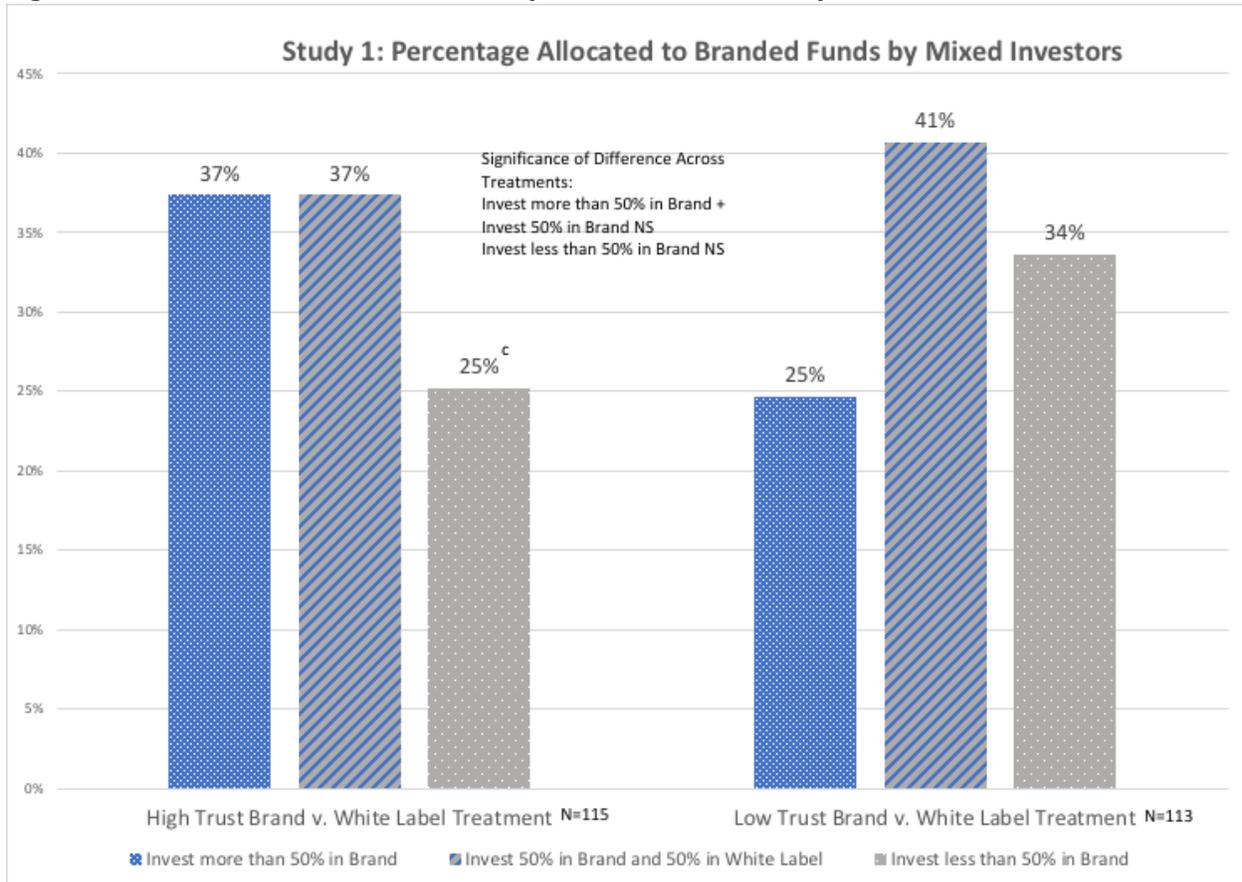
**Figure 6. Study 1-Total Allocations to Brand and White-Label Funds**



Notes: Stars above the branded fund solid blue bars report the significance of within treatment tests of the differences between the mean allocations to branded funds and white-label funds. NS Not Significant\*\*\*Significant at the 1% level \*\*Significant at the 5% level, \*Significant at the 10% level.

The text box overlaid on the table reports the significance of differences in mean allocations across treatments comparing brand v. brand and white label v. white label. NS Not Significant,+++Significant at the 1% level, ++Significant at the 5% level, +Significant at the 10% level.

**Figure 7. Allocation to Branded Funds by Mixed Investors Only**



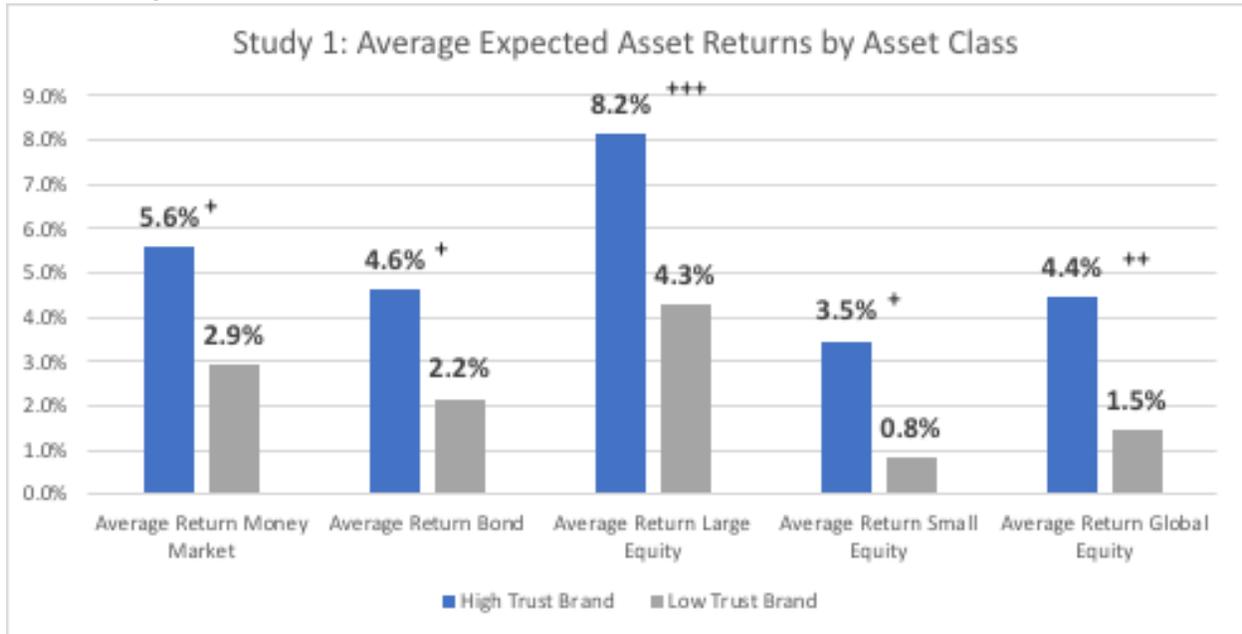
Notes: Stars above the greater than 50% blue bars report the significance of within treatment tests of the differences between percentage of mixed investors in each of the three brand investment categories (Greater than 50%, Equal to 50%, Less than 50%) NS Not Significant\*\*\*Reject the null at the 1% level \*\*Reject the null at the 5% level, \*Reject the null at the 10% level

Pluses (+) above the less than 50% gray bars report the significance of within treatment tests of the differences between percentage of mixed investors in two of the brand investment categories ((Greater than 50% v. Less than 50%): NS Not Significant" a" reject the null at the 1% level "b" Reject the null at the 5% level, "c" Reject the null at the 10% level

The text box overlaid on the table reports the significance of differences across treatments of similar investment ranges (Greater than 50% v. Greater than 50%; Equal to 50% v. Equal to 50%, Less than 50% v. Less than 50%): NS Not Significant+++Reject the null at the 1% level ++Reject the null at the 5% level, +Reject the null at the 10% level

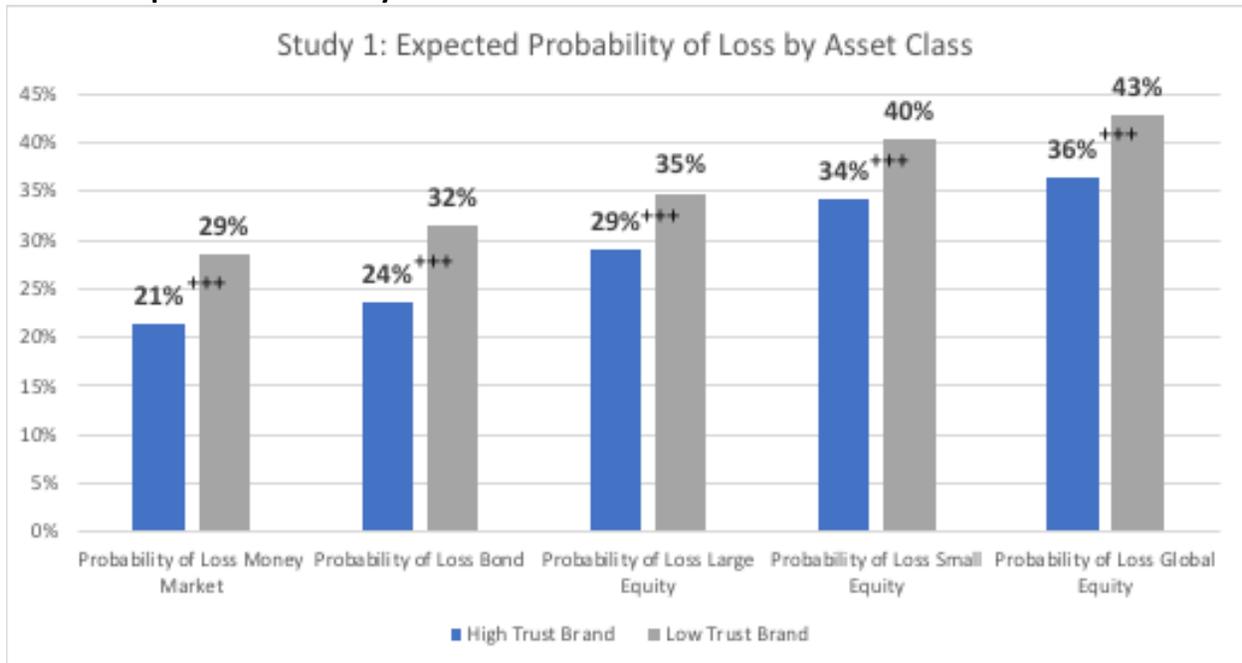
**Figure 8. Study 1-Means of Expected Return and Risk Measures Calculated from Distribution Builder Task**

**Panel A. Expected Returns**



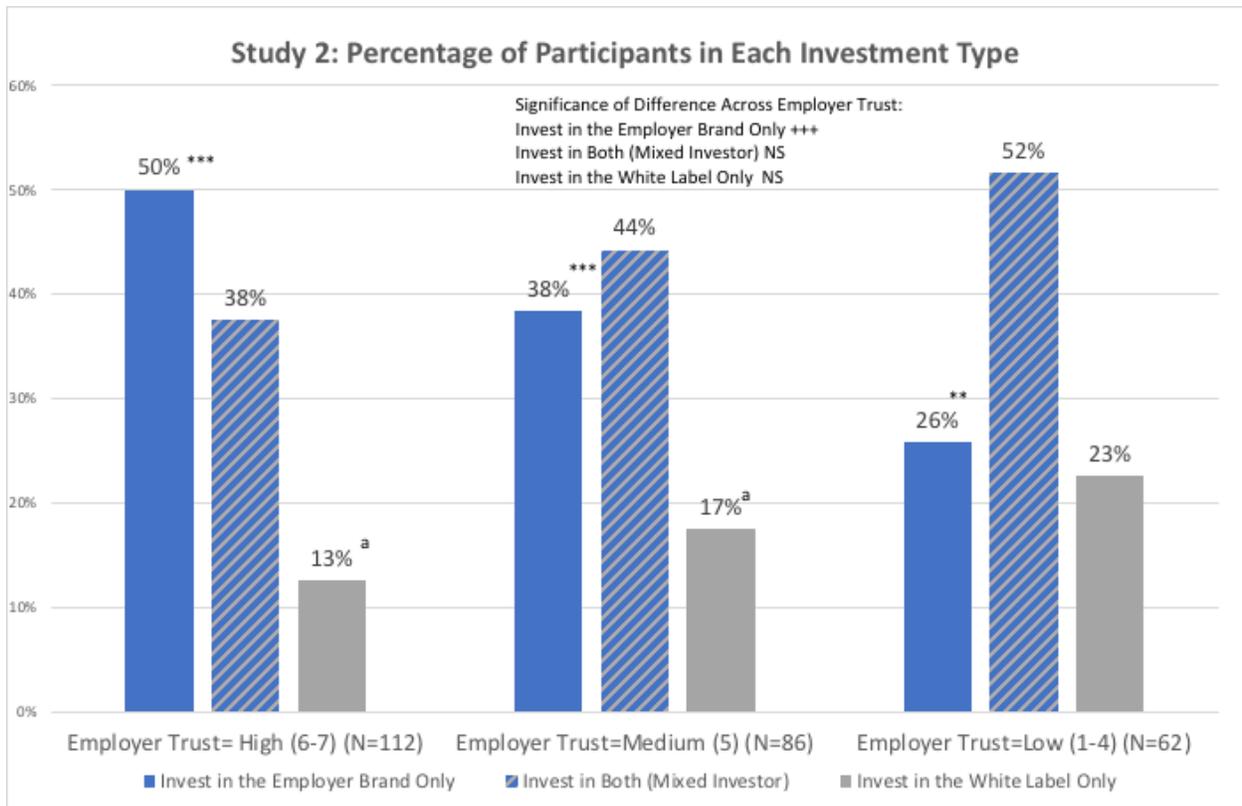
Notes: The pluses (+) above the high trust fund solid blue bars report the significance of the across treatment tests of the differences between the average expected asset returns to branded funds and white-label funds. NS Not Significant,+++Significant at the 1% level, ++Significant at the 5% level, + Significant at the 10% level.

**Panel B. Expected Probability of Loss**



Notes: The pluses (+) above the high trust fund solid blue bars report the significance of the across treatment tests of the differences between the expected probability of loss to branded funds and white-label funds. NS Not Significant,+++Significant at the 1% level, ++Significant at the 5% level, + Significant at the 10% level.

**Figure 9: Study 2- Percentage of Participants in Each Investment Type (All Brand or All White-Label)**

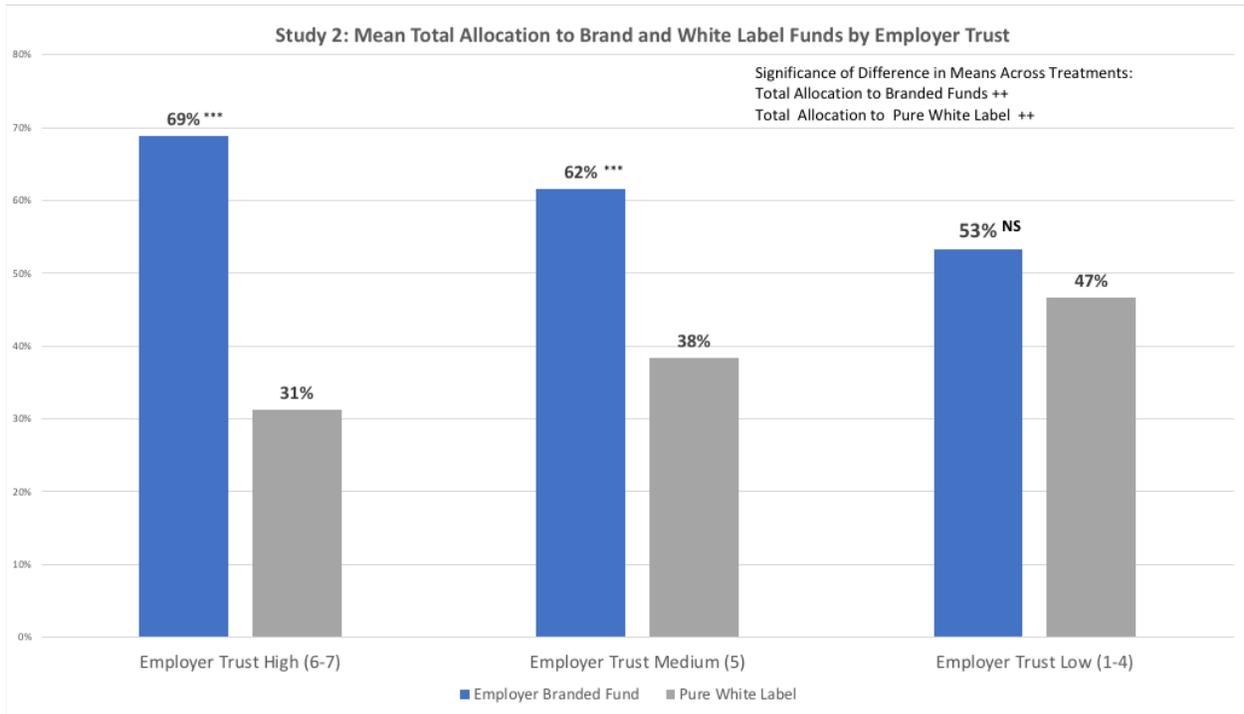


Notes: Stars above the brand only solid blue bars report the significance of within trust category tests of the differences between the percentage of participants in each investor type. NS Not Significant \*\*\*Significant at the 1% level \*\*Significant at the 5% level, \*Significant at the 10% level.

Letters above the white-label only gray bars report the significance of within trust categories tests of the differences between the percentage of brand only investors and the percentage of white-label only investors. NS Not Significant "a" Significant at the 1% level "b" Significant at the 5% level, "c" Significant at the 10% level.

The text box overlaid on the table reports the significance of differences across treatments related to investor types (Brand only v. Brand only ; White-label v. White-label, Mixed v. Mixed): NS Not Significant, +++Significant at the 1% level, ++Significant at the 5% level, +Significant at the 10% level.

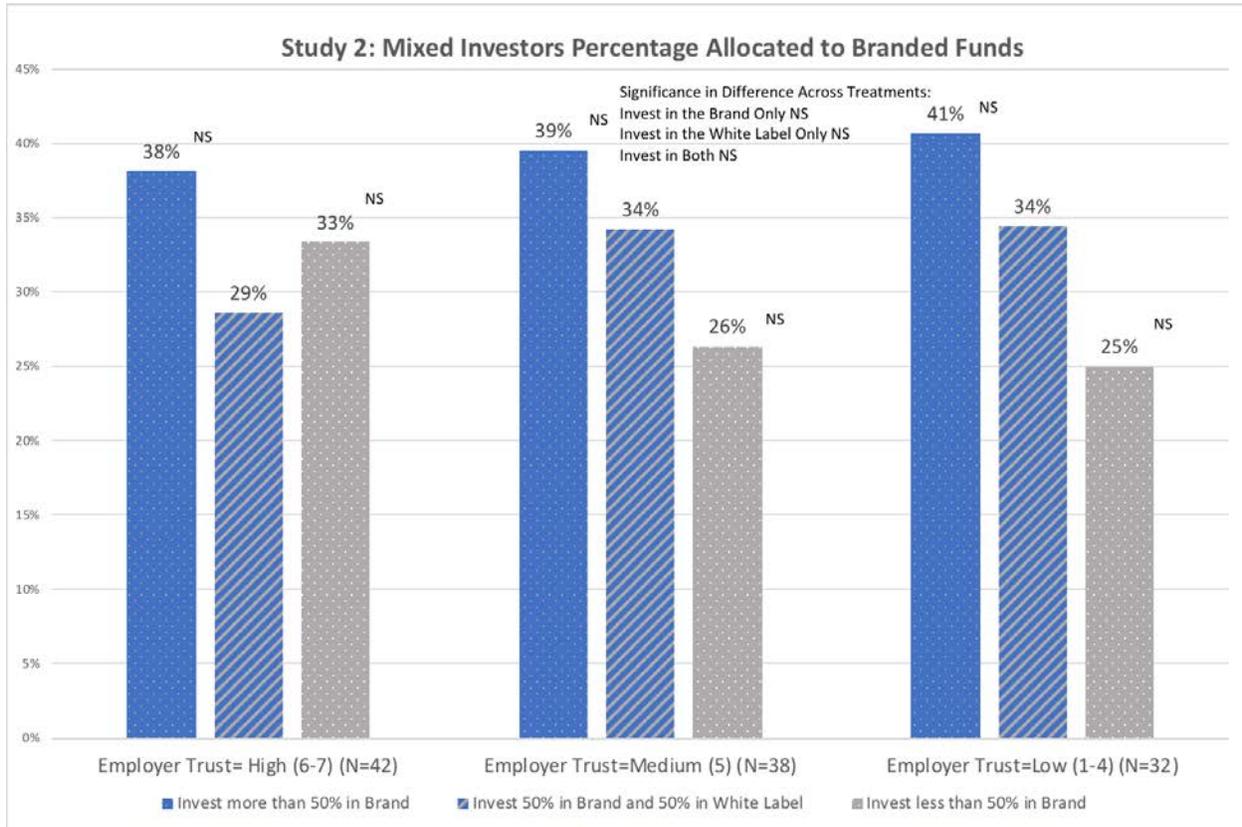
**Figure 10. Study 2-Total Allocations to Brand and White-Label Funds by Employer Trust**



Notes: Stars above the branded fund solid blue bars report the significance of within trust category tests of the differences between the mean allocations to branded funds and white-label funds. NS Not Significant\*\*\*Significant at the 1% level \*\*Significant at the 5% level, \*Significant at the 10% level.

The text box overlaid on the table reports the significance of differences in mean allocations across treatments comparing brand v. brand and white label v. white label. NS Not Significant,+++Significant at the 1% level, ++Significant at the 5% level, +Significant at the 10% level.

**Figure 11. Study 2- Allocation to Branded Funds by Mixed Investors Only**



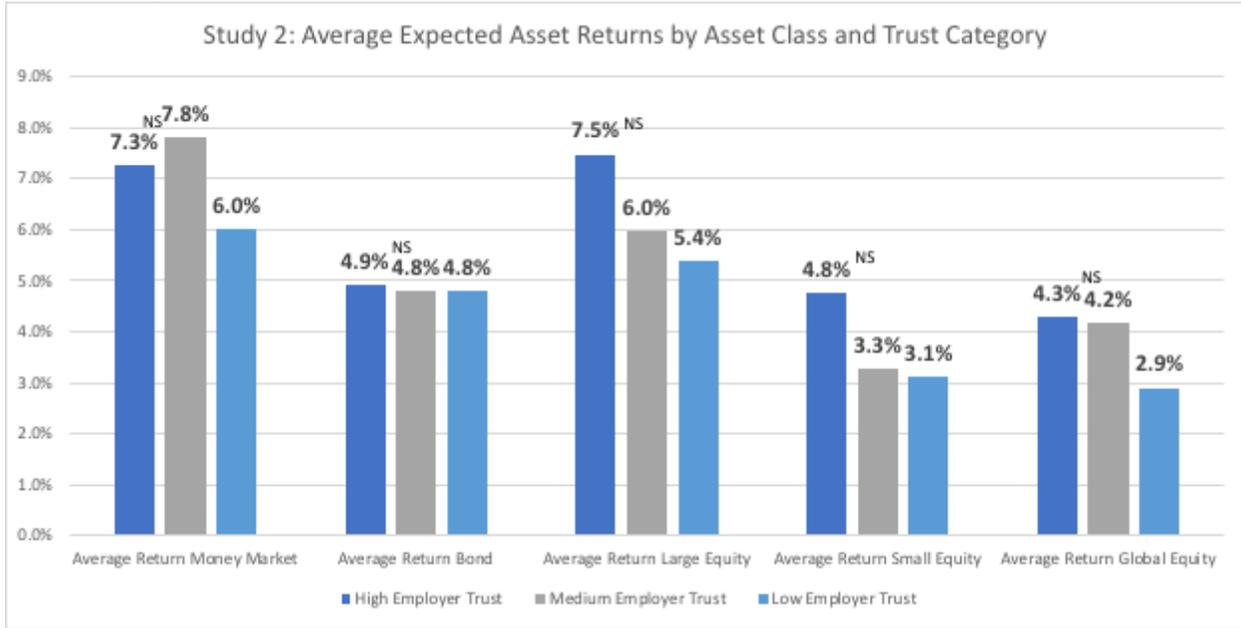
Notes: Stars above the greater than 50% blue bars report the significance of within treatment tests of the differences between percentage of mixed investors in each of the three brand investment categories (Greater than 50%, Equal to 50%, Less than 50%) NS Not Significant\*\*\*Reject the null at the 1% level \*\*Reject the null at the 5% level, \*Reject the null at the 10% level

Pluses (+) above the less than 50% gray bars report the significance of within treatment tests of the differences between percentage of mixed investors in two of the brand investment categories ((Greater than 50% v. Less than 50%): NS Not Significant "a" reject the null at the 1% level "b" Reject the null at the 5% level, "c" Reject the null at the 10% level

The text box overlaid on the table reports the significance of differences across treatments of similar investment ranges (Greater than 50% v. Greater than 50%; Equal to 50% v. Equal to 50%, Less than 50% v. Less than 50%): NS Not Significant+++Reject the null at the 1% level ++Reject the null at the 5% level, +Reject the null at the 10% level

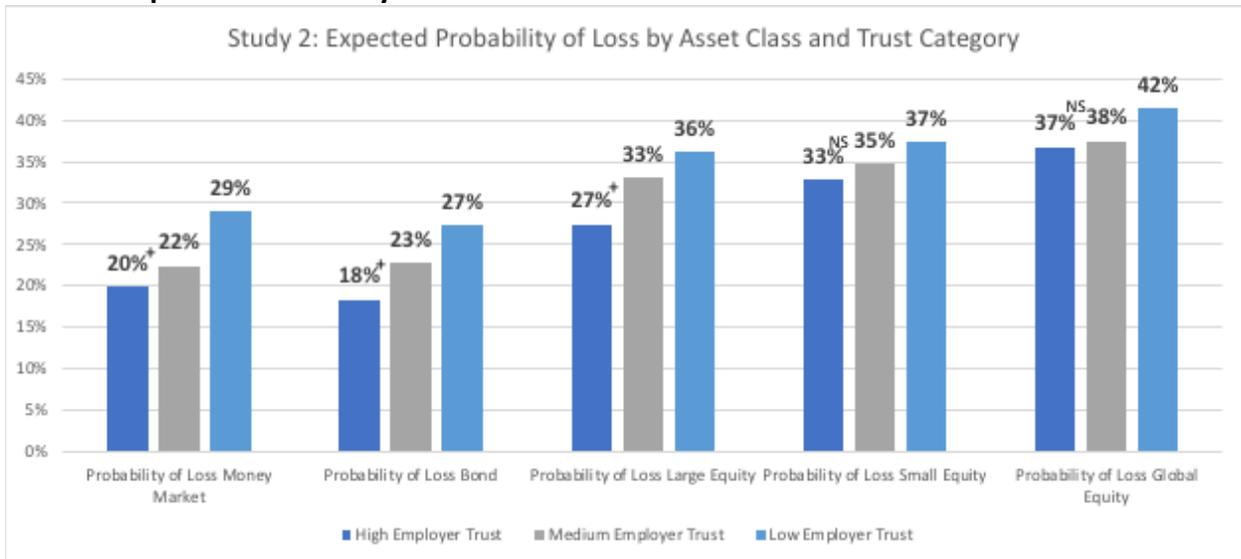
**Figure 12. Study 2- Means of Expected Return and Risk Measures Calculated from Distribution Builder Task**

**Panel A. Expected Returns**



Notes: The NS above the high employer trust fund solid blue bars denotes that there is not a significant difference between the average expected asset returns to employer branded funds and white-label funds within each asset class.

**Panel B. Expected Probability of Loss**



Notes: The pluses (+) above the high employer trust solid blue bars report the significance of the across treatment tests of the differences between the expected probability of loss to employer branded white-label funds and white-label funds within each asset class. NS Not Significant, +++Significant at the 1% level, ++Significant at the 5% level, + Significant at the 10% level.