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Flicking the Switch: Simplifying Disclosures to Improve Retirement Plan Choices

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Abstract: Simplified disclosures can make comparisons between complex financial products easier, and increase consumer expertise. We use incentivized experiments to investigate whether and to what extent simpler information on fees and investment returns assists retirement plan members to make competent choices. We find that members switch quickly from a high-fee plan to the low-fee alternative when fees are shown in nominal dollars. Showing fees as percentages, however, significantly slows down their transition to a low-fee plan. Complex returns information makes it hard for members to recognize and react to relatively poor investment performance, while simplified information reduces losses considerably.

Keywords: Complexity; Consumer Finance; Pensions; Experimental Finance

JEL codes: D14; G11; G28; G41

1. Introduction

Many people find complex financial products hard to understand and difficult to compare. When inexpert consumers make poor financial decisions, the losses they suffer create gains for financial firms or subsidies for more competent consumers (Campbell, Jackson, Madrian, and Tufano, 2011; Campbell, 2016). Market forces should correct these inefficiencies, but in many instances they do not. Indeed, theory shows that firms will strategically increase the complexity of products to stunt the growth of consumer expertise, to preserve price dispersion and to support oligopoly profits (Carlin, 2009; Carlin and Manso, 2010).

In principle, consumers can take advice, follow nudges or read simple disclosures to compensate for their lack of expertise. Consumer advocates and regulators promote all of these strategies, aiming to help people make better and faster financial decisions (Loewenstein, Sunstein, and Golman, 2014). For example, regulators in the United States and Europe have corseted retail investment disclosures into a few pages of strictly controlled information (SEC, 2007; European Commission, 2009, 2012). While transparent disclosures (or advice) should help people compare and choose between competing products, they sometimes use the information in surprising ways, with unexpected results (Choi, Laibson, and Madrian, 2010; Navarro-Martinez, Salisbury, Lemon, Stewart, and Matthews, 2011; Salisbury, 2014; Agarwal, Amromin, Ben-David, Chomsisengphet, and Evanoff, 2014).

We investigate whether and to what extent simpler information compensates for low expertise among defined contribution (DC) plan members when they compare retirement plans. There is ample evidence that consumers are especially perplexed by retirement savings decisions, often to

their cost (Benartzi and Thaler, 2001; Agnew and Szykman, 2005; Brown, Liang, and Weisbenner, 2007; Beshears, Choi, Laibson, and Madrian, 2008; Chetty, Friedman, Leth-Petersen, Nielsen, and Olsen, 2014). Because many plan members are unskilled and inactive, competitive pressures on providers are weak. Plan sponsors and service providers retain under-performing, affiliated funds (Pool, Sialm, and Stefanescu, 2016), and offer high fee and dominated funds on 401(k) investment menus (Ayres and Curtis, 2015). While these studies show the existence and costs of low skill among plan members, they do not test remedies. Our contribution is to identify the effects of simplified fee and return disclosures on the competence of plan members.

We conduct our experimental study of retirement plan member choices in Australia. While along with the U.S., pensions systems in many countries suffer from the combination of uninformed plan members and a lack of competitive efficiency, Australia is an ideal setting for this work. First, plan membership is automatic and compulsory for most Australian workers, so our study draws on a sample of participants with a very wide range of expertise and interest. Second, compulsion and inertia combine to weaken competitive pressures on plans. Annual administrative and investment fees for very similar DC products vary by more than 100% and investment offerings with the same risk and return goals report a large range of investment returns (APRA, 2017). Very few members opt out of poorly performing plans, although they are free to switch to any licensed plan at virtually no cost. Third, one reason that plan members do not opt out of under-performing plans is the practical difficulty of comparing alternatives (Productivity Commission, 2016) and in 2014, the Australian regulator compelled retirement plans to adopt a prescribed disclosure format. We use this format as a template for our tests and the benchmark for our simplifications.

We measure the effect of simplified information in a program of incentivized online experiments. To do so, we offer retirement plan members a choice between two hypothetical plans that change across rounds in systematic ways. Australian retirement savings plans must summarize the key features of their default DC products in a one page "dashboard". We show different groups of participants summary information in the "dashboards", in the standard form, or in several less complex forms. In each of seven treatments, we ask plan members to choose a plan in each of twenty "years" to reflect the long period most people spend accumulating retirement savings. At the start of a treatment, one plan clearly dominates. However, across rounds, we change the relative performance of the plans – either via fees or returns – to motivate participants to switch from the initially dominant plan to the alternative. In doing so, we observe how long it takes plan members to respond to news about fees and returns, how much uncertainty they associate with each source of news, and the effects of their choices on final savings balances. In the end, we can measure whether and to what extent simplification improves decisions, and identify which participants are most affected.

Unlike many studies that focus on the effect of different risk formats (e.g., Kaufmann, Weber, and Haisley, 2013), we keep risk information constant across plans. We do this firstly because it reflects practice: the majority of plans in Australia choose a 70:30 growth:defensive asset mix and target very similar long run return and risk levels for their default product. Hence, members considering a change are likely to compare plans with the same risk target. Second, we can experiment directly on the effect of fee and return information while controlling for risk. Specifically, *either* fees *or* gross investment returns drive the performance differences in each treatment, which provides a clear idea of the effect of simplified information of each on choice of plan.

We focus on fees and returns because they are the most basic signals of plan quality. To bring competitive discipline to bear on retirement plans, people must be able to recognize and act on these signals. However, despite the overwhelming evidence that investors should pay attention to fees (e.g., Gil-Bazo and Ruiz-Verdú, 2009) studies on disclosures find that fund-related fee information is often overlooked or misunderstood (Barber, Odean, and Zheng, 2005; Khorana, Servaes, and Tufano, 2008; Choi, Laibson, and Madrian, 2010; Beshears, Choi, Laibson, and Madrian, 2011; Venti, 2011; Fisch and Wilkinson-Ryan, 2014), especially by less able investors (Grinblatt, Ikäheimo, Keloharju, and Knüpfer, 2015). Our experiments test, first, whether investors respond to fee information and switch to an otherwise equivalent lower fee fund, and second, which of two equivalent fee formats (nominal and annual percentages) plan members understand better. Our results show that most members understand and react expertly to "all-in" fee information when shown in dollar amounts and choose the least costly plan promptly. When we "simplify" the plan information and present the same fee information as (scale compatible) annual percentages of assets, many plan members respond to fee differences more slowly and tentatively.

As well as minimizing fees, expert investors will direct funds towards skilled managers based on evaluations of past performance (Sirri and Tufano, 1998; Berk and Green, 2004; Choi, Kahraman, and Mukherjee, 2016). In our experiment, competent members will update their expectation of each plan's excess returns at every round as new returns information arrives, and choose the plan with higher expected returns (since risk is the same for both plans). Members who treat returns as a noisy signal of manager skill may delay a switch until they have seen several years of outperformance, but the design of our experiment ensures that they should switch only once. We find significantly higher rates of single switches after we simplify.

Additionally, members react more confidently to simple percentage returns information but are confused when returns are showed in complex graphs that actually disguise the underperformance of one plan.

We use a Bayesian updating model to estimate the noise each experiment participant assigns to returns signals. We compute this measure when participants have to track returns in the standard dashboard, and again when they track the same sequence of returns in the simplified dashboard. Because the only difference in these treatments is the information frame, we can attribute any observed change in the estimated noise factor between these treatments to complexity. Our computation shows that simplification reduces the estimated noise in returns by more than 40%. We are also able to manipulate – still within the same overall dashboard context – the relative volatility of returns and compare estimates of the noise associated with returns at low and high volatilities. This sheds further light on whether people's ability to track returns depends on high or low underlying returns volatility, or if it depends on a general uncertainty about the predictive value of returns, or on confusion about complex information.

In different conditions, we change the performance information so that in one instance the performance of the dominant plan gradually deteriorates relative to the benchmark plan, and in the other an under-performing plan gradually improves. Thus we can test whether people react differently to information relating changes in relative performance due to rising versus falling returns. Mutual fund investors typically time their capital movements poorly (Sirri and Tufano, 1998; Frazzini and Lamont, 2008), persisting too long with underperforming funds. Our results show that people find performance differences due to declining returns harder to detect and respond to than performance differences related to rising returns. The indecision we observe is experimental confirmation of empirical observations that mutual fund investors tend to withdraw

from poorly performing funds less readily than they move to highly performing funds (Sirri and Tufano, 1998). We further show that this tendency is b by complex information.

As far as we know, the one-page dashboard we test here is the first of its kind in the world for DC retirement savings plans, but is consistent with the types of reforms called for in 401(k) reporting in the U.S. (Ayres and Curtis, 2015). The results of our tests can therefore inform better disclosure design in many DC pension systems.

Our study adds experimental evidence to theoretical and empirical studies of the effects of complexity on financial markets. Theoretical work models firms' use of strategic complexity and its impact on consumer expertise (Gabaix and Laibson, 2006; Carlin, 2009; Carlin and Manso, 2010). Empirical studies of administrative data confirm that financial firms use complexity to shroud product attributes and confuse retail investors (Henderson and Pearson, 2011; Celerier and Vallee, 2017). Trading experiments show that complexity creates adverse selection as well as additional uncertainty (Carlin, Gervais, and Manso, 2013). Here we present new experimental evidence of retirement plan members' responses to complexity about fundamental plan features and the effects of simplification, rather than evaluating the strategic behavior of financial firms or traders.

We also add to the literature on the impact of regulated product disclosure. Our contribution to this literature is the detailed and systematic comparison of the influence of key characteristics in retirement plans in a standardized format that until recently have rarely been considered within the same overall context of product disclosure. Numerous studies have investigated the presentation format for risk, fees, and returns individually, and several have compared simplified against comprehensive disclosures (e.g., Kozup, Howlett, and Pagano, 2008; Beshears, Choi,

Laibson, and Madrian, 2011; Walther, 2015); yet few have jointly evaluated the multiple elements of a standardized format (see also Venti, 2011; Gillis, 2015; Colaert, 2016).

In the next section, we describe the setting of the experiment, the retirement plan dashboard and the design of the experiment. In Section 3 we report results: simple tests of participants' comprehension under the standard and simplified dashboard formats, rates of single switches between plans; estimates of the influence of information and formats on patterns of switches; estimates of the signal noise due to complex information; and losses associated with complexity. Section 4 concludes.

2. Research Approach

In this section we first set out the context of our experiment: the scope and size of the Australian pension sector; evidence of inefficiency due to a lack of competitive pressure; connections with low plan member expertise; and the proposed remedy of simplified plan information. We also describe the sample selection and implementation of the experiment. We then explain the experimental treatments that vary fees, returns, and simplifications of aspects of presentation.

2.1. Experimental setting

There are several reasons why the Australian pension system is an ideal setting for an online choice experiment on the effects of complex information on consumer financial decisions. First, a representative sample of plan members from Australia spans an extremely wide spectrum of financial sophistication and expertise because regulations compel virtually all Australian workers to participate in pension plans (labelled "superannuation funds"). This variation gives power to our test of complexity and lets us define groups of vulnerable non-expert consumers.

Second, while rated to be one of the best pension systems in the world (Mercer 2017), the Australian system typifies inefficiencies that accompany automatic enrolment. The issues we study are globally important since many countries have adopted either compulsory or opt-out DC savings plans as the "second pillar" of their retirement savings systems and consequently face a lack of competitive pressure on plans from passive participants. In Australia, regular flows of mandatory savings (at a minimum contribution rate of 9.5% of earnings) have built the Australian pension sector to more than US$1.6 trillion (2016) - the world's second largest pool of defined contribution (DC) savings after the U.S. (Vanguard, 2017). The efficiency of the retirement savings sector is thus critical to the health of the whole economy. If plan members are better skilled, they can apply competitive pressure to plan providers to minimize fees and maximize risk-adjusted returns, to the benefit of millions of current and future retirees.

However, competition among plans is weak, and there is compelling evidence that many plans operate inefficiently (Financial System Inquiry 2014).[1] Less than one third of members ever opt out of the default plan selected for them by their employer even though most could choose to contribute to *any* regulator-approved plan and thus possibly earn much higher net returns (Chant, Mohankumar, and Warren, 2014; Butt, Donald, Foster, Thorp, and Warren, 2017; Minifie, Cameron, and Savage, 2015). Surveys of plan members report that fewer than 10% had switched plan providers in the previous year, with the majority of switches initiated by a change of job or by the employer (sponsor), not by the member (Productivity Commission, 2016). Also, around 43% of plan members have more than one pension account, with 18% holding three or more. Multiple accounts are an indication of inactivity, because members who do not consolidate

[1] One estimate states that the $1,000AUD ($750USD) fees paid each year by the average Australian plan member could be reduced by around one quarter if enough competitive pressure were to be applied to plans (Minifie, Cameron, and Savage, 2015).

these accounts pay multiple administration fees and insurance premiums. One reason that plan members have not opted out of under-performing plans, or consolidated their savings into one plan, is that it has been hard for them to compare plans. Complex product information contributes to plan member inertia (Productivity Commission, 2016).

Third, Australian plans adopted a new information standard just prior to our experiments. New regulation stipulated that, from 2014, members who do not choose their own plans must default to a plan that is a registered "MySuper" retirement savings product. MySuper products are (purportedly) low-cost defined-contribution (DC) retirement savings vehicles that conform to regulation of investment strategy, service provision, and fees. Regulators and the industry devised a one-page disclosure called a "dashboard" to (supposedly) help potential plan members compare MySuper default plans easily by their returns, risks, and fees (Cooper, 2010; Commonwealth of Australia, 2013). The government proffers the "dashboard" we test as a potential source of assistance to overcome a lack of information, that is, one answer to the question of "What can help members to make better decisions?" (Productivity Commission, 2016, p. 208). Before the government prescribed this "dashboard", disclosure documents came in various forms and often ran to several hundred pages. While we cannot compare the response of plan members with a single preceding template (because there was none), we can evaluate the new prescribed format. We can test whether the new format provides simple, understandable information that helps members to opt out of underperforming plans.

The plans that offer a MySuper product must place an up-to-date dashboard prominently on their website. It must show the following information: [2]

[2] The Corporations Act and Regulations and the Australian Prudential Regulation Authority (APRA) Reporting Standards set out the precise presentation format for these measures. Specifically, Section 1017AB of the

- *Return target* - calculated as the mean annualized estimate of the percentage rate of (net) return above the CPI's growth over the next ten years.
- *Returns* - calculated as the net return for each of the past ten financial years by subtracting administration and advice fees, costs, and taxes from the net investment return.
- *Comparison between the return target and returns* - shown on a graph that must include the returns for the ten previous financial years (presented as a percentage rate of return and shown as columns), and the moving average return target and moving average return (both shown as lines).
- *Level of investment risk* - presented using the standard risk-measure format, where the investment risk is shown as the anticipated number of negative returns for the product over 20 years and is accompanied by a risk description that ranges from very low to very high (FSC and ASFA 2011).
- *Fees and other costs* - calculated as the dollar amount of fees and other costs for an account balance of $50,000.[3]

While not mandatory, the regulator recommends that the dashboard include "warnings" about past returns and fees and other costs that might not be the same in future years. The regulator's example dashboard[4] (that we tested) warns consumers in two places, namely: i) the statement

Corporations Act, the Corporations Regulations 2001 as amended by the Superannuation Legislation Amendment (MySuper Measures) Regulations 2013 (Commonwealth of Australia, 2013) and APRA Reporting Standards SRS 700.0 Product Dashboard (APRA, 2015).

[3] The method of calculation is set out in the Corporations Regulations and the relevant APRA reporting standards (Commonwealth of Australia, 2013; ASIC, 2014; APRA, 2015).

[4] The Australian Securities and Investments Commission (ASIC) developed an "example product dashboard" for pension funds to follow (see Supplemental Material A). Examples of actual MySuper dashboards for two of Australia's largest pension funds can be found at https://www.australiansuper.com/~/media/Files/MySuper%20dashboard/FS%20ProductDashboard.ashx and https://www.unisuper.com.au/mysuper/mysuper-dashboard.

"Future returns cannot be guaranteed. This is a prediction." is shown in the same box as the return target, and ii) the returns graph carries the warning that "[p]ast performance is not necessarily an indicator of future returns". In contrast, the dashboard shows the 10-year average net of fees return at the top without any adjacent explicit warning and reports fees without any hint they could change in the future.

The regulator commissioned consumer testing of various aspects of the dashboard; a research firm conducted eight focus groups (consisting of 54 people in total) and three in-depth interviews. The researchers asked consumers about their reactions to the product dashboard (what they liked/disliked, their understanding of the key information, and their attitudes towards the look and feel/presentation of the information). However, the researchers did not explore how people actually used the prescribed information. Even though the participants found that: the format was dated; the proposed returns graph comprising lines overlaid on a bar chart was too complex; the references to "return target" and "current return target" was confusing; and the risk was difficult to understand (ASIC, 2013), the regulator addressed few of these concerns.

2.2. Experiment Overview

Between July 2014 and October 2015 we conducted seven separate treatments involving over 1,800 retirement plan members. We recruited participants from the *Pureprofile* representative online panel of over 600,000 Australians, all of whom were 18 or over and enrolled in a retirement plan. We sampled 250 to 286 people for each treatment, with a 50:50 split by gender, and we divided them into age cohorts of 18-34, 35-49, and 50-64. In each treatment, eligible participants first completed the experimental task by making 20 choices between two retirement plans. They then answered questions related to i) their comprehension of the information

presented in the dashboard, ii) financial literacy and numeracy, iii) pension system knowledge, and iv) demographics. [5]

The panel provider recruited participants via email and invited them to click a link that took them to the consent page. We then asked them to read an information form that described the purpose of the study (i.e., to understand "how superannuation members make use of newly mandated product disclosure statements"), outlined the survey structure, guaranteed confidentiality, explained compensation, and offered sources of feedback. If they consented to participate, they moved to the screening questions and if deemed eligible, continued to the rest of the survey.

2.2.1. Incentives

We paid incentives to encourage participants to complete the survey, to be as discerning as possible in the task, and to be as accurate as possible in task comprehension and financial literacy quizzes. [6] The consent form said that participants would be compensated in two ways. First, on completing the survey, participants would receive around $4 worth of *Pureprofile* points. Points can be redeemed for cash or goods and services. Second, participants could earn up to an additional $4 bonus depending on the quality of the answers they gave in one of three randomly selected sections of the survey. The bonus payments were either i) the average return to plans selected in the choice task, applied to a $3 account balance, ii) the proportion of correct

[5] Supplemental Materials B includes live links to all treatments, screenshots of the non-incentivised version of treatment 1, screenshots of the variations in the dashboard tested in later treatments, and a screenshot of the incentive information page. Supplemental Materials C reports the demographics of the survey participants alongside 2011 Australian census data.

[6] In T1, 148 of the 286 total participants were paid for completion but not offered a bonus incentive. While there was no large difference, the quality of answers (lower error rate, higher median/mean in percentage of correct answers for financial literary questions) was in line with previous systematic evidence (e.g., Hertwig and Ortmann, 2001) but somewhat higher in the incentivized condition. Therefore, we incentivized all later treatments [T2-7].

answers to comprehension questions on the dashboard multiplied by $3, or iii) the proportion of correct answers to the questions on financial literacy, numeracy, and pension system knowledge multiplied by $3. We informed participants they would receive a bonus based on their performance in one of those sections but did not tell them which section would determine their payment. The average bonus payment was $2.18 with a standard deviation of $1.10. At the end of the survey, we computed the bonus earned by each participant, explained how it was calculated, and showed them the amount.[7] The median participant took less than 20 minutes to complete the survey.

2.3. Choice Task

After agreeing to the bonus payments, participants read definitions of the terms they would see in the dashboard. They then proceeded to the first of 20 choices between the XYZ and ABC (or HIJ, depending on their condition) retirement plans, called "MySuper funds". The experiment presented information about each plan side-by-side on the screen, thereby simulating (but somewhat simplifying) member comparison of competing plans. Each of the choice sets asked "Which of the two MySuper funds do you prefer?" and participants chose by clicking the radio button under their preferred plan. As they moved to the next set, the dashboard information updated to include another financial year's performance for each plan, and the participants chose again, thus completing 20 "years" of comparisons in total. People could review glossary definitions at any time by clicking a link. Figure 1 shows a screenshot of an example choice set.

[7] For example, participants who were randomly assigned to the task bonus read "The bonus earnings depend on the risk, return and fees of the MySuper funds that you chose as your most preferred. We calculated the one-year return to a $3.00 investment in your most preferred fund at each choice and averaged this return over all your choices. The bonus you earned is $X."

Table 1 outlines the date and content of each treatment, as well as the number of participants who completed a sequence of 20 choices in each of the seven treatments.

Content-wise, we designed the experiments to test the consensus of past studies that people overlook fee differences (Beshears, Choi, Laibson, and Madrian, 2011; Choi, Laibson, and Madrian, 2010; Wilcox, 2003) and remain too long with underperforming funds (Sirri and Tufano, 1998; Frazzini and Lamont, 2008), but without the complications of communicating investment risk. In all treatments, we varied the underlying fees and/or realized net returns between plans but not the target returns or investment risk. Our approach is analogous to comparing two plans with the same growth:defensive asset allocation (hence the same "CPI+" return target and risk target) but different relative performance over the 20 "years" of the experiment.

The task is consistent with the experience of members of default retirement plans in several critical ways. First, the default asset allocations of most plans are very similar and members are therefore very likely to compare plans with the same target return and risk. The main feature of each MySuper product is that the investment strategy (asset allocation) for members' contributions can be either a balanced (fixed) asset allocation or a life-cycle (target date) strategy. Most default plans offer fixed strategic asset allocations that are defined by the return and risk target. Plans choose the target returns and risk as the *goal* of the strategic asset allocation of the MySuper product; they do not calculate them from historical performance. Virtually all MySuper retirement savings vehicles that operated a fixed strategic asset allocation at the time of our study held a 70:30 mix of growth:defensive assets and consequently reported similar target returns and investment risk. In 2015, 80% of fixed strategy MySuper products reported a target return above CPI of 3-4% p.a. and a "high" or "medium-high" level of

investment risk (APRA, 2017).[8] The experiment asks participants to compare two products with these same targets.

Second, even though many MySuper products have similar return and risk targets, they do not charge similar fees. In 2015, annual fees and costs on a $50K account balance in fixed-strategy MySuper products ranged from $265 p.a. to $1085 p.a. with a median of $520 p.a. (APRA, 2017). Investment management fees (charged as percentages of assets) ranged from 0.32% p.a. at the 10th percentile to 0.96% p.a. at the 90th percentile and administrative fees (usually charged as a weekly nominal amount) ranged from 0.16% p.a. at the 10th percentile to 0.84% p.a. at the 90th percentile. Our fee treatments show experimental fees that change over ranges matched to the observed fees but are displayed in more or less complex ways.

Third, MySuper products also show wide variation in investment performance. In 2015, the mean annual investment return gross of expenses for single strategy MySuper products was 8.45% with a cross-sectional standard deviation of 2.1%.The 10th percentile was 5.5% and the 90th percentile was 10.9%. One reason for this wide cross-sectional variation in investment performance is that, even though they target similar returns and risk, MySuper products select from a very broad range of asset classes, including illiquid and unlisted assets. Portfolios that include substantial exposures to hedge funds, private equity, listed and unlisted infrastructure, listed and unlisted property, as well as domestic and international stocks, bonds and cash, are common (APRA, 2017). In addition, large plans do not outsource all their investment decisions;

[8] A minority of MySuper funds use target date or lifecycle strategies and operate under different disclosure settings.

they operate internal teams of investment managers when they believe this gives them a cost or skill advantage.[9]

For related reasons, large fixed-strategy MySuper products can persistently out-perform smaller, less diversified products in the active component of their portfolio, like endowment funds (Brown, Garlappi, and Tiu, 2010; Cummings, 2016; Ainsworth, Akhtar, Corbett, Lee, and Walter, 2016). Studies attribute this out-performance to superior asset selection or a better negotiating position with external managers (Brown, Garlappi, and Tiu, 2010; Dyck and Pomorski, 2011; Cummings, 2016). Unlike standard U.S. mutual funds, where flows to skilled managers attract decreasing returns to scale (Berk and Green, 2004; Chen, Hong, Huang, and Kubik, 2004), MySuper investment portfolios enjoy increasing returns to scale over some ranges (Cummings, 2016), consistent with mutual funds located outside the U.S. or that have international exposure (Ferriera, Keswani, Miguel, and Ramos, 2013). In these respects, the investment portfolios and practices of large MySuper products resemble endowment or sovereign wealth funds, more than stock mutual funds. The returns treatments in our experiments show participants plans that differ by returns, with fees held approximately constant. These treatments check whether members can interpret information about differences in gross returns that could relate to manager skill.

2.3.1. Fee and Return Variations

In fee treatments (T1 and T5), performance differences arose because of increasing or decreasing expenses (fees); and in the return treatments (T2-4; T6-7), similar sized performance differences arose because of improving or worsening returns. We do not explain the persistent

[9] See, for example, the practice of the University sector retirement plan at https://www.unisuper.com.au/investments/who-manages-your-investments/internal-investment-management

differences in performance, but a plan member in this setting could associate these with differences in internal manager skill, superior selection of external managers, or better allocation to alternative assets as well as to luck.

As already mentioned, we do not vary risk information by plan or by treatment. Risk information, like target returns, is a target return volatility that drives the Strategic Asset Allocation (SAA) choice of the plan provider. While the target risk and return information is constant, the SAA will also stay constant. In addition, there is considerable evidence that people have problems making judgments involving probability and risk, which means they generally have problems making good choices about investment products (Peters, 2008; Galesic and Garcia-Retamero, 2010; Weber, Siebenmorgen, and Weber, 2005). We designed the experiments to isolate the effects of returns information without changes to risk.

Since both the benchmark (XYZ) and alternative (ABC or HIJ) plans have the same exposure to growth and defensive assets (70:30), at each choice set in each treatment we use bootstrapped historical data to compute a gross nominal return that is the same for both funds.[10] Then, depending on the source of under-performance in the treatment, we penalize (or boost) the net return of the alternative fund, either by charging a higher (lower) administrative fee or directly reducing (increasing) the return to mimic skill.

In T1 and T5, the differences in plan performance originated in relatively high fees. We implemented this by setting the base fees for the benchmark plan (XYZ) at the average MySuper fee on a $50K account balance of 1.06% ($530 p.a). We varied the fee in the alternative plan from either a high ($800 p.a.) or low ($270 p.a.) starting point, thus approximated the actual

[10] Supplemental Materials D explains the calculation of net returns in all treatments and reports the data sources.

variation in MySuper fees (Chant, Mohankumar, and Warren, 2014, Table 5). At each choice set, the fee charged by the alternative plan increased from the low starting point (or decreased from the high starting point) by a randomly selected amount between $20 and $30 p.a. Around the mid-point of the sequence of 20 choices, the fee on the alternative fund equalled the fee on the benchmark fund and then continued to decrease (or increase) until the final choice. An expert plan member in this setting can maximize net returns by minimizing the fee – optimal choices follow the lowest fee fund.

In T2-4, T6, and T7, differences in skill drove the differences in performance between the benchmark and alternative plans. In these treatments, fees for both plans stayed at 1.06% of a $50K balance with a small random adjustment at each choice set. To mimic poor or skilful management, we penalized or boosted returns for the alternative plan by an amount equal to the penalty (bonus) applied to plan fees in T1 and T5. The dollar value of the differences between the benchmark and alternative plans are thus the same in all treatments, but they show up either in fees (and therefore also net returns) (T1 and T5) or only in net returns (T2-4, T6, and T7).

What is the optimal behavior of a plan member who observes a continuous decline (improvement) in the relative net return of one plan over another? Berk and Green's model of mutual fund investment shows that skilled managers have superior past performance and attract investors' money (Berk and Green, 2004). However, fees charged by skilled managers and decreasing returns to scale ensure that, in equilibrium, the marginal investment earns a zero expected excess return and future returns are unpredictable, consistent with much empirical research on mutual funds (e.g., Sirri and Tufano, 1998).

If this experiment were offering a choice between standard mutual funds, the rational participant would use past returns to form an expectation of future excess returns and choose that fund, even if future returns are unpredictable. Because in our setting the plan investments resemble endowment funds more than mutual funds, and managers do not always face decreasing returns to scale, skilled participants could justifiably treat returns as persistent. In any case, at each choice participants should still prefer the fund with the highest expected excess returns, conditional on past performance. However, if participants treat net returns as a noisy signal of skill, they will gradually update their expectation of returns as they learn about performance, instead of reacting instantly to news (Berk and Green, 2004). A participant who treats the returns signal as noisy and observes one plan outperform the other by a decreasing margin for several years, eventually becoming dominated by the other plan, will update expectations more slowly than a participant who treats the return signal as clearer. If the noise is larger, the participant will delay longer before switching plans.[11]

We also manipulate the changes in fees and returns of one plan relative to the other. Aggregated studies (e.g., Sirri and Tufano, 1998; Choi, Kahraman, and Mukherjee, 2016) have found asymmetric responses of investors to mutual fund performance that manifests as a higher and more rapid flow of funds to outperforming managers compared with a slower movement of funds away from poor performers. Here, in each treatment there are approximately equal numbers of participants allocated to an "increasing" and a "decreasing" condition. We define the "increasing" condition as the case where the returns to the alternative plan (HIJ) increase relative to the returns to the constant plan (XYZ) over the 20 choice sets, and the "decreasing" condition

[11] In section 3 below, we outline a simple Bayesian updating model that we use to estimate the noise that participants assign to returns signals and show how this noise is less under simplified information.

as the case where the alternative plan's (ABC) returns decrease relative to the returns to the constant plan (XYZ). We examine these patterns to test whether people react differently to changes in relative performance due to rising versus falling returns.

Finally, we use treatments to separate out two confounding effects on the clarity of returns. First, we control for the underlying volatility of the investment portfolio. In T4 we introduce low volatility returns by computing the gross returns of both plans from a portfolio of defensive assets.[12] This asset allocation yields a lower target return, lower standard risk measure, and low volatility realized returns. The goal of this variation is to test whether plan members make different choices when relative performance signals are less volatile. Second, participants' response to returns will also depend on the clarity of returns information - on how easy it is to observe – no matter what they think about its value as a skill signal. When we simplify the dashboard, the change in our return noise estimate measures the proportion of uncertainty that is caused by complex information.

2.3.2. Simplification

Treatments T1-4 aim to mirror the appearance of the dashboard prescribed by ASIC (Australia's corporate regulator) as closely as possible. However, treatments T3 and T4 vary from the prescribed dashboard slightly in some conditions by displaying return information in tabular rather than graphical form. (See Figure 2 for an example of the table.) We make this change to test the regulator's (commissioned study) finding that members are confused by the overlaid lines on the graph (ASIC 2013) in contrast to findings that graphs improve comprehension and lead to better investment choice (Jarvenpaa, 1990; de Goeij, Hogendoorn, and Campenhout,

[12] See Supplemental Materials D for a description of the low volatility return calculations.

2014; Kaufmann, Weber, and Haisley, 2013; Goldstein, Johnson, and Sharpe, 2008). Whether tables or graphs are better for showing relative returns is unclear. Graphs can "reduce cognitive overhead by shifting some of the information acquisition burden to our visual perception system freeing cognitive resources for other steps in the problem solving task" (Lohse, 1997, p. 298). But the advantages of graphs seem to depend on whether the format fits the purpose (Vessey, 1991).

We also introduce a "simplified" dashboard in T5-7 which departs from the ASIC standards. Figure 3 shows a screenshot of the simplified dashboard. Specifically, we strip away the graphical/tabular presentation of return information and use a common percentage scale to communicate the 1-year and 10-year average net returns as well as the fee information. That is, rather than providing fees in dollar amounts they are described as a percentage of a $50,000 balance. The reasoning behind this change comes from the studies that demonstrate scale compatibility effects: information presented on the same scale is more readily integrated and understood than when different metrics are used (Harries and Harvey, 2000).

The simplified dashboard makes it easier for participants to see that the gross investment returns of both funds are (approximately) equal in T5, making for a cleaner test of fee differences than T1. The participants in T5 could add the (percentage, annualized) fees back onto the (percentage, annualized) net returns to get gross returns. This is difficult for participants to do in T1 because the ASIC dashboard shows net returns in the bar chart and reports fees as a nominal dollar amount; the two cannot be combined by simple arithmetic.[13] When we simplify the

[13] The simplified dashboard also used a more direct statement on investment risk by stating the risk of a negative return in any given year. We expected this change to mitigate erroneous 'gamblers-fallacy'– like reasoning, that can be precipitated by considering runs of returns within a specified time-window (see, e.g., Ayton and Fischer, 2004).

dashboard we can see how participants handle returns information in different frames. We can see if confusion declines, if decisions are made faster and more confidently, and how much attention people pay to short-term and long-term returns.

Table 1 summarizes our systematic comparison of different formats (graphical, tabular, simplified), dynamics (increasing, decreasing), information (fees, returns), and volatility (low, high). The program gives comprehensive insights into how these different features affect members' expertise. It is also intuitive that, when confronted with complex information, some people are better able to handle it than others because of higher cognitive ability, more patience, better decision-making skills or previous experience. So we also test whether participants with different education, demographics, or financial literacy use the dashboard differently.

3. Results and Discussion

We analyze results with the aim of evaluating the effects of simplified information. First, we look at how participants in the experiment judged the usefulness of fee and return information before and after simplification and what they said they paid attention to. This gives the first indication that not all simplifications help people make better choices. Second, we evaluate the expertise of the participants by seeing how they act over 20 rounds of plan choices under different information treatments. We estimate the relative noise associated with standard and simplified information and calculate related losses to plan members. As a result, we can quantify how much improvement we get from less complexity, rather than only recording the use of heuristics (Walther, 2015)[14] or simply reviewing participants' comments (CFPB, 2012).

[14] Two other differences between our study and Walther (2015), apart from the specific disclosures being studied, is that he tests the KIID on a sample of students more educated than the general population of investors and does not offer a performance-related incentive.

3.1. Preliminary analysis

To find the best plans, participants in the experiment had to notice the differences in fees (T1 and T5) or returns (T2-4, T6-7). However, the disclosure formats obscured some items and enhanced others. The framing of short-term return and fee information strongly influenced the way plan members used it.

After they completed the task, participants answered questions about their use and understanding of the dashboard. A majority (58%) of the participants who saw the standard dashboard chose the *10-year average (net of fees) return* information as the most useful comparator between plans (Table 2, Panel A). A smaller group (21%) ranked the *fee* information as most useful. Even in the treatment where the performance differences came from fees and charges (T1), only 35% ranked fees as the most useful item. The popularity of the *10-year average return* is not surprising. This information is easy to see (at the top left of the dashboard), is shown as an annualized percentage, and has no adjacent warning against using returns to predict future performance. Fees are also clearly expressed in dollars at the bottom right of the screen. There is no warning of future fee changes or that their dollar amount is nonlinearly related to the account balance. The *fee* and *10-year return* are salient, and participants might have inferred that they are more reliable than the information items that are located next to warnings.[15] Fees, expressed in dollars relative to a $50K account balance, were also the best understood item on the dashboard.[16] This result supports the view that communicating fees as a

[15] The target return is also reported at the top of the dashboard but with the disclaimer of being a "target" not a "prediction". Together with the standard risk measure, it is the only forward-looking information on the dashboard, but we held these constant between the two plans throughout the tasks. Our approach aligns with industry practice, since these items depend on the strategic asset allocation of the MySuper investment, and this is rarely changed by the provider.

[16] See Supplemental Material E that lists all the comprehension and financial literacy questions and reports the rates of correct answers to comprehension questions.

nominal dollar value makes them "salient, in-your-face expenses" (Barber, Odean, and Zheng, 2005, p. 2097) that investors will minimize.

Participants found long-term returns very useful, but did not say the same of short-term returns which seemed obscured by how they have been shown. If participants wanted to see the *1-year return*, they had to look at the bars on the past performance graph. Only a small proportion of participants in the standard dashboard treatments (14%-20%) said they used the returns table or graph often (Table 2, Panel A). And people who did look at the graph would probably notice the nearby warning that "[p]ast performance is not necessarily an indication of future returns". Even though a line on the graph showed the *10-year average return*, participants might not have made a connection between the warning near the graph and the percentage for the *10-year average return* separately appearing at the top of the dashboard. Additionally, participants did not give much more notice to short-term returns in a table than a graph.

In fact, participants rated the graph or table that showed historical return information as relatively unusable. Fewer than 11% of participants thought they were the most useful item (Table 2, Panel A). Graphs depict numerical relations as spatial relations – and facilitate comparisons between variables or trends – whereas tables help people extract discrete data values or make point estimates (Vessey, 1991). The visual salience of graphed information depends on physical differences between images (Jarvenpaa, 1990). On the one hand, the color and central position of the graph on the dashboard is likely to attract participants' attention. On the other hand, the similarity between the graphs of the two plans and the complexity of the combined bars and lines makes it hard to detect differences. And neither the graph nor the table make it easy to directly compare the two plans. To discover which plan has the strongest performance history, participants have to shift attention from one half of the screen to the other

in order to sequentially compare each attribute in the table or graph. This sequential comparison of attributes could place an undue load on working memory, making it hard to choose the superior plan.

Simplifying the dashboard clarified returns but obscured fees. A higher proportion of participants in the simplified dashboard treatments (69% cf. 58%) rated the *10-year average returns* information as the most useful information item (Table 2, Panel B). Comprehension tests also showed that the percentage of participants who understood that the returns were *net of fees* increased by 18 points over the percentage in the standard dashboard treatments. A much smaller proportion of participants in the simplified dashboard treatments (12% cf. 21%) rated *fees* as most useful. In addition, the proportion of participants who reported using the information about the *10-year average* and the *1-year returns* rose to 76% (cf. 66%) and 29% (cf. 14-20%). Of more concern was the fact that the proportion of participants using the *fee* information in the simplified dashboard with a fee treatment (T5) was around 20 percentage points lower (36% c.f. 59%) than for the standard dashboard version (T1). We infer that changing the fee information from dollars to a percentage of the account balance and listing returns information directly above the fee percentage made the fees less noticeable (Wilcox, 2003; Barber, Odean, and Zheng, 2005).

These results give a nuanced interpretation of how people might use past performance information. While we frequently saw participants compare *10-year average return*s, most did not use the *1-year return* shown in the past performance graph (or table). Our finding that people concentrate on long-term average returns is consistent with the experimental studies of Wilcox (2003) and the evaluation of aggregate revealed preference data by Benartzi (2001). By contrast, empirical studies on aggregated mutual fund flows find that investors choose funds with strong

recent performance (Sirri and Tufano, 1998; Del Guercio and Tkac, 2002; Frazzini and Lamont, 2008).[17] In addition, our result could also be related to the placement of warnings in the standard dashboard – next to the graph but away from the *10-year average return*. Even though the *1-year return* is much easier to see in the simplified dashboard, it still warns people against projecting future returns from past performance, while the *10-year average return* does not.

The relatively simple presentation format of fees and charges in the standard dashboard can also explain why participants in our study rank fee information as highly useful.[18] Other studies (e.g., Wilcox 2003; Barber, Odean, and Zheng, 2005; Beshears, Choi, Laibson, and Madrian, 2011) have shown that mutual fund investors pay more attention to nominal up-front fees than percentage expense ratios and fail to minimize fees even when they think they are important (Choi, Laibson, and Madrian, 2010). Our finding that participants give more weight to fees when expressed as nominal dollars in the full dashboard, rather than comparable percentages in the simplified dashboard, also supports this interpretation. However, our results go further than previous findings by demonstrating that this is a pure framing effect.

[17] This stands in contrast to the European Commission (2009) study on the KIID which found that people paid most attention to a bar chart and table comparing an investment fund's recent returns to a benchmark. The difference between our results and those of past studies is probably related to the relative clarity of short- and long-term return information in the standard dashboard, as foreshadowed in the regulator's commissioned consumer testing (ASIC, 2013).

[18] Participants in the European Commission study ranked it relatively low. The KIID separately reports investment funds' entry and exit charges, ongoing expense ratios, and performance fees. Fee information is the section in the KIID that is hardest for test subjects to understand (European Commission, 2009).

In summary, many plan members appear not to understand much of the dashboard information. [19] This is probably due both to weak financial literacy among plan members,[20] and the complexity of the disclosure itself.

3.2. Complexity, simplification and expert choices

We structured the sequences of 20 plan comparisons so that the plan with the highest net return changed from one to the other, in most cases at the 11th or 12th choice set in the sequence. In this subsection we evaluate under what conditions the disclosures of fees and returns caused participants to switch plans, and when, and whether the simplifications we make improve choices.

3.2.1. Switching Once

Because the difference between plans changes monotonically over 20 rounds of choices, participants who use disclosures effectively switch once and then stay with the plan they switched to for the remainder of the tasks. For fee treatments, the ideal time to switch is at or after the higher net return changes from one plan to the other. For return treatments, the ideal time to switch depends on the speed with which participants update their estimate of expected excess returns for each plan. Participants who assign more uncertainty to returns as a signal of performance will delay the switch longer, but will still switch once.

[19] Risk information was very poorly understood. Less than one fifth of participants answered questions about risk comprehension correctly in the standard format. Less than one quarter of participants answered risk comprehension questions correctly in the simplified format. See Supplemental Materials E.

[20] Participants answered financial literacy and numeracy questions correctly at rates similar to earlier surveys of the Australian population and of other developed countries (Agnew, Bateman, and Thorp, 2013). Participants gave the most wrong answers to questions on investment risk, diversification, and probabilities.

We found dramatic variations across treatments and conditions in the proportions of participants who made a single switch. (See Table 3 Panel A for the percentage of participants in each condition who made one switch.) For the standard dashboard treatments (T1-4), the rates of single switching were above 75% for the fee condition (T1), but fell to around 21% when the differences between plans showed up in returns rather than fees. The rate of single switches rose when low volatility returns were shown (T4), but was still less than 40%.

Participants were more decisive in the simplified dashboard treatments (T5-7) where around two thirds of the respondents in each treatment made one switch. The simplified dashboard especially helped more numerate participants to make a single switch. Table 3 Panel B reports marginal effects from logit estimations of the probability that a participant made a single switch. The explanatory variables include demographics, numeracy, and financial literacy measures as well as an indicator for the "decreasing" conditions. We estimate that participants who answered an additional numeracy question correctly were between 6 and 11 percentage points more likely to make single switches in the simplified dashboard (T5-7) than in the full (standard) dashboard fee treatment (T1). However, better numeracy did not seem to help in the full dashboard return treatments (T2-4). This format concealed differences in plan returns so effectively that even more numerate people were confused.

Studies of the relation between cognitive ability, financial literacy, and investment choices have reached apparently conflicting conclusions. There is some evidence that financially literate investors avoid higher fees (Grinblatt, Ikäheimo, Keloharju, and Knüpfer, 2015; Choi, Laibson, and Madrian, 2010) but while financially savvy investors tend to minimize up-front fees they do not minimize more obscure, costly expense ratios (Wilcox, 2003; Müller and Weber, 2010). Our results confirm that numerate participants can recognize the nominal fees in the full dashboard

fee treatment. Simplifying the dashboard information into consistent annual percentage measures enabled numerate people to discern return differences but fees became less instrumental.

Other demographics and financial capability measures did not significantly explain the probability of a single switch, but one other framing effect is worth noting. The participants who were allocated to the "decreasing" conditions in T2-4 were around 24 percentage points less likely to make a single switch than those in the "increasing" conditions. In other words, participants had more difficulty evaluating changing performance due to declining returns than increasing returns. The indecision we observe in decreasing conditions is similar to the tendency of mutual fund investors to withdraw from poorly performing funds less readily than they move to highly performing funds (Sirri and Tufano, 1998).

3.2.2. Time of switches

In fee treatments, most participants switched at or very near the choice set where the outperforming plan changed. In return treatments, participants delayed switching.

Table 4 records the pattern of switches with Panel A showing the results for the standard dashboard treatments and Panel B for the simplified dashboard treatments. Each cell in the table shows the number of participants who made their first and their final switches at that choice set. We show the choice patterns of single switch participants separately. The dark gray shaded cells show the choice set where the outperforming fund changed in each treatment, and the pale gray shaded cells are the choice sets where the *10-year average return* information is either equal between the plans or unequivocally higher (lower) for the alternative plan. In other words, if participants choose only by comparing the *10-year average returns* they will switch at the first

pale gray shaded cell. The most popular switching point and the number of participants who switched at that point is shown in bold typeface.

The majority of participants in the standard dashboard *fee* treatments chose to switch plans at, or immediately after, the point at which the dominant plan changed. People were able to choose the plan with the least nominal dollar fee despite the noise introduced by small random variations. But most people delayed switching in the *return* treatments and the majority switched back and forward between the plans several times. For high volatility returns, for instance, the majority waited at least 3-6 sets after the highest net return plan changed to switch, and many continued to switch between the alternatives until the end of the 20 rounds. Only two respondents out of the 499 in T2 and T3 chased the highest net return at each choice set.

People might delay a switch because of the underlying volatility of returns. Participants might think that random variation in the return could generate short runs of good or bad returns, and thus treat emerging performance differences with some scepticism. We can see if return volatility is the reason for delays when we change the underlying target risk and return of the two funds in T4. Despite a very large reduction in volatility in T4, switches were still delayed by around five sets, with participants apparently waiting until the 10-year average net returns indicated that one plan was performing better than the other, thus clustering switches around choice set 15. Participants approached low volatility returns (equivalent to outcomes from a low-risk fixed interest and money market fund) with almost the same degree of doubt as they applied to returns from a fund with a 70% exposure to growth assets. We infer that plan members are not just cautious because of return volatility but i) attribute noise to short-term returns as an indicator of skill, and ii) find it hard to see the differences between the plans because of the complex dashboard.

We can assess some of the effects of complex information presentation when we look at how people switch in the simplified dashboard treatments (T5-7, panel B). Importantly, "simplifying" the fee information - by expressing it as a percentage of (a $50K) the account balance rather than in absolute dollars - makes the fees less salient and (presumably) harder to evaluate. Participants wait longer before they leave the higher fee plan. Results in T5 also show that the simplified returns information competes more strongly for people's attention, even though the performance difference is caused by fees. There are groups of participants in the simplified fee treatment who wait until around the 15th choice round to switch, as if they act in response to differences in 10-year average net returns rather than fees. Overall, participants delay switches to the low fee fund more often when we show them this new dashboard. We conclude that in the situation where plans differ only by their fees, the "simplifications" to the dashboard do not help members make more expert choices.

By contrast, when we consider returns (T6-7, panel B), we see clear signs that people are less confused by the new format. Many more people switch only once between plans, and although they still wait a few rounds before they commit to the better-performing plan, the delays are typically shorter. This pattern of more confident switches holds for high and low returns volatility. This implies that the way the standard dashboard frames returns is more confusing to plan members than the simplified version. In this instance, simplification raises expertise.

3.2.3. Multivariate models

To investigate the way in which participants use specific dashboard information, we estimate panel logit models of choices. Table 5 reports the average marginal effects from models of first switches for each of the treatments and conditions. (Similar models of final switches show consistent results.) The dependent variable in each model equals one when the participant

chooses XYZ (the left-hand side plan) and zero when the participant chooses the alternative plan. We define three information variables: *Δ 1 yr ret* is the difference between the 1-year net return to plan XYZ and the 1-year net return to plan ABC or HIJ (on the right-hand side). Similar definitions apply to the differences in the 10-year average net return (*Δ 10 yr ret*) and the difference in fees (*Δ Fee*). Therefore, we expect positive differences in returns (higher values of *Δ 1 yr ret* and *Δ 10 yr ret*) to increase the probability of choosing XYZ and the reverse response for fees. Further, in T4, half of the participants are shown historical return information in a table and half in a graph, so we add a binary indicator for the graph condition (*Graph*), and interact this indicator with the return and fee variables. We also add an indicator variable for participants who switched only once (*Single*) in each model.

The models of first switches show that the marginal effects of *Δ Fee* from the T1 models have the expected negative sign: we estimate a 20 percentage point lower probability of choosing the XYZ plan for fees $100 p.a. higher than the alternative. However, results from T2-4 show that when similar differences in performance show up in the 1-year returns rather than the fees, participants don't react. The marginal effects of *Δ 1 yr ret* are not significant (with one exception at 10% significance) and reducing the volatility of returns in T4 does not change this outcome. In contrast, a higher *Δ 10 yr ret* makes first switches to XYZ more likely for the decreasing conditions of T2 and T3, and for both conditions in T4. In these cases, a 0.5% p.a. higher 10-year average net return, for example, makes first switches to XYZ between 35 and 40 percentage points more likely. These results confirm that 10-year average returns are easier to see and are probably judged as more reliable by participants (see also Benartzi, 2001; Benartzi and Thaler, 1999; Choi, Laibson, and Madrian 2010). Participants also seem to have taken notice of the

differences in the fees in T2-4, even though the variations are small and randomised. And finally, in some instances, the graph is related to longer delays than the table.

For the simplified dashboard, the *Δ 10 yr ret* is a significant and positive predictor of first switches for all but one of the returns conditions. The *Δ 1 yr ret* also influences choices more than in the full dashboard, with the expected positive sign. Conversely, participants use fee information much less, probably because plan differences in fees are less noticeable when expressed as a percentage rather than in nominal terms.

Overall, the results in Tables 4 and 5 confirm our earlier judgements. They show that plan members interpret fee and return information in a way we might expect: they prefer low fee, high return plans. However, while large changes in fees prompt people to switch almost immediately, it takes longer and larger signals in returns to motivate a change. Members take notice of both short-term and long-term returns, but delay a switch to the better performing plan until they see several years of short-term outperformance. Even when return volatility is low and returns themselves are persistent, members wait to switch. Differences in results between the standard prescribed and simplified dashboards is evidence that members' unwillingness to switch in response to return differences is not only due to a cautious appraisal of noisy signals about skill, a view that is probably reinforced by the placement of warnings on both the full and simplified dashboards, but is also caused by confusing information.

3.2.4. A Bayesian estimate of the effects of complexity

When it comes to returns, the dashboard warns people that past performance is not necessarily an indication of future outcomes. So, participants might be sceptical of return differences between plans without having any clear understanding of how such differences arise, or they could treat

returns as a noisy signal of manager skill. In this subsection, we compare participants' delayed switches across different treatments using a Bayesian updating model with normal priors. The model generates estimates of the relative noisiness of the signals from fees and returns across different treatments. The differences between these estimates for the standard prescribed and simplified dashboards measure the effect of information framing. We do not propose that participants actually use this exact process in deciding on plans, even though we observe people choosing in a qualitatively similar way. We merely treat choices as if the model is true and use it to measure and compare signals.

Consider a plan member who believes that the 1-year net rate of return to plan i (XYZ; ABC, HIJ) is a normally distributed random variable $Y_i,\ i=1,2$ consisting of the true signal of the plan's performance x_i and noise component related to unpredictability, ε, assumed to be the same for both plans, $Y_i = x_i + \varepsilon$, where $x_i \sim N(\mu_{x_i}, \sigma^2_{x_i})$, $\varepsilon \sim N(0, \sigma^2_{\varepsilon})$ and ε is independent of x_i

At the first choice set, participants use the return target and risk information to choose parameters for the prior distribution of x_i. The two plans are designed to have the same strategic asset allocation and thus the same return target and risk. By assumption, therefore, a person choosing between them will hold the same prior distributions for both plans. The dashboard shows the return target as a real rate of return over the CPI, a member must estimate future

inflation to calculate (nominal) μ_x.[21] Next, for σ_x^2, the plan member must combine their μ_x estimate with the quantile information in the dashboard risk section.[22]

The plan member then forms a posterior distribution for x_i by updating their beliefs about its mean at each new choice set. (We assume a constant estimate of the variance σ_x^2, because the target risk measure for the plans does not change across rounds and is the same for both funds.) Members update their posterior mean using the new signal about 1-year net returns for each plan, $y_{i,t}$, $t = 1, 2, ..., 20$, weighted by their beliefs about the relative variability of the true distribution of x and ε. The posterior mean at each choice is: $E_t[x_i \mid Y_i = y_{i,t}] = \mu_{x_i} + \frac{\sigma_x^2}{\sigma_x^2 + \sigma_\varepsilon^2}(y_{i,t} - \mu_{x_i})$.

Beginning with a prior expectation for x based on the return target and risk information at the first choice set, the participants compute the posterior $E_1[x_i \mid Y_i = y_{i,1}]$ for each plan conditional on the 1-year net return signal and use this posterior expectation as the prior value of μ_{x_i} for the second choice set, and so on. At each choice set, participants should prefer the plan with the higher (posterior) expected return $E_t[x_i \mid Y = y_{i,t}]$. If $\sigma_\varepsilon^2 = 0$, then $E_t[x_i \mid Y = y_{i,t}] = y_{i,t}$ and participants will prefer the plan with the higher net return and switch when the dominant plan changes. However, as σ_ε^2 increases, the posterior mean changes more slowly and people will wait for more evidence of superior performance before switching plans.

[21] We use the Australian central bank's inflation target band midpoint, that is 2.5% p.a., as the inflation expectation.
[22] In T1-3 and T5-6, a return target of CPI+3 ($m_x = 0.055$), and risk information stating that the probability of a (nominal) return below zero is 3-4 years in every 20 (Pr(x<0)=0.175) means a normal standard deviation of 5.9% p.a. (σ_x^2 =0.003481). In the low noise treatments, T4 and T7, the related parameters are $\mu_x = 3.5\%$, σ_x = 1.8% p.a.

Using this setup, we can infer a value for $\hat{\sigma}_\varepsilon$ that justifies a switch at each choice set after the set at which the dominant plan changes from one to the other. We can assign this value to participants who delay their switch to that choice set. To make the comparison easier, we report the inferred value of $\hat{\sigma}_\varepsilon$ as a scaling of σ_x so that $\hat{\sigma}_\varepsilon = \hat{s}\sigma_x$.[23] The scaling factor indicates the proportions of signal and noise that plan members extract from the net returns in this updating model. This scaling is an instrument for gauging the scepticism that participants attribute to returns in different treatments. If the underlying return and fee information is the same across treatments (e.g., T1 and T5, T2 and T6, T4 and T7), then we can say that changes in the estimate of $\hat{s}$ between these pairs are due to information framing, that is, to simplification.

Table 6 reports the summary statistics by treatment for the *s* factor that the final switches of participants indicate. The median estimated scaling factor for full dashboard fee treatments are around 1.2-1.3, compared with 2.5-3.6 for T2 and 3.6 for T3. Tests confirm that for the standard dashboard, mean scaling factors for fee treatments are significantly lower than for return treatments, including the low volatility return treatment (Panel B, rows 1-4). In other words, participants treat return information as about twice as noisy as fee signals when they see the standard dashboard.

More importantly, when we compare the mean scaling factors of the returns signals in the standard and the simplified dashboard treatments we see a large and significant reduction in estimated scaling factors. The median scaling factor for participants who compared plans by the standard dashboard was 3.616 (T2, Decreasing). For participants who saw the same returns and

[23] Since a range of values for *s* can be consistent with a delayed choice, we assign a value to *s* so that the difference between the two posterior means is arbitrarily small: $E_t[x_i \mid Y_i = y_{i,t}, \hat{s}] - E_t[x_j \mid Y_j = y_{j,t}, \hat{s}] = |0.0001|$.

fee information sequence in the simplified dashboard, the median scaling factor was 2.043 (T6, Decreasing), a reduction of 43.5%. At the low volatility treatments, the simplified dashboard generated a 43% lower median scaling factor (T4, Decreasing cf. T7, Decreasing). It's also no surprise that tests that compare the means of scaling factors from the standard and simplified dashboards all reject equality at very low probabilities (Panel B, rows 7-9). Thus these results show that a major reason for the delayed and disordered switches people make when they look at the standard dashboard is confusion caused by complex presentation, over and above any uncertainty they have about the relation between past performance and manager skill.

Yet the simplification also *raises* scaling factors for some of the fee treatments. The mean scaling factor is significantly higher for T5 than T1 in the decreasing condition, but not so in the increasing condition (Panel B, row 6). In general, in the simplified dashboard, differences between fee and return treatments are less marked, though still significant in three of four cases. These results show that the change we make to fee information – from nominal dollars to percentage – added to some people's confusion. In this instance, the results do not support our expectation that people would be helped if they see returns and fees in a scale compatible way.

Comparing the scaling factors between the graph (T2) and table (T3) treatments (increasing condition) supports the idea that people are more confused by the graph than the table, since mean scaling factors are significantly lower (around 0.7) when returns are shown in a table (Panel B, row 10). However, we do not detect any difference in the decreasing condition, where the standard deviation of the noise distribution is estimated to be 3.6 times as large as the standard deviation of the underlying return, on average. The participants in the decreasing conditions apparently find it very hard to see any clear evidence of one plan being better than the other no matter if the information comes in a table or a graph.

Participants assign a little less noise to the low volatility return treatments than to the high volatility return treatments. However, the mean scaling factors are still close to 2, and insignificantly different from the scaling factors for the high volatility treatments in half the tests. So, we conclude that the members' ability to notice or willingness to rely on returns signals is less, even when the true return volatility is low.

It seems intuitive that some people could be more susceptible to complex information than others. To detect these associations, we regress individual scaling factors on participant characteristics including demographics, their overall comprehension of the dashboard information, various financial literacy scores and an indicator for whether they passed the attention check in the survey. Table 7 reports the estimates of marginal effects from these regressions. The R^2 statistics show that participants' characteristics explain between 10% and 30% of the variation in the scaling factors. Higher scores in tests of comprehension, numeracy, financial, and superannuation literacy are generally associated with lower scaling factors, though the estimates are not always statistically significant. These estimates indicate that more financially literate participants discern signals better or treat them with less uncertainty than less financially literate participants. These effects are large and significant in several of the models.

3.2.5. Indicative costs of complexity

An inefficient choice of retirement plan will be costly to plan members. To estimate the costs of choosing an inefficient plan in the experiment, we compute an indicative final account balance after 20 choices for each participant. We assume that they begin with a $50K balance and do not contribute or withdraw any savings. (In the returns conditions, for example, average final account balances are around $155K.) Our account balance calculation includes deductions for

fees and charges. We also compute the maximum possible final account balance. We then calculate the average percentage difference between participants' realized balances and the maximum. The last row in each panel in Table 4 reports the average (per participant) percentage loss for each treatment and condition. We then test for the equality of the average percentage losses between full and simplified dashboard conditions. If the differences are significant, then less complexity makes members better off, on average.

Two factors significantly affect the average losses we calculate here: the source of the outperformance signal and information framing. Average losses are lowest (0.3%) in the full dashboard with fee treatments but rise to three or four times as large in the full dashboard with return treatments (up to 1.3% of final account balance). Thus we find that some rudimentary simplifications to format make a dramatic difference to the losses. The participants who view the simplified dashboard incur losses that are around one third less than for the full dashboard conditions, amounting to a difference of up to 0.5% of their final account balance. However, our reframing of fee information into annual percentages rather than dollar amounts does not help – it increases losses by around 0.1%.

4. Concluding Remarks

Theoretical and empirical studies show how financial firms use complex products and price information to preserve price dispersion, limit competition and impede the expertise of consumers (Carlin, 2009; Carlin and Manso, 2010; Henderson and Pearson, 2011; Célérier and Vallée, 2017). People are especially confused by retirement savings decisions, find comparisons difficult and consequently apply little competitive discipline to the plans themselves. There is plentiful evidence for persistent inefficiency among plans, both in the U.S. and abroad.

Consumer advocates and regulators argue that plan members can read simple disclosures to compensate for their lack of expertise. However, standardized product disclosures can have unforeseen effects on consumers' decisions. We test an information intervention, or dashboard, intended to make it easier for retirement plan members to compare plans – first in its basic form – then with various "simplifications". We limit our tests to fee and return information, since these two elements convey the fundamental information about the performance of a retirement plan.

First, and in some contrast to what the previous research seems to suggest (Beshears, Choi, Laibson, and Madrian, 2011; Choi, Laibson, and Madrian, 2010; Wilcox, 2003), we find that plan members respond quickly to the outperformance that shows up in nominal fee differences. However, "simplifying" fees to scale-compatible percentages did not improve choices, and in some cases made decisions significantly worse. Participants switch away from the under-performing fund more slowly when they see the percentage version of the fee, and pay more attention to other information. Our results show that the simplification that aimed to help people integrate fee and return information made fees less "in your face", and support the disclosures of fees in nominal dollars.

Second, our results show that a major reason for the delayed and disordered switches people make when they look at the standard dashboard is confusion caused by complex presentation, over and above any uncertainty they have about the relation between past performance and manager skill. Participants who think that past returns are a noisy signal of manager skill will not react quickly to the outperformance in short-term returns and will update their expectation of relative returns over several years of short-term outperformance. However, we show that participants switch away from an underperforming manager more slowly and tentatively before

we simplify returns information, and react faster after simplification. We test the possibility that this delay could be related to "volatility aversion", but find that even when the return volatility is very low, simplification changes choice patterns. These tests show that complexity makes performance evaluation difficult.

Third, we show that choosing the right disclosure simplifications is not simple. Firms or regulators who want to improve disclosures should find out what information items people use, and how they use them, before they settle on new formats. Techniques that might be expected to improve comprehension can be ineffective. The methods regulators used for testing the dashboard we study here – running focus groups and conducting interviews that aim to test comprehension - are standard internationally. But our results support previous views that testing via focus groups and in-depth interviews is insufficient when it comes to informing product design and policy in general (Gillis, 2015). Our incentive-compatible experimental testing also reveals the importance of going beyond such methods when assessing the comprehension, use and effectiveness of simplified or standardized formats.

Our work points to several areas for further study of how expertise in consumer financial decision-making can be supported by simplification. First, the MySuper dashboard ensures that plans report the same set of information calculated in the same standard way but does not allow the comparable information of two plans to be presented simultaneously (on the same page). Although we provide this type of comparison to the participants in our study, such a method of presentation still has limitations. Because the information is presented by "alternatives" rather than by "attributes", it encourages members to collect all the information about one plan and then the other rather than facilitating direct comparisons. Research shows such "alternative-wise" search and comparison strategies take longer to execute (Payne, Bettman, and Johnson, 1993)

and are more cognitively taxing than "attribute-wise" strategies (Russo and Dosher, 1983). Perhaps a "smart" interactive disclosure where members could populate a single table with attribute(s) data from two or three plans at once would emphasize differences and facilitate choice. Research that examines the communication of risk in portfolio choice highlights the significant potential of such interactive tools (Goldstein, Johnson, and Sharpe, 2008). Second, disclaimers and warnings appear to help compensate for lack of expertise: our results indicate that plan members pay attention to such disclaimers and warnings, and assign more importance to fees and less to short-term returns. A potential direction for future research is to examine the impact of placing warnings and disclosures on *fee* information. Fees are also subject to change, and are nonlinearly related to account balances – aspects that may not be readily apparent to consumers. If such information was provided – and the disclaimers about returns were removed – then we might observe a corresponding switch in the information regarded as most important. Such a test would also add to our understanding of the uncertainty plan members ascribe to returns as indictors of manager skill.

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Figure 1: Screenshot from Treatment 2

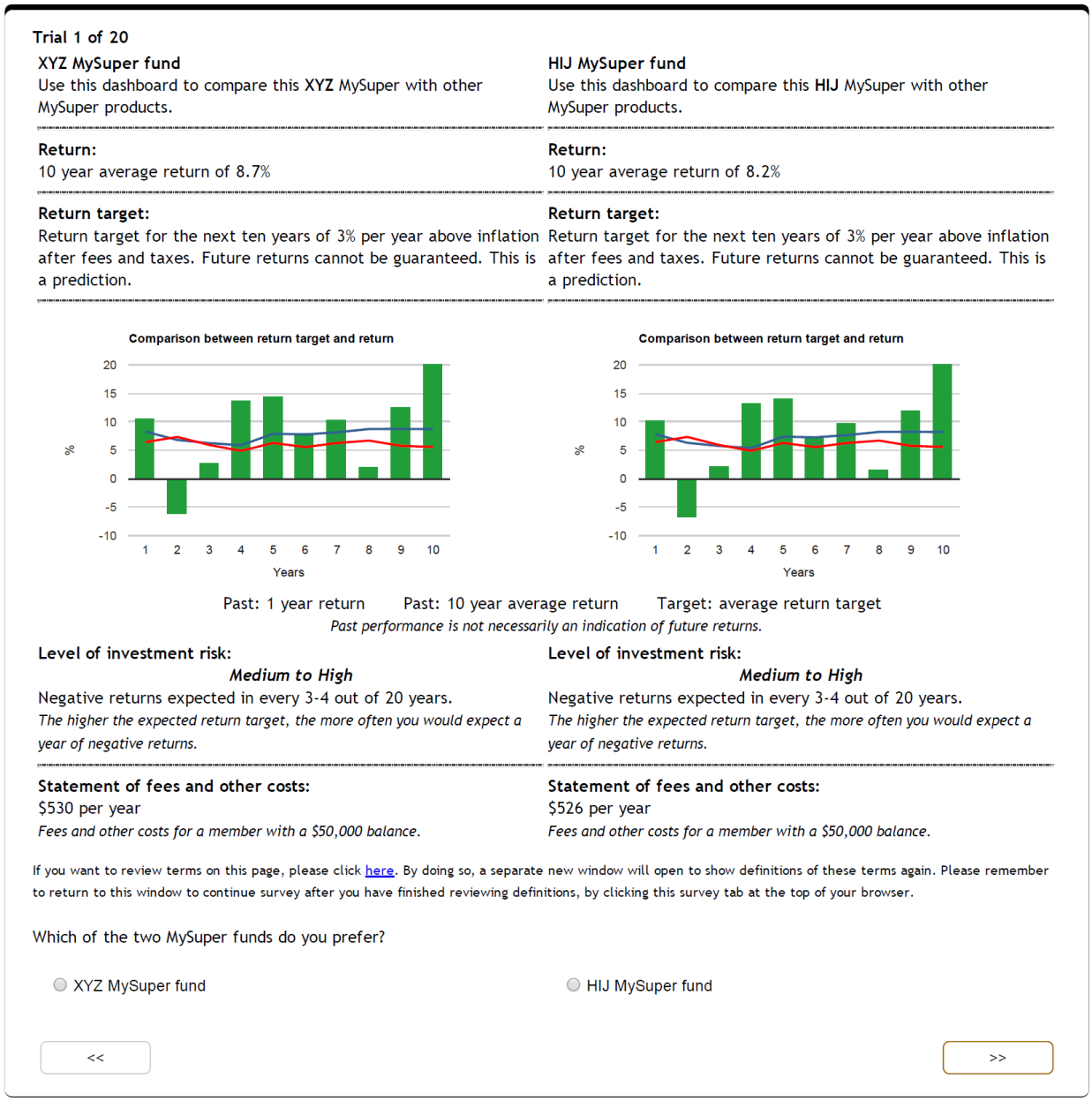
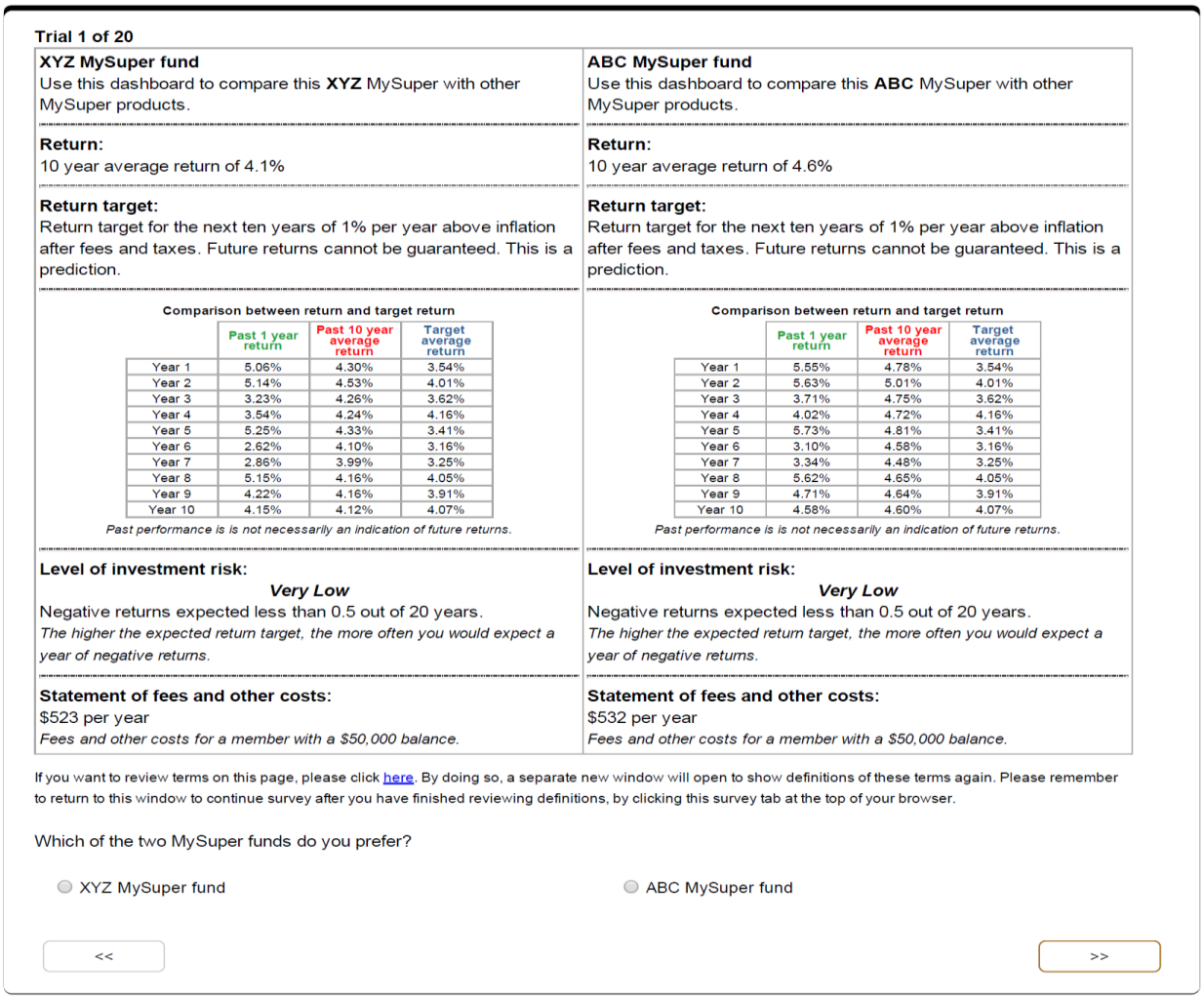


Figure 2: Screenshot from Treatment 4, table condition



Trial 1 of 20

XYZ MySuper fund
Use this dashboard to compare this **XYZ** MySuper with other MySuper products.

Return:
10 year average return of 4.1%

Return target:
Return target for the next ten years of 1% per year above inflation after fees and taxes. Future returns cannot be guaranteed. This is a prediction.

Comparison between return and target return

	Past 1 year return	Past 10 year average return	Target average return
Year 1	5.06%	4.30%	3.54%
Year 2	5.14%	4.53%	4.01%
Year 3	3.23%	4.26%	3.62%
Year 4	3.54%	4.24%	4.16%
Year 5	5.25%	4.33%	3.41%
Year 6	2.62%	4.10%	3.16%
Year 7	2.86%	3.99%	3.25%
Year 8	5.15%	4.16%	4.05%
Year 9	4.22%	4.16%	3.91%
Year 10	4.15%	4.12%	4.07%

Past performance is is not necessarily an indication of future returns.

Level of investment risk:
Very Low
Negative returns expected less than 0.5 out of 20 years.
The higher the expected return target, the more often you would expect a year of negative returns.

Statement of fees and other costs:
$523 per year
Fees and other costs for a member with a $50,000 balance.

ABC MySuper fund
Use this dashboard to compare this **ABC** MySuper with other MySuper products.

Return:
10 year average return of 4.6%

Return target:
Return target for the next ten years of 1% per year above inflation after fees and taxes. Future returns cannot be guaranteed. This is a prediction.

Comparison between return and target return

	Past 1 year return	Past 10 year average return	Target average return
Year 1	5.55%	4.78%	3.54%
Year 2	5.63%	5.01%	4.01%
Year 3	3.71%	4.75%	3.62%
Year 4	4.02%	4.72%	4.16%
Year 5	5.73%	4.81%	3.41%
Year 6	3.10%	4.58%	3.16%
Year 7	3.34%	4.48%	3.25%
Year 8	5.62%	4.65%	4.05%
Year 9	4.71%	4.64%	3.91%
Year 10	4.58%	4.60%	4.07%

Past performance is is not necessarily an indication of future returns.

Level of investment risk:
Very Low
Negative returns expected less than 0.5 out of 20 years.
The higher the expected return target, the more often you would expect a year of negative returns.

Statement of fees and other costs:
$532 per year
Fees and other costs for a member with a $50,000 balance.

If you want to review terms on this page, please click here. By doing so, a separate new window will open to show definitions of these terms again. Please remember to return to this window to continue survey after you have finished reviewing definitions, by clicking this survey tab at the top of your browser.

Which of the two MySuper funds do you prefer?

○ XYZ MySuper fund ○ ABC MySuper fund

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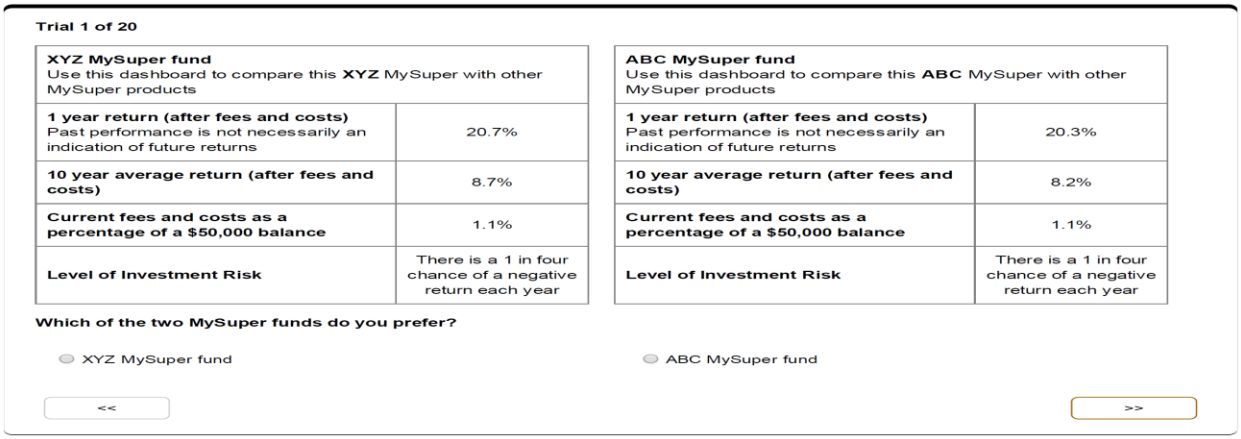
Figure 3: Screenshot from Treatment 6, simplified dashboard



Trial 1 of 20

XYZ MySuper fund Use this dashboard to compare this **XYZ** MySuper with other MySuper products	
1 year return (after fees and costs) Past performance is not necessarily an indication of future returns	20.7%
10 year average return (after fees and costs)	8.7%
Current fees and costs as a percentage of a $50,000 balance	1.1%
Level of Investment Risk	There is a 1 in four chance of a negative return each year

ABC MySuper fund Use this dashboard to compare this **ABC** MySuper with other MySuper products	
1 year return (after fees and costs) Past performance is not necessarily an indication of future returns	20.3%
10 year average return (after fees and costs)	8.2%
Current fees and costs as a percentage of a $50,000 balance	1.1%
Level of Investment Risk	There is a 1 in four chance of a negative return each year

Which of the two MySuper funds do you prefer?

○ XYZ MySuper fund ○ ABC MySuper fund

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Table 1: Description of each treatment

Treatment Number (n)	Date	Dashboard Type	Changing Information	Returns Volatility	Returns Display Format
1 (286*)	Jul 2014	Prescribed ('Full')	Fees	High	Graph
2 (274)	Sep 2014	Prescribed ('Full')	Returns	High	Graph
3 (252)	Feb 2015	Prescribed ('Full')	Returns	High	Table
4 (247)	Jun 2015	Prescribed ('Full')	Returns	Low	Graph/Table
5 (251)	Aug 2015	Simplified	Fees	High	N/A
6 (250)	Oct 2015	Simplified	Returns	High	N/A
7 (258)	Oct 2015	Simplified	Returns	Low	N/A

* 138 Incentivized and 148 Non-incentivized – all participants in remaining treatments are incentivized – see text for explanation of incentive implementation.

Notes: *Prescribed ('Full'*) identifies treatments that use the MySuper template described in Commonwealth of Australia (2013) - return target, returns, a comparison between the return target and the returns, the level of investment risk, and a statement of fees and other costs - as explained in the text. *Simplified* identifies the use of radically simplified templates (see text for details). Variation in the volatility of returns is engineered by changing the relative allocation to growth and defensive assets. In treatments T1-3 and T5-6 we mimic the allocation of a typical strategic asset allocation fund by including a weighted mix of growth and defensive assets, which give us our high volatility treatments. In treatments T4 and T7 only defensive assets are included, thus yielding a lower target return and lower volatility realized returns.

Table 2: Information use reported by participants

Panel A: Full dashboard	**% of responses**	**Diff. in mean (t-stat)**
What is the most useful piece of information? (Choose one)		
10-year average return	57.7	(-4.776)
Return target	8.7	na
Table	10.9	na
Graph	7.8	na
Level of investment risk	3.5	(-5.152)
Fees and costs	21.2	(5.416)
Fee condition (Treatment 1)	35.0	(4.041)
Returns conditions (Treatments 2-4)	16.2	(4.482)
What pieces of information did you use most often? (Choose any that apply)		
10-year average return	66.3	(17.001)
Return target	23.3	na
Table	20.4	na
Graph	13.8	na
Level of investment risk	21.0	(-0.196)
Fees and costs	59.2	(10.155)
Fee condition (Treatment 1)	72.4	(4.739)
Returns conditions (Treatments 2-4)	54.3	(9.950)
Panel B: Simplified dashboard	**% of responses**	
What is the most useful piece of information? (Choose one)		
10-year average return	68.6	
1-year return	10.5	
Level of investment risk	9.2	
Fees and costs	11.6	
Fee condition (Treatment 5)	19.5	
Returns conditions (Treatments 6-7)	7.7	
What pieces of information did you use most often? (Choose any that apply)		
10-year average return	76.4	
1-year return	28.7	
Level of investment risk	21.3	
Fees and costs	35.7	
Fee condition (Treatment 5)	53.0	
Returns conditions (Treatments 6-7)	27.2	

Notes: Column 1 shows the percentage of participants reporting use of the information items in the full dashboard (Panel A) and the simplified dashboard (Panel B). Column 2 reports the t-statistics for the test of equality in means between the full and simplified dashboard treatments. Total number of participants in T1-4 is 1,059, of which there are 286 in T1 (fee condition with graph); 274 in T2 (returns condition with graph); 252 in T3 (returns conditions with table); and 247 in T4 (low volatility returns condition with table or graph). Total number of participants in T5-7 is 759, of which there are 251 in T5 (fee condition); 250 in T6 (low noise returns condition); and 258 in T7 (high noise returns condition). Participants are randomly assigned to either view increases or decreases in fees or returns over the 20 choice sets.

Table 3. Rates of single interior switching: counts and logit estimation

Panel A: Single switching	T1 Fee	T2 Return (Graph)	T3 Return (Table)	T4 Return (Low Vol)	T5 Fee	T6 Return	T7 Return (Low Vol)
Single switchers (%)	76.2	21.2	35.3	39.7	70.9	70.8	64.0
Panel B: Marginal effects from logit estimations (Dependent variable: single interior switch =1, and 0 otherwise)							
Decreasing condition	0.023	**-0.274**	**-0.244**	**-0.334**	-0.021	0.041	-0.099
Female	**0.147**	-0.003	0.078	-0.072	0.067	0.062	**0.115**
Age 40-59 yrs	0.018	0.066	-0.051	0.024	0.068	-0.014	**0.133**
Age 60+ yrs	0.097	**0.231**	-0.082	0.072	**0.223**	0.135	0.124
High school graduate	0.097	0.078	0.073	-0.009	-0.014	-0.042	0.070
College diploma/degree	**-0.102**	-0.002	-0.094	-0.018	0.004	-0.015	-0.077
Employed	-0.048	-0.033	**0.204**	0.089	0.026	-0.094	-0.115
Retired	0.055	**-0.189**	**0.509**	0.083	-0.244	-0.168	-0.019
Married/de facto	-0.019	0.024	-0.047	**0.151**	-0.038	-0.110	-0.005
Financial decision maker	-0.022	0.049	-0.005	0.033	0.029	-0.055	-0.082
No dependents	-0.027	-0.021	-0.025	0.101	-0.022	-0.011	**0.138**
Weekly inc. ($1-$399)	-0.005	0.171	0.176	-0.169	0.057	-0.103	**-0.414**
Weekly inc. ($400-$999)	-0.045	0.089	0.084	-0.118	-0.044	-0.102	-0.111
Weekly inc. ($1000+)	0.061	0.082	0.122	-0.192	0.045	0.022	-0.139
Retirement balance (ln$)	-0.010	-0.019	0.010	0.001	0.005	-0.007	-0.014
Comprehension	0.023	-0.002	0.024	0.085	-0.014	0.016	0.010
Financial literacy	**0.097**	0.044	0.008	0.038	0.005	**0.060**	0.051
Numeracy	**0.059**	0.013	0.050	0.059	**0.076**	**0.106**	**0.107**
Superannuation literacy	0.004	0.028	-0.018	0.023	0.051	0.008	0.078
Passed attention check	0.017	0.053	0.117	**0.267**	**0.239**	0.127	-0.119
Obs.	286	273	252	247	251	250	258
Pseudo R2	0.24	0.20	0.14	0.20	0.17	0.25	0.19

Notes: Panel A shows the per cent of participants who switch plans once during the task. Panel B shows the marginal effects from logit estimations of the probability that a participant made one (interior) switch. Standard errors (not reported here) are clustered by participant id. Effects in bold typeface are significant at the 5% level or less. Explanatory variables are: *Decreasing* is a binary variable equal to two if participant responded to decreasing condition and one for increasing; *Female* equals one for female participants and zero for males; *Age* is a polychotomous variable equals 0 if participants are under 39 years old, 1 if between 40 – 59 years old, and 2 if over 60 years; *Married/de facto* equals one if married or living in de facto relationship and zero otherwise; *Financial decision* equals one if the participant himself/herself is most responsible for the major financial decisions and zero otherwise; *No dependents* equals one if the participant only supports himself/herself financially and zero if more than one person; *High school graduate* equals one if the participant graduated from high school and zero otherwise; *College diploma/degree* equals one if the highest school qualification is Bachelor Degree/Graduate Diploma/Master Degree/PhD and zero otherwise; *Employed* is a polychotomous variable taking the value zero if unemployed/not in the labour force (inc. stay-at-home parents, full-time students, or others), one if employed part-time or full-time, and two if retired; *Weekly income* is a polychotomous variable taking the value of zero if negative or nil weekly (annual) gross personal income (before tax), 1 if $1-$399 ($1-$20,799), 2 if $400-$999($20,800-$51,999), 3 if $1,000 or more ($52,000 or more); *Comprehension* is the number of correctly answered comprehension questions on the dashboard; *Financial literacy* is the number of correctly answered financial literacy questions; *Numeracy* is the number of correctly answered numeracy questions; *Superannuation literacy* is the number of correctly answered superannuation literacy questions; *Passed attention check* is a binary variable equal to one if participants passed the attention check question and zero otherwise; and *Retirement balance* is the log of participants' reported retirement account balance or zero for missing balance.

Table 4: Numbers of participants switching at each choice set. Panel A: full dashboard

	Fee (Treatment 1)						**Returns/Graph (Treatment 2)**						**Returns/Table (Treatment 3)**						**Returns/Low vol (Treatment 4)**					
	Single		**First**		**Final**		**Single**		**First**		**Final**		**Single**		**First**		**Final**		**Single**		**First**		**Final**	
	I	**D**	**I**	**D**	**I**	**D**	**I**	**D**	**I**	**D**	**I**	**D**	**I**	**D**	**I**	**D**	**I**	**D**	**I**	**D**	**I**	**D**	**I**	**D**
Set																								
2			5	6	1				8	12		2	1	1	5	7	1	1		2	5	7		1
3			3	2					3	3					7	6	1				5	4		1
4			1	2					2	2						2					11	2		
5			2	2					1	3					1	2	3				2	4		
6				2					3	2					1	1					2	4		
7			1	2					2	5	1				1	4								
8	2		2	1	2					1						1					3	2		
9				2						3						3						3		
10	1	7	2	7	1	10																4	1	
11	2	**52**	3	**56**	4	**56**			3			1										7		
12	29	17	32	21	30	18				1			2		2		2	1			2			
13	**34**	21	**34**	21	**37**	25			5	6		2			5	1	3			2	1	3	3	3
14	19	6	19	6	23	14				**56**			1	2	2	**45**	5	7	22	10	15	**40**	16	6
15	16	10	16	12	19	10	4		12		9		**29**	4	**46**	5	**34**	5	16	4	8	3	12	6
16		1		1	3	3	**37**		**51**		**51**	1	11	1	14	1	26	5	**80**	**12**	**45**	9	**44**	**40**
17	1		1		3	3	3	**8**	4	12	6	**81**	4	**14**	4	15	9	**47**	10	10	5	5	8	32
18					2	3	2		2	1	9	6	7		7		15	4	6	4	5	2	8	7
19					5	4	1	2	1	4	36	34	3	4	3	5	11	34	4	8	2	4	9	14
20					4						19	4	3	2	3	2	10	10		2		1	14	5
% Loss	I: -0.26**			D: -0.29*			I: -0.98			D: -1.20			I: -0.82			D: -1.30			I: -0.78			D: -0.95	

Table 4 continued. Panel B: simplified dashboard

	Fee (Treatment 5)						Returns; (Treatment 6)						Returns; Low vol (Treatment 7)					
	Single		First		Final		Single		First		Final		Single		First		Final	
	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D
Set																		
2			7	3					4	3					9	4		
3			1	1					2	6					3	3		
4			2	4						4					7	1		
5			1	1						3							1	
6				2	3				4	1					2			
7			1		1				2	1						1		
8										1	1							
9									1	1							1	1
10		1	4	3		1				1	1	1		1		11	1	1
11	1		2	2	1	1		2		6		5				9	1	
12	**29**	13	**36**	15	**35**	13						1	9		12		12	
13	16	**44**	17	**52**	18	**47**	6	6	9	6	9	7	1	14	5	14	2	26
14	13	9	13	11	17	9	1	**70**	10	**71**	11	**76**		**56**		**59**	2	**72**
15	18	24	18	24	23	38	**60**	2	**62**	3	**68**	8	10	5	11	5	15	9
16	1	1	1	1	3	5	6		6		8	4	**49**	2	**49**	2	**62**	7
17	1	1	1	1	4	2	1	8	1	8	5	12	12	**2**	12	2	15	**3**
18	2	2	2	2	6	5	3	1	3	1	7	4		1		1		7
19					2	5					4	2					3	4
20					3	1		1		1	8	5					2	
% Loss			I: -0.40			D: -0.45			I: -0.59***			D: -0.75***			I: -0.81			D: -0.49***

Notes: This table shows the number of participants that switch plans at each choice set. We exclude suboptimal switches at the first set. The "Single" column shows participants who made one switch in 20 choices; the "First" column shows the first switching point for all participants who made one or more switches: the "Final" column shows the last switching point for all participants who made one or more switches. The "I" indicates conditions where the returns to alternative plan (HIJ) are increasing relative to the constant plan (XYZ); "D" indicates conditions where the alternative plan returns (ABC) are decreasing relative to the constant plan (XYZ). The dark grey cells show optimal switching points. The pale grey cells show sets where the 10-year average returns to HIJ (ABC) are equal to or higher (lower) than (XYZ). The maximum switches in bold. The last row shows the average per cent of lost balance due to suboptimal switching and the t-test for equality of means between full and simplified dashboard treatments. **p<0.05; ***p<0.01.

Table 5: Marginal effects of information variables on plan switches

	First switch						
	Δ1 yr ret	Δ10 yr ret	ΔFee	Single	Graph	Ps. R2	Obs.
Full dashboard							
Treatment 1 (FEE, GRAPH)							
Increasing			-0.002***	-0.024*		0.433	2780
			0.000	*0.070*			
Decreasing			-0.002***	-0.156*		0.595	2940
			0.000	*0.049*			
Treatment 2 (RETURNS, GRAPH)							
Increasing	0.515	0.318	0.002	0.058		0.232	2720
	0.325	*0.364*	*0.001*	*0.037*			
Decreasing	0.269	0.727***	-0.005***	-0.228***		0.267	2760
	0.245	*0.283*	*0.001*	*0.034*			
Treatment 3 (RETURNS, TABLE)							
Increasing	0.473*	0.440	-0.004*	0.055		0.287	2520
	0.255	*0.315*	*0.001*	*0.044*			
Decreasing	0.258	0.693**	-0.004***	-0.149***		0.261	2520
	0.255	*0.293*	*0.001*	*0.046*			
Treatment 4 (LOW VOLATILITY RETURNS, GRAPH or TABLE)							
Increasing	0.187	0.751**	-0.005***	0.250***	-0.148***	0.395	2460
	0.293	*0.331*	*0.001*	*0.044*	*0.042*		
Decreasing	0.193	0.805**	0.003***	-0.180***	0.039	0.315	2480
	0.280	*0.318*	*0.001*	*0.047*	*0.047*		
Simplified dashboard							
Treatment 5 (FEE)							
Increasing		0.505***	-0.556***	0.073		0.395	2460
		0.081	*0.063*	*0.059*			
Decreasing		-0.313***	-1.270***	-0.101*		0.518	2620
		0.079	*0.061*	*0.054*			
Treatment 6 (RETURNS)							
Increasing	0.984***	-0.020		0.032		0.414	2460
	0.041	*0.046*		*0.062*			
Decreasing	-0.019	1.189***	-1.843***	-0.215***		0.481	2540
	0.088	*0.100*	*0.220*	*0.057*			
Treatment 7 (LOW VOLATILITY RETURNS)							
Increasing	-0.041	1.030***	-1.399***	0.032***		0.413	2460
	0.068	*0.086*	*0.095*	*0.055*			
Decreasing	2.551***	6.094***	1.678	-0.131		0.419	2700
	0.451	*0.622*	*1.266*	*0.400*			

Notes: This table shows the estimated marginal effects of explanatory variables from logit models of participants' first switches in 20 plan choices. The "Δ1 yr ret" is the difference in the 1-year net returns (XYZ-ABC/HIJ); "Δ10 yr ret" is the difference in the average 10-year net returns; "ΔFee" is the difference in fees; "Single" is a binary indicator for participants who made one switch between funds; "Graph" is a binary indicator for when historical returns are presented as a graph (not a table). Variables are omitted from models of T1 and T6 (increasing) because of collinearity. Standard errors are clustered by participant. The delta-method standard errors in italics. *p<0.1; **p<0.05; ***p<0.01.

Table 6: Scaling Factors

	Increasing				Decreasing			
Panel A: Summary Statistics	Median	Mean	St'd Dev.	Obs.	Median	Mean	St'd Dev.	Obs.
T1: Full Dashboard; Fee	1.337	1.818	2.083	139	1.196	1.283	1.787	147
T2: Full Dashboard; Return; Graph	3.634	3.695	1.445	136	3.616	4.491	1.819	138
T3: Full Dashboard; Return; Table	2.501	3.022	1.664	126	3.616	4.951	2.302	126
T4: Full Dashboard; Return; Low vol.	1.990	2.660	1.682	123	3.252	4.092	3.346	124
T5: Simple Dashboard; Fee	1.717	1.781	2.068	120	2.051	2.798	2.667	127
T6: Simple Dashboard; Return	2.071	2.454	1.197	123	2.043	2.622	1.752	125
T7: Simple Dashboard; Return; Low vol.	1.990	2.057	1.518	117	1.856	2.557	2.643	135
Panel B: Tests of equal means			p-value				p-value	
T1 = T2 (Fee v. Returns, Graph)			0.000				0.000	
T1 = T3 (Fee v. Returns, Table)			0.000				0.000	
T1 = T4 (Fee v. Returns, Low vol.)			0.000				0.000	
T5 = T6 (Fee v. Returns)			0.002				0.731	
T5 = T7 (Fee v. Returns, Low vol.)			0.238				0.621	
T1 = T5 (Full v. Simple dashboard, Fee)			0.886				0.000	
T2 = T6 (Full v. Simple dashboard, Returns)			0.000				0.000	
T3 = T6 (Full v. Simple dashboard, Returns)			0.002				0.000	
T4 = T7 (Full v. Simple dashboard, Low vol.)			0.004				0.000	
T2 = T3 (Graph v. Table)			0.001				0.075	
T2 = T4 (High v. Low vol.; Graph condition)			0.000				0.608	
T3 = T4 (High v. Low vol.; Table condition)			0.498				0.027	
T6 = T7 (High v. Low vol.)			0.024				0.815	

Notes: This table shows the summary statistics and t-tests of Bayesian scaling factors for the standard deviation of noise distribution. A scaling factor of two indicates that the standard deviation of the noise distribution is twice as large as the standard deviation of the underlying return distribution. Scaling factors are assigned to participants in each treatment depending on the choice set at which they make a final switch. The participants who switch at or before the experimentally optimal set are assigned a scaling factor of zero.

Table 7. Marginal effects from OLS regression of scaling factors on participant characteristics

	T1 Fee		T2 Return (Graph)		T3 Return (Table)		T4 Return (Low Vol)		T5 Fee		T6 Return		T7 Return (Low Vol)	
Condition	***I***	***D***	***I***	***D***	***I***	***D***	***I***	***D***	***I***	***D***	***I***	***D***	***I***	***D***
Female	0.377	**-0.928**	-0.245	0.124	0.457	0.416	-0.592	-0.740	-0.141	-1.063	-0.545	0.388	0.091	-0.065
Age 40-59 yrs	-0.379	-0.043	0.072	-0.152	0.146	0.932	0.008	-0.047	1.130	-0.185	-0.362	-0.013	-0.303	0.534
Age 60+ yrs	-0.535	0.190	-0.189	0.270	0.179	**2.009**	-0.198	0.283	0.594	-0.059	-0.322	-0.315	-0.251	0.625
High school graduate	-0.051	0.508	-0.481	**-1.313**	0.096	-0.060	0.357	-0.384	-0.292	-0.146	-0.030	0.557	-0.577	0.330
College graduate	0.628	0.537	-0.151	0.060	-0.169	0.666	-0.098	0.767	-1.616	0.030	0.065	0.023	0.112	0.484
Employed	0.655	-0.188	0.136	0.929	-0.124	-0.240	-0.699	1.249	-1.852	0.039	0.172	-0.172	-0.718	-0.783
Retired	0.971	-0.517	0.679	0.518	-0.220	**-2.954**	-0.873	1.529	-0.164	0.915	1.702	-0.682	-1.052	-0.795
Married/de facto	0.674	0.359	0.131	0.103	-0.210	0.644	-0.055	0.796	-0.237	-0.234	0.151	0.408	0.608	0.191
Decision maker	0.529	0.291	0.286	**-0.578**	0.061	0.935	-0.159	0.957	-0.828	-0.124	0.143	0.423	0.377	0.978
No dependents	0.603	-0.108	0.108	-0.143	-0.263	0.480	0.283	0.274	0.420	-0.382	-0.070	-0.023	-0.202	-0.254
Weekly inc. ($1-$399)	0.178	0.146	-0.458	0.000	1.052	0.217	-0.099	0.662	1.025	-0.611	0.491	0.508	**1.892**	1.428
Weekly inc. ($400-$999)	0.328	0.103	-0.239	0.070	-0.100	-0.114	0.101	-0.555	1.595	0.087	0.726	1.077	**2.084**	2.047
Weekly inc. ($1000+)	0.271	-0.172	-0.575	0.092	0.494	-0.302	-0.163	-1.432	-0.098	-0.364	0.138	1.118	1.919	1.529
Retirement balance (ln$)	-0.080	0.026	0.009	-0.081	0.034	-0.100	-0.094	0.207	-0.339	-0.007	-0.029	0.026	-0.029	-0.188
Comprehension	-0.063	0.204	-0.129	0.185	-0.026	-0.019	0.089	-0.155	-0.195	0.094	0.025	-0.141	-0.288	-0.420
Financial literacy	-0.500	**-0.483**	-0.102	0.051	-0.165	0.174	-0.179	-0.622	-0.330	-0.313	-0.387	-0.216	0.174	0.530
Numeracy	-0.229	-0.041	-0.065	-0.319	0.113	**-0.579**	**-0.409**	-0.613	**-0.835**	-0.357	**0.004**	-0.127	-0.051	-0.355
Superannuation literacy	0.534	**-0.549**	-0.153	-0.188	-0.010	0.238	-0.191	-1.031	-0.486	-0.238	0.114	-0.092	**-0.469**	**-1.028**
Passed attention check	-1.545	-0.093	-0.265	0.899	-0.820	0.545	-0.141	0.433	-0.141	-0.248	0.598	0.188	-0.133	0.134
Obs.	139	147	136	138	126	126	126	124	131	120	123	127	123	135
R2	0.311	0.265	0.116	0.223	0.104	0.214	0.236	0.293	0.248	0.206	0.252	0.126	0.214	0.214

Notes: This table reports the marginal effects from OLS regressions of scaling factors on participant characteristics. The explanatory variables are defined in Table 3. The estimates in bold typeface are significant at the 5% level or less.

Flicking the Switch: Simplifying Disclosures to Improve Retirement Plan Choices

Supplemental Materials A: ASIC example product dashboard

XYZ MySuper Dashboard

Use this dashboard to compare this XYZ MySuper with other MySuper products. Go to ASIC's MoneySmart website for more information on how to pick the right MySuper fund for you.

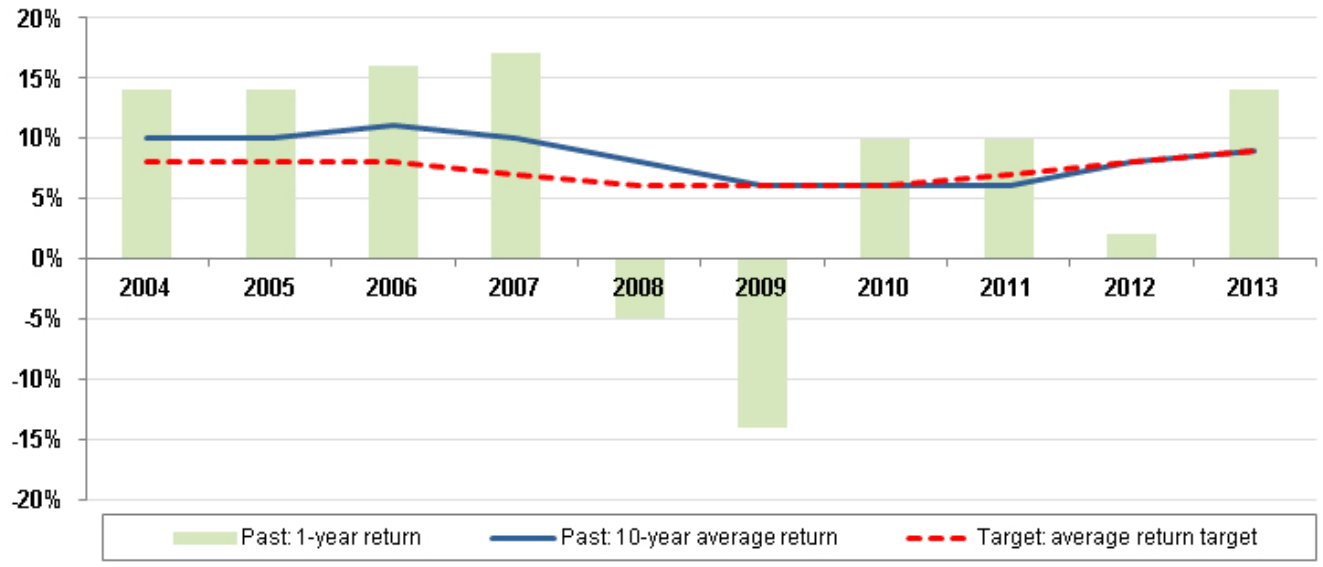
Return

10 year average return of 7.1% as at 30 June 2013.

Return target

Return target for 2014-2023 of 3% per year above inflation, after fees and taxes. Future returns cannot be guaranteed. This is a prediction.

Comparison between return target and return



Past performance is not necessarily an indication of future returns.

Level of investment risk

High
Negative returns expected in 5 out of every 20 years

The higher the expected return target, the more often you would expect a year of negative returns.

Statement of fees and other costs

$437 per year

Fees and other costs for a member with a $50,000 balance.

Flicking the Switch: Simplifying Disclosures to Improve Retirement Plan Choices

Supplemental Materials B: Live links to all surveys; screenshots of non-incentivised version of Treatment 1; screenshots of choice tasks for all treatments; and screenshot of incentive page.

Links to complete surveys:

Treatment 1 (Incentive) – http://survey.confirmit.com/wix/p3069758398.aspx

Treatment 1 (Non-incentivised) – http://survey.confirmit.com/wix/p3069758526.aspx

Treatment 2 (Incentive) – http://survey.confirmit.com/wix/p3070646490.aspx

Treatment 3 (Incentive) – http://survey.confirmit.com/wix/p3072417780.aspx

Treatment 4 (Incentive – Low volatility) – http://survey.confirmit.com/wix/p3074055240.aspx

Treatment 5 (Incentive) – http://survey.confirmit.com/wix/p3074907823.aspx

Treatment 6 (Incentive) – http://survey.confirmit.com/wix/p3076090311.aspx

Treatment 7 (Incentive – Low Volatility) – http://survey.confirmit.com/wix/p3076090642.aspx

Thank you for agreeing to participate in this survey about superannuation.

The survey will take approximately 20 to 25 minutes to complete. Please take as much time as you need to answer the questions. Most questions only require you to tick a box. All your answers to the questions are strictly anonymous: no one involved in this study can identify you personally, no one will contact you after the survey, and no sales solicitation is involved. Your answers will be used for academic research purposes only.

This study is being conducted by researchers at the *University of New South Wales* and the *University of Technology, Sydney*. The purpose is to learn more about people's superannuation decisions. For more information about this research, please contact Andreas Ortmann (a.ortmann@unsw.edu.au) and Hazel Bateman (h.bateman@unsw.edu.au).

When taking the survey, please DO NOT USE the "back" and "forward" buttons in your browser, please use the buttons at the bottom of each screen. If you would like to pause the survey to return to it later, simply close the window and click on the original link in the invitation, it will return you to the last point of entry in the survey.

Please click on the " >> " button to proceed.

>>

S1. Due to the nature of this survey you will be asked personal information such as your income and your housing situation. You have the right to refuse to answer any question but any such refusal implies that your participation the survey will automatically be terminated. Your answers to these questions are confidential, and cannot be used to identify you personally. They will be used only to make comparisons for different types of people, such as younger and older people, males and females, high and low income people, etc.

Please note that you may terminate participation in the survey at any time. However, only completed surveys will be given full compensation for participation.

Will you participate in this survey?

- (●) Yes
- ( ) No

<< >>

S2. Are you?

- ○ Male
- ○ Female

S3. To which age group do you belong?

- ○ Under 18 years
- ○ 18-24 years
- ○ 25-29 years
- ○ 30-34 years
- ○ 35-39 years
- ○ 40-44 years
- ○ 45-49 years
- ○ 50-54 years
- ○ 55-59 years
- ○ 60-64 years
- ○ 65-69 years
- ○ 70-74 years
- ○ 75 years and over

<< >>

S4. Do you have a superannuation account (Are you a member of any superannuation funds)?

- ○ Yes
- ○ No

<< >>

In the following task you will be presented with a choice between **two** MySuper superannuation funds. On each trial of the task you will see **two "dashboards"** that provide information about the two MySuper funds. This information includes, for each fund: the return, the return target, a graph showing the comparison between the target and the return, the level of investment risk and a statement of other fees and costs. On each trial, the annual information on each fund is updated. You should use this information to make a decision about which of the two MySuper funds you prefer. There will be **20 trials** showing 20 yearly updates, so you need to make 20 decisions in total.

Following this choice task, we will also ask you to answer questions regarding your comprehension of the information presented on the dashboard, and questions of a more general nature about financial literacy, numeracy and superannuation.

Please click on " >> " to continue.

<< >>

Below are definitions of some terms used on following screens. You will be able to review these definitions again during exercise.

Return:
Percent investment return to a member with $50,000 invested after fees and costs are deducted.

10 year average return:
Average of return for this year and previous nine years. Returns are for a member with $50,000 invested and are net of fees and costs.

Average return target:
Average of the return targets for this year and the previous nine years including the growth in the CPI (inflation).

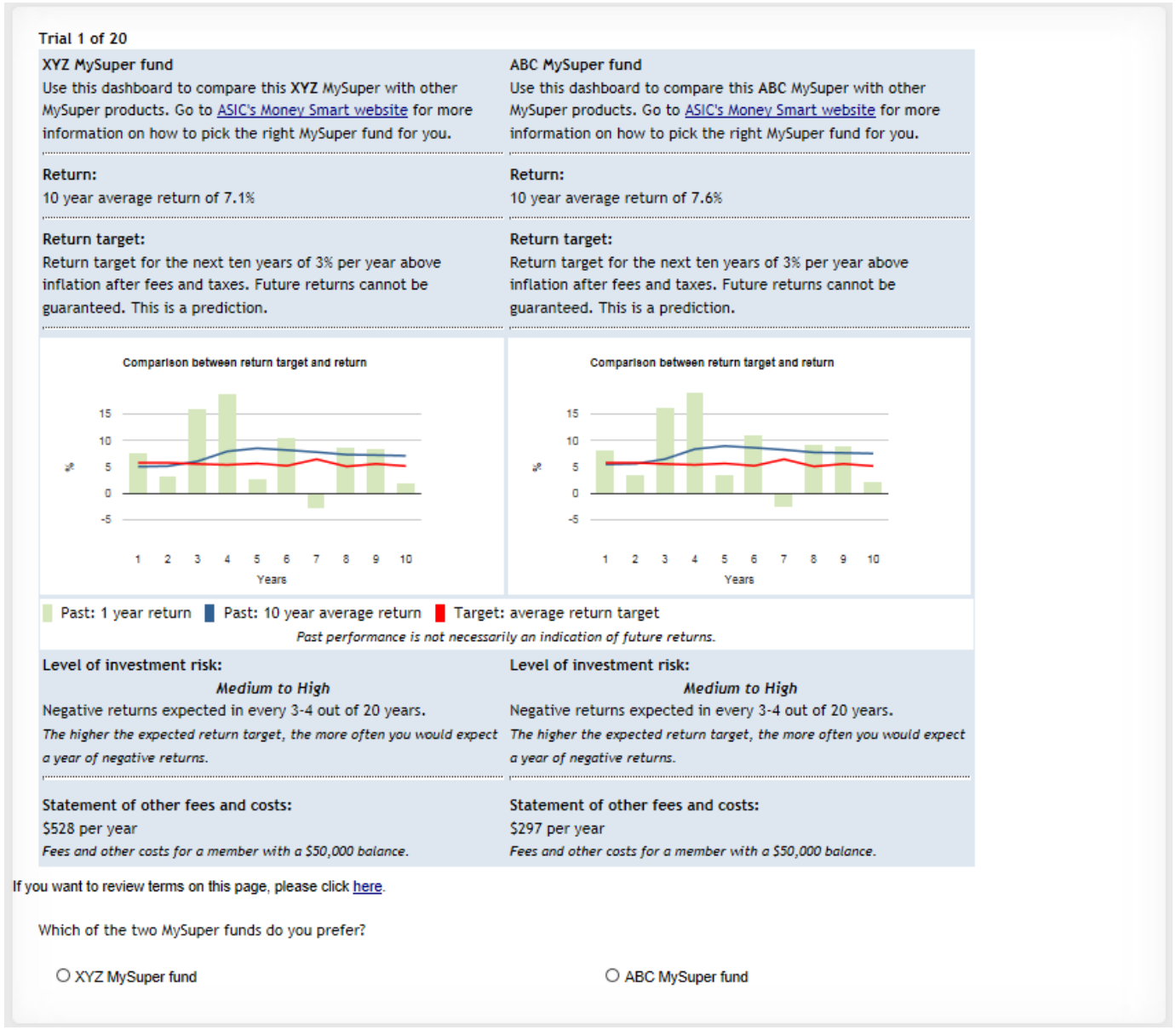
Fees and other costs:
Investment fees, administration fees, advice fees and other costs for this year charged to a member with $50,000 invested in this MySuper fund.

Please note, after making a choice on each screen in this exercise, you can either click on " >> " to continue, or simply press "Enter" key on keyboard to continue.

<< >>

There are two versions for this section. Respondents are randomly assigned to one of the two versions. For each version, there are 20 tasks with each task showing two MySuper funds with dashboards. Respondents are asked to make a choice from the two dashboards.

The two versions are named “increasing” and “decreasing” versions. An example of each version is shown on following pages.



This is the “decreasing” version

Trial 1 of 20

XYZ MySuper fund	HIJ MySuper fund
Use this dashboard to compare this **XYZ** MySuper with other MySuper products. Go to ASIC's Money Smart website for more information on how to pick the right MySuper fund for you.	Use this dashboard to compare this **HIJ** MySuper with other MySuper products. Go to ASIC's Money Smart website for more information on how to pick the right MySuper fund for you.
Return: 10 year average return of 7.1%	**Return:** 10 year average return of 6.7%
Return target: Return target for the next ten years of 3% per year above inflation after fees and taxes. Future returns cannot be guaranteed. This is a prediction.	**Return target:** Return target for the next ten years of 3% per year above inflation after fees and taxes. Future returns cannot be guaranteed. This is a prediction.

Past: 1 year return Past: 10 year average return Target: average return target

Past performance is not necessarily an indication of future returns.

Level of investment risk: ***Medium to High*** Negative returns expected in every 3-4 out of 20 years. *The higher the expected return target, the more often you would expect a year of negative returns.*	**Level of investment risk:** ***Medium to High*** Negative returns expected in every 3-4 out of 20 years. *The higher the expected return target, the more often you would expect a year of negative returns.*
Statement of other fees and costs: $528 per year *Fees and other costs for a member with a $50,000 balance.*	**Statement of other fees and costs:** $772 per year *Fees and other costs for a member with a $50,000 balance.*

If you want to review terms on this page, please click here.

Which of the two MySuper funds do you prefer?

○ XYZ MySuper fund ○ HIJ MySuper fund

This is the “increasing” version

We will now ask you eight questions regarding your comprehension of the information presented in the survey. You have the right to refuse to answer any question but any such refusal implies that your participation the survey will automatically be terminated.

<< >>

C1. What do you think is the **most useful** piece of information for comparing funds? (Choose only one.)

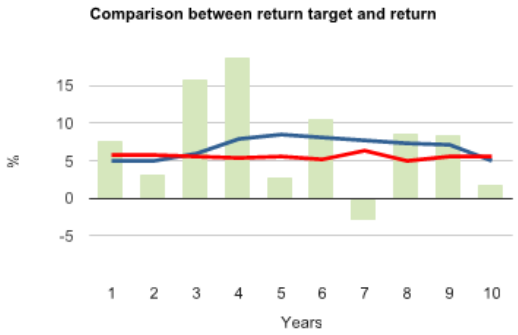
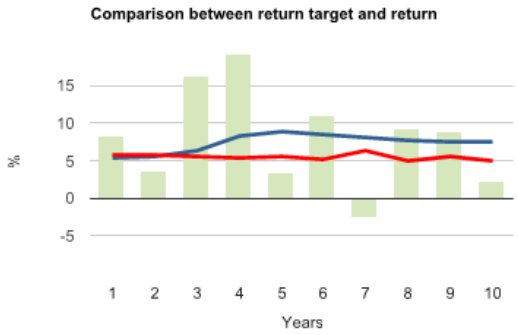
- ○ 10 year average return
- ○ Return target
- ○ Graph
- ○ Level of investment risk
- ○ Fees and costs

C2. Which piece(s) of information did you **most often use** when choosing a fund? (Choose any that apply.)

- ☐ 10 year average return
- ☐ Return target
- ☐ Graph
- ☐ Level of investment risk
- ☐ Fees and costs

On each page, we show the following example to assist respondents in answering these questions.

An example dashboard is provided below for your reference.

MySuper fund 1	MySuper fund 2
Return: 10 year average return of 7.1%	**Return:** 10 year average return of 7.6%
Return target: Return target for the next ten years of 3% per year above inflation after fees and taxes. Future returns cannot be guaranteed. This is a prediction.	**Return target:** Return target for the next ten years of 3% per year above inflation after fees and taxes. Future returns cannot be guaranteed. This is a prediction.
	
Past: 1 year return Past: 10 year average return Target: average return target *Past performance is not necessarily an indication of future returns.*	
Level of investment risk: ***Medium to High*** Negative returns expected in every 3-4 out of 20 years. *The higher the expected return target, the more often you would expect a year of negative returns.*	**Level of investment risk:** ***Medium to High*** Negative returns expected in every 3-4 out of 20 years. *The higher the expected return target, the more often you would expect a year of negative returns.*
Statement of other fees and costs: $528 per year *Fees and other costs for a member with a $50,000 balance.*	**Statement of other fees and costs:** $397 per year *Fees and other costs for a member with a $50,000 balance.*

C3. On the graph, if the red line is ABOVE the blue line, this means:

- ○ That on average, the fund has returned more than the target return over the past 10 years
- ○ That on average, the fund has not kept up with inflation over the past 10 years
- ○ That on average, the fund has returned more than other funds over the past 10 years
- ○ That on average, the fund has returned less than the target return over the past 10 years

C4. If the fund loses money one year, for that year, the graph always shows:

- ○ The blue line below the red line
- ○ The red line below the blue line
- ○ The green bar below the horizontal axis
- ○ The green bar lower than last year's green bar

C5. The level of investment risk for this fund is "negative returns expected every 3-4 out of 20 years". If the first 5 years in the graph showed four (4) negative returns, how many negative returns would you expect to see in the NEXT **5** years of the graph?

- ○ Answer a: 0
- ○ Answer b: 1
- ○ Answer c: 2
- ○ Answers a, b and c are all equally likely

C6. The level of investment risk for this fund is "negative returns expected every 3-4 out of 20 years". If the first 5 years in the graph showed four (4) negative returns, how many negative returns would you expect to see in the NEXT **15** years of the graph?

- ○ Answer a: 0
- ○ Answer b: 2
- ○ Answer c: 3
- ○ Answers a, b and c are all equally likely

C7. In the previous part of the survey when you compared the two funds, what did you notice about fees and costs?

- ○ I didn't notice the fees and costs
- ○ The fees for one fund mainly went up while the other stayed about the same
- ○ The fees for one fund mainly went down while the other stayed about the same
- ○ The fees for both funds stayed about the same

C8. The returns information on the table (returns and target returns)

- ○ Have fees and costs still included
- ○ Have fees and costs deducted
- ○ Have fees deducted but administration costs included

The following questions measure your general financial competence and numeracy skills. Please answer the questions without using a calculator.

On a scale of 1 to 7, where 1 means very low and 7 means very high, how would you assess your understanding of finance?

	Very low			About average			Very high
	1	2	3	4	5	6	7
Please tick one	○	○	○	○	○	○	○

Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- ○ More than $102
- ○ Exactly $102
- ○ Less than $102
- ○ Do not know

Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

- ○ More than today
- ○ Exactly the same
- ○ Less than today
- ○ Do not know

Buying shares in a single company usually provides a safer return than buying units in a managed share fund.

- ○ True
- ○ False
- ○ Do not know

<< >>

Imagine that we rolled a fair, six-sided die 1,000 times. Out of 1,000 rolls, how many times do you think the die would come up even?

Please enter a number between 0 to 1000 in the box.

[ ] times

In a lottery, the chance of winning a $500 prize is 1%. What is your best guess of how many people would win the prize if 1,000 people each buy a single ticket in the lottery?

Please enter a number between 0 to 1000 in the box.

[ ] people

In a raffle, the chance of winning a car is 1 in 1,000. What per cent of tickets in the raffle win a car?

Please enter a percentage.

[ ] %

<< >>

This set of questions measure your baseline knowledge of the Australian superannuation system.

Employers are required to pay superannuation contributions into the superannuation accounts of most of their employees. Is there a mandatory minimum employer contribution rate?

Please select all that apply.

- (•) Yes
- ( ) No
- ( ) Do not know

What % of an employee's salary is an employer currently required to contribute to superannuation?

Please enter a percentage.

[ ] %

<< >>

This set of questions measure your baseline knowledge of the Australian superannuation system.

Employers are required to pay superannuation contributions into the superannuation accounts of most of their employees. Is there a mandatory minimum employer contribution rate?

Please select all that apply.

- (•) Yes
- ( ) No
- ( ) Do not know

What % of an employee's salary is an employer currently required to contribute to superannuation?

Please enter a percentage.

[ ] %

<< >>

If you haven't chosen a superannuation fund your employer must pay your superannuation into a superannuation fund that offers MySuper.

- ○ True
- ○ False
- ○ Do not know

Superannuation funds deduct fees from member's superannuation accounts.

- ○ True
- ○ False
- ○ Do not know

Is the following statement true or false?
"For most people, superannuation is taxed at a higher rate than a similar investment outside superannuation".

- ○ True
- ○ False
- ○ Do not know

<< >>

Can people make voluntary contributions to their superannuation accounts?

- (•) Yes
- ( ) No
- ( ) Do not know

Are there any limits to the amount of these voluntary contributions?

- ( ) No. There are no limits.
- ( ) No. There are no limits to the amount but contributions above the contributions caps are taxed at higher rates.
- ( ) Yes. Individuals cannot contribute in excess of the contribution caps.
- ( ) Do not know

If your superannuation account is invested in a "balanced" investment option, this means that it is invested exclusively in safe assets such as savings accounts, cash management accounts and term deposits.

- ( ) True
- ( ) False
- ( ) Do not know

<< >>

You are allowed to borrow from your superannuation account.

- ○ True
- ○ False
- ○ Do not know

If you have any superannuation, you will not qualify for the Age Pension.

- ○ True
- ○ False
- ○ Do not know

Do you know the minimum age at which you can spend the money in your superannuation account?

- ○ Yes
- ○ No

<< >>

Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- ○ More than $102
- ○ Exactly $102
- ○ Less than $102
- ○ Do not know

Buying shares in a single company usually provides a safer return than buying units in a managed share fund.

- ○ True
- ○ False
- ○ Do not know

Have you seen these questions previously in this survey?

- ○ Yes
- ○ No

<< >>

We will now ask you the questions about your personal information mentioned at the beginning of the survey. You have the right to refuse to answer any questions but any such refusal implies that your participation the survey will automatically be terminated. Your answers to these questions are confidential and cannot be used to identify you personally. They will be used to make comparisons for different types of people, such as younger and older people, males and females, high and low income people etc.

<< >>

What is your date of birth?

day month year

What is your current marital status?

- Never married and not living in a long term (de facto) relationship
- Widowed
- Divorced
- Separated but not divorced
- Married
- Living in long term relationship (de facto)

Who is most responsible for the major financial decisions in your household?

- I am
- Someone else
- Someone else and I are equally responsible

How many people in your household do you fully or partially support financially?

- 1 (myself)
- 2
- 3
- 4 or more

<< >>

What is the highest level of school you have completed?

- ○ Year 12 or equivalent
- ○ Year 11 or equivalent
- ○ Year 10 or equivalent
- ○ Year 9 or equivalent
- ○ Year 8 or equivalent
- ○ Year 7 or equivalent
- ○ Year 6 or below
- ○ Did not go to school

What is the highest post school qualification you have?

- ○ PhD
- ○ Master Degree or equivalent
- ○ Graduate Diploma and Graduate Certificate from university or equivalent
- ○ Bachelor Degree or equivalent
- ○ Advanced Diploma and Diploma from university/TAFE or equivalent
- ○ Certificate or equivalent from TAFE or equivalent
- ○ None of the above

Which of the following best describes your current work status?

- ○ Employed full time
- ○ Employed part time
- ○ Unemployed
- ○ Not in the labour force - Stay-at-home parent or caregiver
- ○ Not in the labour force - Full-time student
- ○ Not in the labour force - Retired
- ○ Not in the labour force - Other

Which of the following categories best describes your weekly (annual) gross ***personal income*** (before tax)?

- ○ Negative income
- ○ Nil income
- ○ $1-$199 ($1-$10,399)
- ○ $200-$299 ($10,400-$15,599)
- ○ $300-$399 ($15,600-$20,799)
- ○ $400-$599 ($20,800-$31,199)
- ○ $600-$799 ($31,200-$41,599)
- ○ $800-$999 ($41,600-$51,999)
- ○ $1,000-$1,249 ($52,000-$64,999)
- ○ $1,250-$1,499 ($65,000-$77,999)
- ○ $1,500-$1,999 ($78,000-$103,999)
- ○ $2,000 or more ($104,000 or more)

Which of the following categories best describes your weekly (annual) gross ***household income*** (before tax)?

- ○ Negative income
- ○ Nil income
- ○ $300-$399 ($15,600-$20,799)
- ○ $400-$599 ($20,800-$31,199)
- ○ $600-$799 ($31,200-$41,599)
- ○ $800-$999 ($41,600-$51,999)
- ○ $1,000-$1,249 ($52,000-$64,999)
- ○ $1,250-$1,499 ($65,000-$77,999)
- ○ $1,500-$1,999 ($78,000-$103,999)
- ○ $2,000-$2,499 ($104,000-$129,999)
- ○ $2,500-$2,999 ($130,000-$155,999)
- ○ $3,000-$3,499 ($156,000-$181,999)
- ○ $3,500-$3,999 ($182,000-$207,999)
- ○ $4,000-$4,999 ($208,000-$259,999)
- ○ $5,000 or more ($260,000 or more)

Think about your savings in your superannuation fund (or funds if you have superannuation savings in more than one super fund). What is the total amount of superannuation in your super fund (or in all super funds combined if you have accounts in more than one super fund)?

Please enter a whole number.

$

<< >>

This concludes the survey. Thank you very much for your valuable time and feedback.

Please click on " >> " to claim your points.

<< >>

Screenshots of Dashboards for Treatments 2-7 and incentive description.

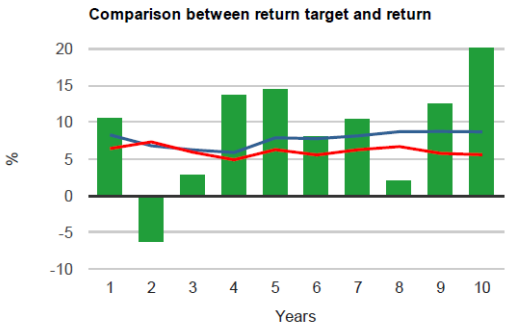
Treatment 2

Trial 1 of 20

XYZ MySuper fund
Use this dashboard to compare this **XYZ** MySuper with other MySuper products.

Return:
10 year average return of 8.7%

Return target:
Return target for the next ten years of 3% per year above inflation after fees and taxes. Future returns cannot be guaranteed. This is a prediction.



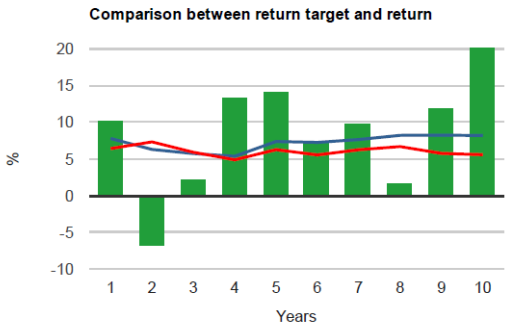
Level of investment risk:
Medium to High
Negative returns expected in every 3-4 out of 20 years.
The higher the expected return target, the more often you would expect a year of negative returns.

Statement of fees and other costs:
$530 per year
Fees and other costs for a member with a $50,000 balance.

HIJ MySuper fund
Use this dashboard to compare this **HIJ** MySuper with other MySuper products.

Return:
10 year average return of 8.2%

Return target:
Return target for the next ten years of 3% per year above inflation after fees and taxes. Future returns cannot be guaranteed. This is a prediction.



Past: 1 year return Past: 10 year average return Target: average return target

Past performance is not necessarily an indication of future returns.

Level of investment risk:
Medium to High
Negative returns expected in every 3-4 out of 20 years.
The higher the expected return target, the more often you would expect a year of negative returns.

Statement of fees and other costs:
$526 per year
Fees and other costs for a member with a $50,000 balance.

If you want to review terms on this page, please click here. By doing so, a separate new window will open to show definitions of these terms again. Please remember to return to this window to continue survey after you have finished reviewing definitions, by clicking this survey tab at the top of your browser.

Which of the two MySuper funds do you prefer?

○ XYZ MySuper fund ○ HIJ MySuper fund

<< >>

Treatment 3

Trial 1 of 20

XYZ MySuper fund	**HIJ MySuper fund**
Use this dashboard to compare this **XYZ** MySuper with other MySuper products.	Use this dashboard to compare this **HIJ** MySuper with other MySuper products.
Return: 10 year average return of 8.7%	**Return:** 10 year average return of 8.2%
Return target: Return target for the next ten years of 3% per year above inflation after fees and taxes. Future returns cannot be guaranteed. This is a prediction.	**Return target:** Return target for the next ten years of 3% per year above inflation after fees and taxes. Future returns cannot be guaranteed. This is a prediction.

Comparison between return and target return

	Past 1 year return	Past 10 year average return	Target average return
Year 1	10.73%	8.28%	6.42%
Year 2	-6.34%	6.80%	7.33%
Year 3	2.86%	6.24%	5.92%
Year 4	13.86%	5.88%	4.89%
Year 5	14.57%	7.89%	6.27%
Year 6	8.05%	7.77%	5.55%
Year 7	10.37%	8.15%	6.26%
Year 8	2.17%	8.72%	6.69%
Year 9	12.51%	8.75%	5.76%
Year 10	20.74%	8.70%	5.58%

Past performance is is not necessarily an indication of future returns.

Comparison between return and target return

	Past 1 year return	Past 10 year average return	Target average return
Year 1	10.23%	7.79%	6.42%
Year 2	-6.84%	6.30%	7.33%
Year 3	2.34%	5.74%	5.92%
Year 4	13.36%	5.37%	4.89%
Year 5	14.06%	7.38%	6.27%
Year 6	7.54%	7.26%	5.55%
Year 7	9.87%	7.65%	6.26%
Year 8	1.66%	8.22%	6.69%
Year 9	12.00%	8.24%	5.76%
Year 10	20.29%	8.20%	5.58%

Past performance is is not necessarily an indication of future returns.

Level of investment risk: ***Medium to High*** Negative returns expected in every 3-4 out of 20 years. *The higher the expected return target, the more often you would expect a year of negative returns.*	**Level of investment risk:** ***Medium to High*** Negative returns expected in every 3-4 out of 20 years. *The higher the expected return target, the more often you would expect a year of negative returns.*
Statement of fees and other costs: $530 per year *Fees and other costs for a member with a $50,000 balance.*	**Statement of fees and other costs:** $526 per year *Fees and other costs for a member with a $50,000 balance.*

If you want to review terms on this page, please click here. By doing so, a separate new window will open to show definitions of these terms again. Please remember to return to this window to continue survey after you have finished reviewing definitions, by clicking this survey tab at the top of your browser.

Which of the two MySuper funds do you prefer?

- ○ XYZ MySuper fund
- ○ HIJ MySuper fund

<< >>

Treatment 4

Trial 1 of 20

XYZ MySuper fund

Use this dashboard to compare this XYZ MySuper with other MySuper products.

Return:

10 year average return of 4.1%

Return target:

Return target for the next ten years of 1% per year above inflation after fees and taxes. Future returns cannot be guaranteed. This is a prediction.

Comparison between return and target return

	Past 1 year return	Past 10 year average return	Target average return
Year 1	5.06%	4.30%	3.54%
Year 2	5.14%	4.53%	4.01%
Year 3	3.23%	4.26%	3.62%
Year 4	3.54%	4.24%	4.16%
Year 5	5.25%	4.33%	3.41%
Year 6	2.62%	4.10%	3.16%
Year 7	2.86%	3.99%	3.25%
Year 8	5.15%	4.16%	4.05%
Year 9	4.22%	4.16%	3.91%
Year 10	4.15%	4.12%	4.07%

Past performance is is not necessarily an indication of future returns.

Level of investment risk:

Very Low

Negative returns expected less than 0.5 out of 20 years.

The higher the expected return target, the more often you would expect a year of negative returns.

Statement of fees and other costs:

$523 per year

Fees and other costs for a member with a $50,000 balance.

ABC MySuper fund

Use this dashboard to compare this ABC MySuper with other MySuper products.

Return:

10 year average return of 4.6%

Return target:

Return target for the next ten years of 1% per year above inflation after fees and taxes. Future returns cannot be guaranteed. This is a prediction.

Comparison between return and target return

	Past 1 year return	Past 10 year average return	Target average return
Year 1	5.55%	4.78%	3.54%
Year 2	5.63%	5.01%	4.01%
Year 3	3.71%	4.75%	3.62%
Year 4	4.02%	4.72%	4.16%
Year 5	5.73%	4.81%	3.41%
Year 6	3.10%	4.58%	3.16%
Year 7	3.34%	4.48%	3.25%
Year 8	5.62%	4.65%	4.05%
Year 9	4.71%	4.64%	3.91%
Year 10	4.58%	4.60%	4.07%

Past performance is is not necessarily an indication of future returns.

Level of investment risk:

Very Low

Negative returns expected less than 0.5 out of 20 years.

The higher the expected return target, the more often you would expect a year of negative returns.

Statement of fees and other costs:

$532 per year

Fees and other costs for a member with a $50,000 balance.

If you want to review terms on this page, please click here. By doing so, a separate new window will open to show definitions of these terms again. Please remember to return to this window to continue survey after you have finished reviewing definitions, by clicking this survey tab at the top of your browser.

Which of the two MySuper funds do you prefer?

- ○ XYZ MySuper fund
- ○ ABC MySuper fund

<< >>

Treatment 5

Trial 1 of 20

XYZ MySuper fund Use this dashboard to compare this **XYZ** MySuper with other MySuper products	
1 year return (after fees and costs) Past performance is not necessarily an indication of future returns	1.8%
10 year average return (after fees and costs)	7.1%
Current fees and costs as a percentage of a $50,000 balance	1.1%
Level of Investment Risk	There is a 1 in four chance of a negative return each year

HIJ MySuper fund Use this dashboard to compare this **HIJ** MySuper with other MySuper products	
1 year return (after fees and costs) Past performance is not necessarily an indication of future returns	1.4%
10 year average return (after fees and costs)	6.7%
Current fees and costs as a percentage of a $50,000 balance	1.5%
Level of Investment Risk	There is a 1 in four chance of a negative return each year

Which of the two MySuper funds do you prefer?

○ XYZ MySuper fund ○ HIJ MySuper fund

<< >>

Treatment 6

Trial 1 of 20

XYZ MySuper fund Use this dashboard to compare this **XYZ** MySuper with other MySuper products	
1 year return (after fees and costs) Past performance is not necessarily an indication of future returns	20.7%
10 year average return (after fees and costs)	8.7%
Current fees and costs as a percentage of a $50,000 balance	1.1%
Level of Investment Risk	There is a 1 in four chance of a negative return each year

ABC MySuper fund Use this dashboard to compare this **ABC** MySuper with other MySuper products	
1 year return (after fees and costs) Past performance is not necessarily an indication of future returns	20.3%
10 year average return (after fees and costs)	8.2%
Current fees and costs as a percentage of a $50,000 balance	1.1%
Level of Investment Risk	There is a 1 in four chance of a negative return each year

Which of the two MySuper funds do you prefer?

○ XYZ MySuper fund ○ ABC MySuper fund

<< >>

Treatment 7

Trial 1 of 20

XYZ MySuper fund Use this dashboard to compare this **XYZ** MySuper with other MySuper products	
1 year return (after fees and costs) Past performance is not necessarily an indication of future returns	4.2%
10 year average return (after fees and costs)	4.1%
Current fees and costs as a percentage of a $50,000 balance	1.0%
Level of Investment Risk	There is less than a 1 in forty chance of a negative return each year

HIJ MySuper fund Use this dashboard to compare this **HIJ** MySuper with other MySuper products	
1 year return (after fees and costs) Past performance is not necessarily an indication of future returns	4.6%
10 year average return (after fees and costs)	4.6%
Current fees and costs as a percentage of a $50,000 balance	1.1%
Level of Investment Risk	There is less than a 1 in forty chance of a negative return each year

Which of the two MySuper funds do you prefer?

○ XYZ MySuper fund ○ HIJ MySuper fund

<< >>

Incentive page

In the following task you will be presented with a choice between **two** MySuper superannuation funds. On each trial of the task you will see **two "dashboards"** that provide information about the two MySuper funds. This information includes, for each fund: the 1 year return, the 10 year average return, the level of investment risk and a statement of fees and costs. On each trial, the annual information on each fund is updated. You should use this information to make a decision about which of the two MySuper funds you prefer. There will be **20 trials** showing 20 yearly updates, so you need to make 20 decisions in total.

Following this choice task, we will also ask you to answer questions regarding your comprehension of the information presented on the dashboard, and questions of a more general nature about financial literacy, numeracy and superannuation.

Please confirm the following text by clicking on " >> " below after you have read it:
At the end of the experiment you will be awarded bonus pureprofile points. Your specific earnings will depend on the answers you give to either the set of questions on product disclosure statements (the "task") or the set of comprehension questions on the task or the series of questions to determine your financial knowledge and skills.

One of these three sets of questions will be chosen at random, and your performance on the chosen set will determine your earnings

Please click on " >> " to continue.

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Flicking the Switch: Simplifying Disclosures to Improve Retirement Plan Choices

Supplemental Materials C: Sample demographics and summary statistics

	Sample		Pop'n (18-64 yrs)		Sample		Pop'n (18-64 yrs)
Demographics	**count**	**%**	**%**		**count**	**%**	**%**
Gender				**School Education**			
male	903	49.7%	49.6%	Year 12 or equivalent	1441	79.3%	59.3%
female	915	50.3%	50.5%	Year 11 or equivalent	121	6.7%	10.5%
Age				Year 10 or equivalent	205	11.3%	21.8%
18-24 years	106	5.8%	15.0%	Year 9 or equivalent	32	1.8%	4.7%
25-29 years	191	10.5%	11.2%	Year 8 or equivalent	8	0.4%	3.0%
30-34 years	257	14.1%	10.8%	Year 7 or equivalent	5	0.3%	0.0%
35-39 years	239	13.1%	11.3%	Year 6 or below	3	0.2%	0.0%
40-44 years	210	11.6%	11.4%	Did not go to school	3	0.2%	0.6%
45-49 years	193	10.6%	11.1%	**Post-school qualification**			
50-54 years	222	12.2%	10.7%	PhD	25	1.4%	1.7%
55-59 years	204	11.2%	9.6%	Master Degree or equivalent	161	8.9%	10.9%
60-64 years	196	10.8%	8.9%	Grad. Dip. or Grad. Cert.	120	6.6%	8.1%
Marital status				Bachelor Degree or equivalent	508	27.9%	34.3%
Never married and not living in a long term (de facto) relationship	437	24.0%	36.9%	Diploma (University or Vocational training)	241	13.3%	16.3%
Widowed	20	1.1%	1.3%	Vocational certificate	426	23.4%	28.8%
Divorced	129	7.1%	8.6%	None of the above	337	18.5%	0.0%
Separated but not divorced	45	2.5%	3.4%	**Employment status**			
Married	908	49.9%	49.8%	Employed full time	989	54.4%	50.7%
Living in long term relationship (de facto)[a]	279	15.3%		Employed part time	420	23.1%	22.1%
				Unemployed	90	5.0%	4.4%
				Not in the labour force	319	17.5%	22.8%

Major financial decision maker						
I am	1090	60.0%				
some else	113	6.2%	**Wkly(ann.) gross personal income**			
some and I equally	615	33.8%	Negative income	12	0.7%	0.6%
No. of people supported financially			Nil income	94	5.2%	6.7%
1	356	19.6%	$1-$199 ($1-$10,399)	108	5.9%	6.9%
2	327	18.0%	$200-$299 ($10,400-$15,599)	94	5.2%	8.5%
3	172	9.5%	$300-$399 ($15,600-$20,799)	112	6.2%	7.7%
4 or more	336	18.5%	$400-$599 ($20,800-$31,199)	193	10.6%	11.9%
Savings in super			$600-$799 ($31,200-$41,599)	202	11.1%	12.7%
Nil	40	2.20%	$800-$999 ($41,600-$51,999)	192	10.6%	10.6%
less than $49,999	836	45.98%	$1,000-$1,249 ($52,000-$64,999)	228	12.5%	10.3%
$50,000-$99,999	329	18.10%	$1,250-$1,499 ($65,000-$77,999)	179	9.8%	7.3%
$100,000-$499,999	505	27.78%	$1,500-$1,999 ($78,000-$103,999)	231	12.7%	8.6%
$500000 or more	125	6.88%	$2,000 or more ($104,000 or more)	129	7.1%	8.2%
Total observations	1818					

Note: Population percentages computed from 2011 Australian census, 18 to 64 years old age group. The Census does not include the category “Living in long term relationship (de facto)”.

Flicking the Switch: Simplifying Disclosures to Improve Retirement Plan Choices

Supplemental Material D: Calculation of dashboard data

We calibrate the experiment to the most common (default) MySuper investment product, a Strategic Asset Allocation fund. The average mix of assets in an SAA MySuper product is close to 70% growth and 30% defensive (Chant et al. 2014, Table 2). The weights we choose for the six asset classes mimic the allocation of a typical SAA default fund (T1-3 and T5-6). Growth assets consist of Australian and international equities and property; defensive assets consist of Australian and international bonds and Australian cash (Table D1). For the low volatility treatments (T4 and T7), only defensive Australian assets are included.

We set the base fees for the constant fund (XYZ) at the average MySuper fee on a $50K account balance of 1.06% p.a., or $530.00 (Chant, Mohankumar, and Warren, 2014, Table 5). At each choice set, we add random variation to the fees by adding draws from a normal distribution with a zero mean and a standard deviation of 3.33 to the base fee level. We calibrate the high starting fee level for T1 and T5 to $800 (increasing condition) and the low fee level to $270 (decreasing condition), which approximates observed variation in MySuper SAA default fees.

Steps:

1. We compute 288 gross monthly portfolio returns $R_{p,t} = \Sigma_{n=1}^{6} w_n R_{n,t}, 1 = \Sigma_{n=1}^{6} w_n$ where w_n is the weight allocated to asset class *n*, and $R_{n,t}$ is the gross monthly return to asset class *n* in month *t* in Australian dollars.
2. From the 288 monthly returns we bootstrap 31 x 12 months of portfolio returns and the associated monthly changes in the CPI and compute annual gross nominal portfolio returns as $R_{p,i} = \Pi_{t=1}^{12} R_{p,t,i}$ where $i = 1, \dots, 31$. and compute the average 10-year nominal return $\bar{R}_{p,i} = (\Pi_{k=i-10}^{i} R_{p,k})^{1/10}$. The 31 bootstraps give us 20 years of data for the choice set, preceded by ten years of "historical returns" used to calculate the 10-year average net return in the first choice set.
3. For the constant fund, we calculate the nominal 1-year return net of fees (1.06% of a $50K balance) and 7% taxes on earnings as $r_i = [R_{p,i} - (0.0106 + x_i)]0.93 - 1$ where x_i is the random adjustment to the base fee described above. The 10-year average net return is $\bar{r}_i = \Pi_{k=i-10}^{i}(1 + r_k)^{1/10} - 1$. (We sum the return target plus the average CPI over the same ten years as used to calculate $\bar{r}_i$ to compute the blue line on the dashboard graph.)
4. For Treatments 1 and 5, the difference in fees drives the differences in performance between the constant and alternative funds. For the increasing condition in Treatment 1 (and 5), we follow step 3, but starting with a fee level of $800/$50000 or 1.6%. At each choice set this fee decreases by a randomly drawn dollar amount between $20-$30, e.g. $775/$50000, $751/$50000 etc. until it equals the fee for the constant fund (1.06%) and then decreases lower. This decline in fees also means that the net returns of the alternative fund gradually increases over the 20 choice sets. For the decreasing condition, the starting fee is $270/$50000 or 0.54%. At each choice set this fee increases by a randomly drawn dollar amount between $20-$30, e.g. $300/$50000, $326/$50000 etc., until it equals and

exceeds the constant fund fee. This increase in fees also ensures a gradual decline in the net returns of the alternative fund over the 20 choice sets.

5. For Treatments 2, 3, 4, 6, and 7, the difference in returns, not fees, drives the differences in performance between the constant and alternative funds. (This treatment mimics the differences in performance due to investment management such as asset or fund manager selection or market timing). For the increasing and decreasing conditions in Treatment 2 (3, 4, 6, and 7), the differences in performance are evident in the returns not the fees. Fees for both the constant and alternative funds are calculated as for the constant fund in step 3, that is, 1.06% of a $50K balance with a small random adjustment at each choice set. However the fee penalty (bonus) from step 4 is applied to the net returns of the alternative fund in the decreasing (increasing) condition. The high (Treatments 2, 3, and 6) and low (Treatments 4 and 7) volatility settings are generated by changes in the asset allocation of the underlying portfolio. (Low volatility returns are computed from bootstrapping historical returns to cash and fixed interest assets.)

Table D1: Portfolio structure and data sources

	Asset class							
	Australian Equities	**International Equities**	**Property**	**International Bonds**	**Australian Bonds**	**Australian Cash**	**AUD/USD**	**CPI**
Weights T1-T3 and T5-T6	30%	25%	15%	10%	10%	10%		
Weight T4 and T7	0	0	0	0	20%	80%		
Source	Datastream Australia-DS Market Total Returns Index TOTMKAU(RI)	Datastream MSCI WORLD EX AU U$ - Total Returns Index MSWXAU$(RI)	Datastream S&P AUSTRALIA PROPERTY - Total Returns Index SBBPAUL(RI)	Datastream JPM GLOBAL GOVT.BND X.AUSTRALIA A$ - Total Returns Index JPMGXAU(RI)	Datastream UBS AU COMPOSITE ALL MATURITIES Total Returns Index ACIALLM	Datastream UBS AU BANK BILL ALL MATURITIES Total Returns Index ABNKBLI	Datastream AUSTRALIAN $ TO US $ - EXCHANGE RATE USDAUSP	RBA Bulletin Database Table G1 All groups seasonally adjusted GCPIAGSAYP
Sample	30/12/89-30/01/14	30/12/89-30/01/2014	30/12/89-30/01/14	30/12/89-30/01/14	30/12/89-30/01/14	30/12/89-30/01/14	30/12/89-30/01/14	30/12/89-30/01/14

Note: Quarterly CPI data were linearly interpolated to monthly frequency. International equity index values were converted from USD to AUD using end-of-month exchange rates.

Flicking the Switch: Simplifying Disclosures to Improve Retirement Plan Choices

Supplemental Material E: Dashboard comprehension and financial literacy questions; Comprehension scores.

Dashboard comprehension

Correct answers in italics

C1. What do you think is the most useful piece of information for comparing funds? (Choose only one) a. 10 year average return; b. Return target; c. Graph; d. Level of investment risk; e. Fees and costs

C2. Which piece(s) of information did you most often use when choosing a fund? (Choose any that apply.) a. 10 year average return; b. Return target; c. Graph; d. Level of investment risk; e. Fees and costs.

C3. (Treatments 1, 2 and graph condition in Treatment 4) On the graph, if the red line is ABOVE the blue line, this means: a. That on average, the fund has returned more than the target return over the past; b. That on average, the fund has not kept up with inflation over the past 10 years; c. That on average, the fund has returned more than other funds over the past 10 years; *d. That on average, the fund has returned less than the target return over the past 10 years.*

C3b (Treatment 3 and table condition in Treatment 4) In the table, if the 10 year average return is HIGHER THAN the target average return, this means: *a. That on average, the fund has returned more than the target return over the past;* b. That on average, the fund has not kept up with inflation over the past 10 years; c. That on average, the fund has returned more than other funds over the past 10 years; d. That on average, the fund has returned less than the target return over the past 10 years.

C4. (Treatments 1, 2 and graph condition in Treatment 4) If the fund loses money one year, for that year, the graph always shows: a. The blue line below the red line; b. The red line below the blue line; *c. The green bar below the horizontal axis*; d. The green bar lower than last year's green bar.

C4b (Treatment 3, and table condition in Treatment 4) If the fund loses money one year, for that year, the table always shows: a. The target average return below the 10 year average return; b. The 10 year average return below the target average return; *c. The 1 year return below 0%;* d. The 1 year return lower than last year's 1 year return.

C5. (Treatments 1-4) The level of investment risk for this fund is "negative returns expected every 3-4 out of 20 years". If the first 5 years in the graph (table) showed four (4) negative returns, how many negative returns would you expect to see in the NEXT 5 years of the graph? a. 0; *b. 1*; c. 2; d. Answers a, b and c are all equally likely.

C5b. (Treatments 5-7) The level of investment risk for this fund is a "1 in four chance of a negative return each year". If the first 5 years showed four (4) negative returns, how many negative returns would you expect to see in the NEXT 5 years? ? a. 0; *b. 1*; c. 2; d. Answers a, b and c are all equally likely.

C6. (Treatments 1-4) The level of investment risk for this fund is "negative returns expected every 3-4 out of 20 years". If the first 5 years in the graph (table) showed four (4) negative returns, how many negative returns would you expect to see in the NEXT 15 years of the graph? a. 0; b. 2; *c. 3*; d. Answers a, b and c are all equally likely.

C6b. (Treatments 5-7) The level of investment risk for this fund is a "1 in four chance of a negative return each year". If the first 5 years showed four (4) negative returns, how many negative returns would you expect to see in the NEXT 15 years? a. 0; b. 2; *c. 3*; d. Answers a, b and c are all equally likely.

C7. In the previous part of the survey when you compared the two funds, what did you notice about fees and costs? a. I didn't notice the fees and costs; b. The fees for one fund mainly went up while the other stayed about the same c. The fees for one fund mainly went down while the other stayed about the same; d. The fees for both funds stayed about the same. (Correct answer varied by Treatment and condition.)

C7b. (Treatments 2-7) In the previous part of the survey when you compared the two funds, what did you notice about returns? a. I didn't notice the returns; *b. The returns for one fund started lower but then rose higher compared with the other fund;* c. The returns for both funds were about the same.

C8. The returns information on the table (returns and target returns): a. Have fees and costs still included; *b. Have fees and costs deducted*; c. Have fees deducted but administration costs included.

Table E1: Dashboard comprehension and financial literacy

Panel A: Full dashboard	**% correct answers**						
	Inc.	Dec.	Table	Graph	High vol	Low vol	T1-T4
Relative fees and costs							
Fee treatment	70.7	57.6		64.3			
Return treatments	56.1	52.1	55.2	53.0	56.7	48.6	
							56.8
Relative returns							
Return treatments	49.1	48.2	53.6	43.9	45.1	56.3	48.6
Returns net of fees							43.9
Returns relative to target			72.1	31.5			46.0
Negative returns							47.5
Standard risk measure (5 yrs)							17.0
Standard risk measure (15 yrs)							13.2
Numeracy (3 Qs)							61.6
Financial literacy (3 Qs)							72.6
Superannuation literacy (12 Qs)							58.0
Panel B: Simplified dashboard	**% correct answers**						
	Inc.	Dec.			High vol	Low vol	T5-T7
Relative fees and costs							
Fee treatment	47.3	46.7					
Return treatments	63.8	58.8			59.3	63.2	
							56.5
Relative returns							
Return treatments	76.0	73.3			77.9	71.2	74.6
Returns net of fees							61.7
Simplified risk measure (5 yrs)							19.1
Simplified risk measure (15 yrs)							22.3
Numeracy (3 Qs)							61.2
Financial literacy (3 Qs)							70.3
Superannuation literacy (12 Qs)							56.2

Notes: This table reports percentage of participants correctly answering comprehension questions on full dashboard, numeracy, financial literacy and superannuation literacy. Questions are reproduced in Appendix E. Total number of participants in T1-4 is 1059, of which there were 286 in T1 (fee condition with graph); 274 in T2 (returns condition with graph); 252 in T3 (returns conditions with table); 247 in T4 (low volatility returns condition with table or graph). Total number of participants in T5-7 is 759, of which there were 251 in T5 (fee condition); 250 in T6 (low noise returns condition); and 258 in T7 (high noise returns condition). Participants were randomly assigned to either view increases or decreases in fees or returns over the 20 choices.

Financial Literacy

FL 1. Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? a. *More than $102*; b. Exactly $102; c. Less than $102; d. Do not know.

FL 2. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account? a. More than today; b. Exactly the same; *c. Less than today*; d. Do not know.

FL 3. Buying shares in a single company usually provides a safer return than buying units in a managed share fund. a. True; *b. False*; c. Do not know

Numeracy

N1 Imagine that we rolled a fair, six-sided die 1,000 times. Out of 1,000 rolls, how many times do you think the die would come up even? *500*

N2 In a lottery, the chance of winning a $500 prize is 1%. What is your best guess of how many people would win the prize if 1,000 people each buy a single ticket in the lottery? *10*

N3 In a raffle, the chance of winning a car is 1 in 1,000. What per cent of tickets in the raffle win a car? *0.1*

Superannuation (retirement plan) literacy

S1 Employers are required to pay superannuation contributions into the superannuation accounts of most of their employees. Is there a mandatory minimum employer contribution rate? *a. Yes*; b. No; c. Do not know.

S2 What % of an employee's salary is an employer currently required to contribute to superannuation?

S3 If you haven't chosen a superannuation fund your employer must pay your superannuation into a superannuation fund that offers MySuper. *a. True*; b. False; c. Do not know.

S4 Superannuation funds deduct fees from members' superannuation accounts. *a. True*; b. False; c. Do not know.

S5 Is the following statement true or false? "For most people, superannuation is taxed at a higher rate than a similar investment outside superannuation". a. True; *b. False*; c. Do not know.

S6 Can people make voluntary contributions to their superannuation accounts? *a. Yes*; b. No; c. Do not know.

S7 Are there any limits to the amount of these voluntary contributions? *a. Yes*; b. No; c. Do not know.

S8 If your superannuation account is invested in a "balanced" investment option, this means that it is invested exclusively in safe assets such as savings accounts, cash management accounts and term deposits. a. True; *b. False*; c. Do not know.

S9 You are allowed to borrow from your superannuation account. a. True; *b. False*; c. Do not know.

S10 If you have any superannuation, you will not qualify for the Age Pension. a. True; *b. False*; c. Do not know.

S11 Do you know the minimum age at which you can spend the money in your superannuation account? a. Yes; b. No; c. Do not know.

S12 The minimum age at which I can spend money in my superannuation account is: (Open question). *The correct answer depends on participant age and varies between 55 and 60 years.*