

## Research Working Paper

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# Delegation, trust and defaulting in retirement savings: Perspectives from plan executives and members

[Adam Butt](#)

The Australian National University

[Scott Donald](#)

UNSW Australia

[Doug Foster](#)

The University of Sydney

[Susan Thorp](#)

The University of Sydney

[Geoff Warren](#)

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July 2015

[Adam Butt](#)

The Australian National University  
Adam.Butt@anu.edu.au

[Scott Donald](#)

Centre for Law, Markets and Regulation, UNSW Australia  
S.Donald@unsw.edu.au

[Doug Foster](#)

The University of Sydney  
douglas.foster@sydney.edu.au

[Susan Thorp](#)

The University of Sydney  
susan.thorp@sydney.edu.au

[Geoff Warren](#)

Centre for International Finance and Regulation  
Geoff.Warren@cifr.edu.au

### Abstract

We combine survey data from retirement plan members with information from interviews with plan executives to get both perspectives on who accepts the default plan and default investment option and why. We use a natural experiment in default construction where a new regulatory framework required providers to have stipulated default settings in place by early 2014. We find that not all retirement savings plan members who default at the plan choice stage default at the investment choice stage, and vice versa. Only around one third of the sample say they defaulted twice. While some plan executives describe defaulting members as uninterested in their retirement savings, our results highlight that subjective lack of skill combined with trust in the managing agents are the prime motivations for defaulting, rather than low interest. Plan executives set a high risk exposure in default investment strategies to ensure high wealth growth, but defaulting respondents show a lower appetite for risk than active choosers. The heterogeneity and low skill of members make a case for smart defaults.

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## 1. Introduction

Introducing compulsion or automatic enrolment to retirement savings systems also entails designing default investment options. For more than a century, governments around the world have pursued policies designed to address their citizens' lack of foresight in respect of savings for retirement. Social security systems do not require members to make individual investment decisions. Nor do the defined benefit plans offered by private sector employers. However, these systems are being superseded by defined contribution (DC) plans that are intended to relieve funding pressure on governments and plan sponsors. Members of DC plans face the complex problem of managing a well-diversified, long-horizon investment portfolio, that will be a critical determinant of lifetime welfare. Many, and often the majority of, members delegate this problem to plan providers by never opting out of a default investment option.

If plan providers turn to academic studies of long horizon wealth management for guidance about default investments for DC plan members, they confront a puzzle. Optimal dynamic portfolio allocation models depend heavily on individual characteristics and beliefs. Even assuming that the distributions of asset payoffs is generally agreed, there is still personal risk aversion, tastes for inter-temporal substitution, subjective discount and mortality rates, human capital risk and return profile, borrowing constraints, background wealth allocations, entitlement to public transfer payments, and household structure to account for in optimal portfolio allocations.<sup>1</sup> This poses questions about how plan providers set investment defaults for large and diffuse groups of retirement plan members, and how well those defaults serve the members for whom they are designed.

Here we approach the question of designing default investment options from the perspective of both plan members and the executives working within plan providers. Our setting is a recent change in the regulation of default retirement savings plans (superannuation funds) in Australia, where participation is mandatory for almost all workers, and contributions must be at least 9.5% of earnings. In Section 2 below we place this default investment decision in the context of other “nudges” and libertarian paternalistic retirement savings policies, outlining Australian institutional features and relating them to institutions in other countries. Section 3 describes a survey completed by more than 1,000 plan members measuring their propensity to delegate the investment of their retirement savings, their demographic characteristics, risk tolerance and general financial goals.<sup>2</sup> We also describe in-depth interviews with 28 executives from 20 Australian plan providers responsible for the design and management of investment default options, asking about the perceived characteristics and needs of the members of their plans, and about their approach to designing the default offering.<sup>3</sup> In section 4 we use survey data to characterize members who either fail to opt out of, or actively choose, the default; and compare this characterization with the views of the plan executives. We also outline members' and executives' perspectives on the main drivers of delegation and default, and then compare members' rankings of investment goals and practices with the goals attributed to them by the plan executives.

## 2. Background

There is a great deal of behavioral economics research and policy debate that addresses retirement savings systems. This is partly because research has shown that ordinary individuals left to their own devices find

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<sup>1</sup> See Bodie et al. (2009) for a survey.

<sup>2</sup> A live link to the survey is at <http://survey.confirmit.com/wix/p3069725426.aspx>

<sup>3</sup> Butt et al. (2015a) give a detailed analysis of the interviews.

planning for retirement to be very difficult. People delay, refuse or over-simplify retirement savings decisions for many reasons: the time and effort needed to make the decisions may be high, or unknown;<sup>4</sup> they could tend to procrastinate over decisions involving present costs and future benefits; they could be inattentive to a decision until something cues it (such as changing jobs and being offered a pension plan); they might be afraid of making a mistake, especially where financial losses are possible; and they could have poor planning skills for savings, such as over optimism about investment returns, or the inability to understand the impact of compound interest (Rangel 2005). Policy makers confronted with aging populations have recognized these difficulties, and have stepped introduced a variety of means of addressing the issues.

While the policy measures selected in different countries to address under-funding for retirement vary in strength from compulsion to mild incentives, the surprising effectiveness of choice architecture in changing behavior has made libertarian paternalistic “nudges” popular.<sup>5</sup> Individuals will ignore even profitable arbitrage opportunities when active enrolment or contribution decisions are required; and the effect of policies on net savings are much higher when they operate on passive behavior channels, such as automatic enrolment, rather than active behavior channels, such as tax incentives (e.g., Choi et al. 2005; Chetty et al. 2012). In addition, if plan members use naïve diversification strategies or simple rules to choose investments, the way that investment options are presented changes outcomes. People will divide wealth between a few (or all) options even when they are already diversified, or settle on a risky default option, such as employer stock (Benartzi and Thaler 2001; Huberman and Jiang 2006; Brown et al. 2007; Agnew et al. 2011; Morrin et al. 2012). Consequently, regulators have resolved that public policy and individual welfare can be improved by defaults that encourage saving into diversified investment strategies.

While defaults can be remarkably effective (e.g., Cronqvist and Thaler 2004), whether they improve individual welfare depends on why people accept them (Brown et al. 2015) and the social context in which they are set. Smith et al. (2013) give three reasons for the general effectiveness of defaults, with different implications for default setters. The first is implied endorsement, where individuals interpret the default as the recommendation of a policy maker, or as an indication of what most people choose, or as the recommendation of the plan provider. The second is cognitive biases, where loss aversion or unconstructed preferences tilt people toward the default. The third is the effort needed to switch away from the default. According to Smith et al., situations where people default because of cognitive biases raise ethical issues of individual autonomy. They argue that if behavioral biases or bounded cognition are guiding choices, the active choice could be worse than the default. At the same time, Brown et al. (2015) document higher levels of regret among defaulters than active choosers, particularly if people default because of procrastination or the cost of information. Further, Carlin et al. (2013) argue that the loss of social learning due to people relying on defaults and not acquiring and sharing useful information can be damaging to society as a whole. When plan members are heterogeneous in ways that matter to optimal investment choices, but are not necessarily well equipped to make a decision, default setters need to consider smart defaults, using personal information to guide choice of investment strategy rather than a one-size-fits-all option (Smith et al. 2013; Fernandes et al. 2014).

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<sup>4</sup> Unknown decision making costs can lead to paralysis: the problem of figuring out what investment of time and money is needed to make the original decision is harder than the decision itself, i.e., is it worth solving the problem of whether it is worth solving the problem?, etc. (Conlisk 1996).

<sup>5</sup> See Benartzi and Thaler (2007) for a survey of behavioral research related to retirement savings. One example of attention to behavioral factors by policy makers is the UK government Behavioural Insights Team, established with the aim of applying behavioral insights “in support of social purpose goals.”

Research into life cycle asset allocation shows that even creating very smart defaults that rely on a lot of personal information would not necessarily guarantee individual members an optimal investment strategy. Normative studies of life cycle portfolio strategies have moved a long way from the “constant proportion in stocks”, wealth independent, strategies of Samuelson (1969) and Merton (1971). These simple strategies involve static asset allocations that are relatively easy to translate into products which can act as defaults in a retirement plan, assuming some representative risk tolerance among default members and agreement about the investment opportunity set. However, even slight adjustments to the life cycle model may generate radically different ‘optimal’ portfolios in a number of ways.

First, dynamic and/or wealth-sensitive strategies result from introducing more general preferences than constant relative risk aversion, such as habit-formation (Polkovnichenko 2007), recursive (Epstein-Zin-Weil) preferences that allow for a separation of tastes for consumption smoothing and risk (Gomes and Michaelides 2005), or prospect theory preferences (He and Zhou 2011). In these instances, optimal strategies depend on individual tastes for risk, inter-temporal substitution, consumption history, and/or kinks in preferences.

Second, if most young households have a large amount of wealth in relatively low-risk human capital (an assumption implicit in the design of the popular life-cycle or target date funds), then optimal allocations move along glide paths where “stocks are for the young” and risky exposure diminishes with age (e.g., Jagannathan and Kocherlakota 1996; Heaton and Lucas 2000; Cocco et al. 2005). However, the glide path needs to be modified (and could even be reversed) to take account of the correlation of labor income shocks with risky asset returns, and idiosyncratic labor income shocks, that change the risk of the human wealth component (e.g., Benzoni et al. 2007; Gomes and Michaelides 2005). In addition, recent empirical work using data on millions of US workers indicates that the size and persistence of labor income shocks varies by age and by income quantile (Guisen et al. 2015), so that an even wider set of factors can change the optimal glide path.

Third, time varying or predictable returns to financial asset markets mean further modifications in the form of dynamic hedging. Some models predict a complete unwinding of, or sharp increases in, stock exposures at certain times (e.g., Michaelides and Zhang 2015). Other important adjustments are made for housing wealth, liquidity constraints and public pension provision. (Bodie et al. 2009 presents a useful survey.)

In other words, theoretically optimal portfolio allocations should be highly individualized with complex dynamic hedging components. The majority of default investment strategies in occupational DC plans around the world are operated as a simple life-cycle strategy, and don’t aim for theoretically optimal strategies (Van der Horst 2013).

Members of retirement savings plans very often delegate their investment decisions to plan providers (constituted as trustees in Australian superannuation funds). In practice, this means that the executives employed by those entities are very influential in the strategies applied to member balances. In the discussion so far we have assumed that plan providers choose a default investment they believe to be in the best interest of members, even though this involves organizational structures with many layers of delegation where incentives could be misaligned. However, the theory of delegated investment management has not settled on a general form for an incentive compatible contract suitable for managing this risk. In part this is because the investment executive (agent) decides their own effort, and can change risk by controlling the scale of their response to information. Aspects of contracts such as non-linear or asymmetric payoffs, benchmarking and multi-period contracting can have both good and bad effects in

different settings (Stracca 2006). Pension systems introduce even more complications to principal-agent relationships: employers act on behalf of employees in choosing a default plan, but receive none of the direct benefits. They could also face high search or administrative costs, and might be guided by factors that are irrelevant to members. Plan trustees and executives might not act in the most efficient or cost effective way, even in not-for-profit plans. In compulsory systems operated by private providers, plan trustees and executives might face incentives that are not compatible with the government that creates the system (Productivity Commission 2012). A similarly complex set of issues arises as between the executives within the plan providers, and both the plan provider and the members of the plan. This multi-layered principal-agent relationship is a key area in our study, and we discuss the implications of the interview and survey data for this issue in section 4.

### ***2.1 Australian retirement savings system and MySuper***

Australia's retirement savings system relies on both compulsion and defaults. Since the early 1990s, earnings-related retirement savings has been supported by legislation (the "Superannuation Guarantee") that currently sets a mandatory minimum employer contribution of 9.5% of earnings to be paid into individual accounts for employees who meet minimal age and employment criteria.<sup>6</sup> Over the past two decades, the Australian pension industry has grown to the fourth largest in the world (US\$1.6 trillion in 2013), and consists of the world's second largest (after the US) pool of DC savings (Towers Watson 2014).

Compulsory participation in the system sets the Australian retirement savings system apart from general auto-enrolment with opt out, as operates in the UK, New Zealand and in some workplaces in the US. Over 90% of the Australian workforce has at least one superannuation account, managed in most cases by a private provider that operates as a trustee of the "superannuation fund."<sup>7</sup> If an employee does not choose a superannuation fund (plan) for themselves, employers will pay contributions into the employee's personal account in a default plan that the employer has chosen.<sup>8</sup> If an employee does not choose an investment strategy for their contributions<sup>9</sup>, their contributions are placed in the default strategy by the plan trustee. Guidelines for setting default investments in Australian superannuation funds are similar to those for US 401(k) plans.<sup>10</sup> Historically, the most common default investment has been a diversified "balanced" option with approximately a 70:30 mix of growth and defensive asset classes, but an increasing number of plans are offering life-cycle strategies.<sup>11</sup> Default investment options house the largest share of assets of superannuation funds, at around 44% of total funds under management in 2013 (APRA 2014). The smaller account balances of many members in the default options means that this represents a somewhat larger proportion of members.

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<sup>6</sup> Unlike most other western economies, Australia has never had a public social security system with payments linked to labor market history. Before the Superannuation Guarantee was introduced, only about one third of employees participated in superannuation plans. Most of those covered were public servants and white collar employees of large corporations.

<sup>7</sup> Superannuation savings are tax preferred and preserved until an age of between 55 and 60. At preservation age, members can withdraw their savings as a lump sum and/or purchase retirement income products.

<sup>8</sup> There are a small number of employees, such as some public servants, who are not able to choose their own superannuation fund. People in this category were excluded from our survey sample.

<sup>9</sup> Most plans offer a menu of at least 4 diversified strategies, often coupled with an additional range of single asset class strategies, and sometimes the option to invest in single managers or even securities.

<sup>10</sup> See FINRA <http://www.finra.org/Investors/SmartInvesting/Retirement/Smart401kInvesting/investing/>. Most occupational pension plans offer life-cycle defaults (Van der Horst 2013).

<sup>11</sup> Chant et al. (2014) provide an overview of the structure of Australian MySuper default funds. We also note that leverage and high concentration are both excluded by regulation.

A guaranteed flow of savings into superannuation funds from members with low knowledge and little interest could permit the persistence of both misaligned incentives between plan executives and members, and inefficiency. To that end, a 2010 review of the Australian superannuation system recommended that the interests of defaulting members would be best served by a simple, low-fee, scalable default structure (Super System Review 2010). In the view of the review panel, most members were not engaged enough with retirement savings for the ‘system to work properly’ (Super System Review 2010, p. 9). The panel also concluded that the consumer protection given by extensive disclosures and market disciplines needed to be reinforced with improved default settings. The government implemented these recommendations through a series of regulations labeled “MySuper”. (See Chant et al. (2014) for a description of MySuper and details of industry implementation of the policy.)

The MySuper regulations aimed for low cost provision of an uncomplicated, low fee superannuation product that could be easily compared between plans, offered as either a single diversified investment option or life-cycle strategy. The MySuper “product” is the default setting within a larger plan that also offers members less closely regulated “choice” products. Members who subsequently opt out of MySuper products into a “choice” option usually pay a switching and/or exit fee, but this is limited to cost recovery and cannot contain a profit or penalty element.<sup>12</sup> Plans that offer MySuper products also have to build an “information dashboard” conforming to a template set by the regulator that aims to promote comparisons of MySuper products across standardized features. To encourage large plan providers to offer MySuper products, the government stipulated that after 1 January 2014, default contributions could only be paid into a MySuper compliant product, and that by 1 July 2017 all outstanding default balances must be transferred into a MySuper fund. Since default offerings attract the most members and the highest contribution flows, large, public offer plan providers complied with the MySuper changes.

MySuper products began appearing in 2013, and by the end of 2014, around 40% of plans were participating. Around 34% of the assets of plans supervised by the Australian Prudential Regulation Authority (APRA) were housed in MySuper accounts by the end of 2014 (APRA 2015). Most plans chose MySuper (default) investment options that involved strategic asset allocation (SAA) ‘balanced’ strategies, maintaining a fixed proportion of growth and defensive assets for members of any age. Most not-for-profit plans offer SAA investment defaults, typically continuing the default investment option they were operating at the time MySuper regulations were introduced. Around 20% of plans, mainly for-profit, have newly adopted life-cycle strategies for their MySuper defaults (Chant et al. 2014). This increase in life-cycle defaults is a key change in industry practice arising from the new regulations. In addition, MySuper regulation has motivated lower fees, especially among for-profit plans (Chant et al. 2014); however the range of fees charged by MySuper products is very wide.

We explore the change in retirement savings defaults to help understand the characteristics and motivations of both the members who default, and the executives who design defaults. In the next section we outline our survey and interview methods, and the characteristics of the samples.

### 3. Survey and interviews

Our study uses new information collected from interviews of plan executives and a survey of members. We conducted the interviews and survey independently of each other, so that participants in one did not know the responses in the other. The survey was designed before interview transcripts were analyzed by the

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<sup>12</sup> Section 29VC(5) of SIS.



researchers, minimizing any transfer of ideas from one context to the other. By combining information from both collections we can see how well plan executives (agents) understand their members (principals) and their goals. We conducted the interviews during the six months to May 2014, and fielded the survey in June-August 2014.

### ***3.1 Interview structure***

Interviews can generate insight into decision processes that have high degrees of uncertainty and ambiguity, such as pension plan design where organizational objectives, regulations and member needs all have to be considered. Interviews can also show up perceptions and rationalizations of observed behavior, allowing further questions and enquiry more easily than rigid surveys (Tuckett 2012; Foster and Warren 2014). For these reasons, interviews are well suited to addressing questions about default design. In a companion paper, (Butt et al. 2015a), we give a detailed description and analysis of the interview sample, process and content.

We conducted one-hour in-person interviews with 28 plan executives from 20 superannuation fund providers, covering 17% of MySuper default products at the time (June 2014) and about 45% of default money managed by large institutional plan providers. The executives we interviewed included CEOs, CIOs, portfolio executives, product executives, asset consultants and one legal and compliance executive. The sample (see Butt et al. 2015a, Table 1) gave representation across industry sector (for-profit 'retail' plans; and not-for-profit plans covering the industry, public and corporate sectors); plan size; and investment strategy, including an equal number of life-cycle and balanced investment strategies.

Content of the interviews was analyzed independently by two researchers. Statements from interview transcripts were allocated by one researcher into categories corresponding to common themes, concepts, viewpoints or facts, but without specifying categories in advance, iteratively updating the categories. The categories and allocation were then cross-checked against the allocations of another researcher. Findings on decision making processes, views and MySuper product design from the interviews were verified by data triangulation (cross-checking against observed behavior or documents relating to the relevant plans), independent verification by other researchers, and by interview participants themselves, who reviewed draft findings for accuracy and plausibility. In the end, we grouped findings into five areas: the purpose and motivation of MySuper design; perceptions of member needs; scope and influences on MySuper design; choice of investment strategy; and reflections on the regulatory change itself.<sup>13</sup> Further detail on the analysis process and categories can be found in Butt et al. (2014, 2015a).

### ***3.2 Survey structure***

To complement the interviews, we implemented an online survey of members. Our survey<sup>14</sup> sampled 1,053 people between the ages of 18 and 75 from the PureProfile online panel of over 600,000 Australians. PureProfile maintains a nationally representative panel, and invited people to participate in the survey by email. The survey ran during August 2014. As panel members responded to the email invitation to join the survey, they were filtered to ensure population-representative gender and age patterns, that they were members of a superannuation fund, and that they had a genuine choice over the default options we study. Respondents who completed the survey were paid around AUD\$4 for their time and effort. We also

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<sup>13</sup> Views of plan executives on the industry and its regulation appear in Butt et al. (2015b).

<sup>14</sup> <http://survey.confirmit.com/wix/p3069725426.aspx>

checked attentiveness during the survey using an Instructional Manipulation Check (IMC) (Oppenheimer et al. 2009) in the form of a repeated question.

The survey had four main sections. In the first section, eligible respondents were filtered, then asked about their superannuation membership, account balance, and default status. This included asking whether they had “deliberately defaulted” (using the term of Brown et al. 2015) by making an active choice of the defaults. This section also asked defaulting members if they had heard of the MySuper regulations, or noticed any changes in their accounts and plans since MySuper was introduced. We use responses from this first section to compute rates of defaulting and passive and active choices, and hence classify members accordingly.

The second section used Best-Worst methods (Marley and Louviere 2005) and rating scales to measure preferences of respondents over three aspects of retirement savings investment management: 1) propensity to delegate; 2) investment objectives; and 3) investment philosophies. For 1 and 2, we showed respondents a list of statements about delegation factors (control, skill, product suitability, trust, monitoring and accountability) and investment objectives (short term risk/return trade off, retirement income security, life-cycle glide path, peer comparison and fees), and asked them to “please select which statement best matches what you want or think”. The statements are listed in Table 1 (see page 10). We then showed respondents a table populated by the statements they had said most matched what they wanted or thought, and asked them to choose the most and least important factors that affected their superannuation decisions or non-decisions from the list. This was done over several stages, until we had a complete ranking of the relative importance of each factor for each individual. At the end, we understood a respondent’s views on a delegation factor or investment objective, and the relative importance they placed on each factor or objective compared with the others in the list.

For investment philosophies (i.e. aspect 3 above), we showed respondents a table listing “market timing”, “active investing”, “diversification”, “local preference”, and “socially responsible investing”; coupled with a short sentence defining what we meant by each investment method. We asked respondents to select those investment methods that they were aware of and understood. For each method that a respondent said they were aware of and understood, we then measured their opinion. We showed them a slider where the left position expressed one extreme of opinion, the middle expressed “I have no opinion either way”, and the right expressed the other extreme. For example, if the respondent said they were aware of and understood diversification, on the left side of the slider they saw the statement “I want my fund to be broadly diversified at all times, to get smoother returns”; at the center, the statement “I have no opinion”; and at the right side of the slider, “I want my fund to be concentrated in the best investment prospects, even if I get uneven returns”. Figure 1 (see page 11) shows screenshots of the table of investment methods, and an example of a slider screen that would be presented to a respondent who selected all the investment methods. Even though the sliders did not show a numerical scale to respondents, we collected the slider positions people chose on the scale as numbers from 0 to 100. These questions informed us about the importance of common investment strategies to the members of plans.

The third section measured the financial literacy and numeracy of respondents, along with their risk tolerance; and the fourth section collected demographics such as marital status, income and occupation. Respondents answered three numeracy questions on a widely-used scale (Lipkus et al. 2001) testing fractions, proportions and probability. Financial literacy was measured using three standard questions (Lusardi and Mitchell 2011) on simple interest, inflation and diversification. We added three more questions on compound interest, investment management fees and understanding of the risk of a typical

balanced fund. We also asked respondents to rate their own risk tolerance by asking “How do you see yourself? Are you generally a person who is fully prepared to take risks in financial matters or do you try to avoid taking risks?” (Dohmen et al. 2011). Responses were collected using an (unnumbered) slider with “Unwilling to take risks in financial matters” on the left extreme, and “Fully prepared to take risks in financial matters” on the right extreme. We include responses to these last two sections both as covariates in the econometric modeling described below in section 4, and to check whether our sample represented the general population.

**Table 1: Propensity to delegate and investment goals - Statements shown to respondents**

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**Panel A: Propensity to delegate**

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I want a lot of control over my super  
 I do not want a lot of control over my super  
 I have plenty of skill and knowledge for making decisions about my super  
 I have little skill and knowledge for making decisions about my super  
 It takes, or would take, a lot of time to make my own decisions about super  
 It does not take, or would not take, a lot of time to make my own decisions about super  
 It costs, or would cost, a lot of money to make my own decisions about super  
 It does not cost, or would not cost, a lot of money to make my own decisions about super  
 The super fund recommended by my employer suits me  
 The super fund recommended by my employer does not suit me  
 Default investment options of superannuation funds suit me  
 Default investment options of superannuation funds do not suit me  
 I trust the super fund recommended by my employer to make decisions in my best interests  
 I do not trust the super fund recommended by my employer to make decisions in my best interests  
 The super fund recommended by my employer is well monitored  
 The super fund recommended by my employer is not well monitored  
 The super fund recommended by my employer is accountable for its actions  
 The super fund recommended by my employer is not accountable for its actions

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**Panel B: Retirement savings goals**

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I will accept lower average returns to avoid losses in the short term  
 I want high average returns and will accept losses in the short term  
 I want to be very certain of a basic amount of retirement wealth  
 I will accept uncertainty for a better chance of high retirement wealth  
 I want to compare my fund with similar funds regularly  
 I want to compare my fund with similar funds rarely, if ever  
 I want my super investment strategy to be less risky as I age, even if it means lower returns  
 I want my super investment strategy to stay much the same as I age  
 I want my fund to charge lower fees than other funds  
 I will pay higher fees than other funds, if my fund is better than average

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**Figure 1: Investment philosophy description table and example slider**

**Panel A: Investment philosophy**

The following questions ask you about your general investment philosophy.

This table shows some general methods of investment that can be used by super funds. Select the boxes next to the methods that you are aware of and understand.

If you are not aware of any of them, don't tick any boxes.

|                          | Strategy                              | Description   |
|--------------------------|---------------------------------------|---|
| <input type="checkbox"/> | Market timing                         | Moving money between various assets at particular times to try to reduce losses and capture gains. (The alternative is to keep the same mix of assets all the time)                             |
| <input type="checkbox"/> | Active investing (i.e. stock picking) | Paying higher fees to managers who try to choose the shares that are expected to do better than the market average. (The alternative is to buy all the stocks in the market and pay lower fees) |
| <input type="checkbox"/> | Diversification                       | Putting money into a wide range of investments to get more even returns. (The alternative is to put more money in investments with the best prospects but get more uneven returns)              |
| <input type="checkbox"/> | Local preference                      | A preference for Australian over international investments  |
| <input type="checkbox"/> | Socially responsible investing (SRI)  | An investment strategy that promotes positive environmental, social or ethical issues (e.g. avoiding companies involved in tobacco, weapons manufacture, gambling)                              |

**Panel B: Sliders**

For each way to invest that you said you "understood" in the previous question, rate your position on them.

Please use the slider to indicate your position on each investment method. You must move each slider at least once before proceeding.

**Market Timing**

I don't want my super fund to attempt to time the markets I have no opinion I want my super fund to attempt to time the markets

**Active investing, i.e. stock picking**

I don't want my fund to try to choose the best shares, and would prefer lower fees I have no opinion I want my fund to try to choose the best shares, even if I pay more in fees

**Diversification**

I want my fund to be broadly diversified at all times, to get smoother returns I have no opinion I want my fund to be concentrated in the best investment prospects, even if I get uneven returns

**Local preference**

I want mainly Australian investments I have no opinion I don't have a preference for Australian or international investments

**Socially responsible or ethical investing (SRI)**

I want my fund to stick to socially responsible investments I have no opinion I don't expect my fund to stick to socially responsible investments, and want them to hold whatever investments will give the best returns

**Table 2: Survey sample and 2011 Population Census (18-74 years), proportions**

|  | <i>Survey respondents</i> | <i>Census</i> | <i>Default fund</i> | <i>Default investment</i> |
|--|---------------------------|---------------|---------------------|---------------------------|
| <b>Gender</b>                                    |                           |               |                     |                           |
| Male   | 0.497                     | 0.495         | 0.471*              | 0.390***                  |
| Female   | 0.503                     | 0.505         | 0.529*              | 0.610***                  |
| <b>Marital Status</b>                            |                           |               |                     |                           |
| Never married and not in a de facto relationship | 0.248                     | 0.334         | 0.271**             | 0.322***                  |
| Widowed  | 0.012                     | 0.025         | 0.010               | 0.011                     |
| Divorced   | 0.077                     | 0.091         | 0.067               | 0.076                     |
| Separated  | 0.034                     | 0.034         | 0.027               | 0.027                     |
| Married  | 0.500                     | 0.516         | 0.498               | 0.409***                  |
| De facto relationship                            | 0.130                     | N/A           | 0.127               | 0.155**                   |
| <b>Highest Tertiary Education Level</b>          |                           |               |                     |                           |
| PhD  | 0.015                     | 0.009         | 0.023***            | 0.001                     |
| Postgraduate                                     | 0.175                     | 0.057         | 0.179               | 0.142***                  |
| Bachelor degree                                  | 0.259                     | 0.167         | 0.261               | 0.256                     |
| Technical or vocational training                 | 0.384                     | 0.315         | 0.367               | 0.393                     |
| None   | 0.168                     | 0.452         | 0.169               | 0.199***                  |
| <b>Highest Secondary Education Level</b>         |                           |               |                     |                           |
| Year 12  | 0.769                     | 0.564         | 0.767               | 0.796**                   |
| Year 10-11                                       | 0.209                     | 0.327         | 0.199               | 0.186*                    |
| Lower  | 0.022                     | 0.109         | 0.034***            | 0.019                     |
| <b>Personal Income</b>                           |                           |               |                     |                           |
| Negative income                                  | 0.000                     | 0.006         | 0.000               | 0.000                     |
| Nil income                                       | 0.006                     | 0.064         | 0.007               | 0.006                     |
| \$1-\$199 (\$1-\$10,399)                         | 0.043                     | 0.068         | 0.049               | 0.053*                    |
| \$200-\$299 (\$10,400-\$15,599)                  | 0.048                     | 0.104         | 0.045               | 0.068***                  |
| \$300-\$399 (\$15,600-\$20,799)                  | 0.048                     | 0.093         | 0.047               | 0.063**                   |
| \$400-\$599 (\$20,800-\$31,199)                  | 0.113                     | 0.126         | 0.127               | 0.150                     |
| \$600-\$799 (\$31,200-\$41,599)                  | 0.108                     | 0.122         | 0.116               | 0.131**                   |
| \$800-\$999 (\$41,600-\$51,999)                  | 0.122                     | 0.100         | 0.117               | 0.110                     |
| \$1,000-\$1,249 (\$52,000-\$64,999)              | 0.151                     | 0.096         | 0.142               | 0.165                     |
| \$1,250-\$1,499 (\$65,000-\$77,999)              | 0.089                     | 0.067         | 0.094               | 0.085                     |
| \$1,500-\$1,999 (\$78,000-\$103,999)             | 0.143                     | 0.079         | 0.141               | 0.116                     |
| \$2,000 or more (\$104,000 or more)              | 0.128                     | 0.076         | 0.116               | 0.055                     |
| <b>Age group</b>                                 |                           |               |                     |                           |
| 18-34 years                                      | 0.325                     |               | 0.365***            | 0.430***                  |
| 35-54 years                                      | 0.437                     |               | 0.435               | 0.405**                   |
| 55+ years  | 0.241                     |               | 0.201***            | 0.165***                  |
| <b>Financial Knowledge</b>                       |                           |               |                     |                           |
| Median no. correct (/9)                          | 5                         |               | 5                   | 4                         |

\*\*\*/\*\*/\* reflects significance at the 10%/5%/1% level for the difference in proportion of respondents of a certain demographic (e.g. "Male") within the default group compared to the non-default group.

*Notes:* This table reports attribute proportions for the sample of 1,053 survey respondents from PureProfile online panel completing the survey in August 2014, comparing with 2011 Census data from the Australian Bureau of Statistics. Age proportions are not reported since the sample was filtered to match the population.

Table 2 (see page 12) compares survey respondents with data from the 2011 Australian Census. Respondents in the survey sample are more likely to have a tertiary education and to earn a higher personal income than the 2011 population, which is consistent with the fact that survey respondents must be members of a superannuation fund and so more likely to be employed. In the analysis below, we report on 1,031 respondents, having dropped 22 people who did not meet the criteria for the study from the sample.<sup>15</sup>

## 4. Results

In this section we divide the member survey respondents into defaulters and choosers. We draw out the characteristics of each group, comparing with the description of these groups taken from the interviews of plan executives. We then look deeper into the delegation decision by identifying the factors that most influenced defaulters, again comparing with the perceptions of executives. Finally, we use ordered regression to help understand the predictors of opting out.

### 4.1 Characteristics of defaulters

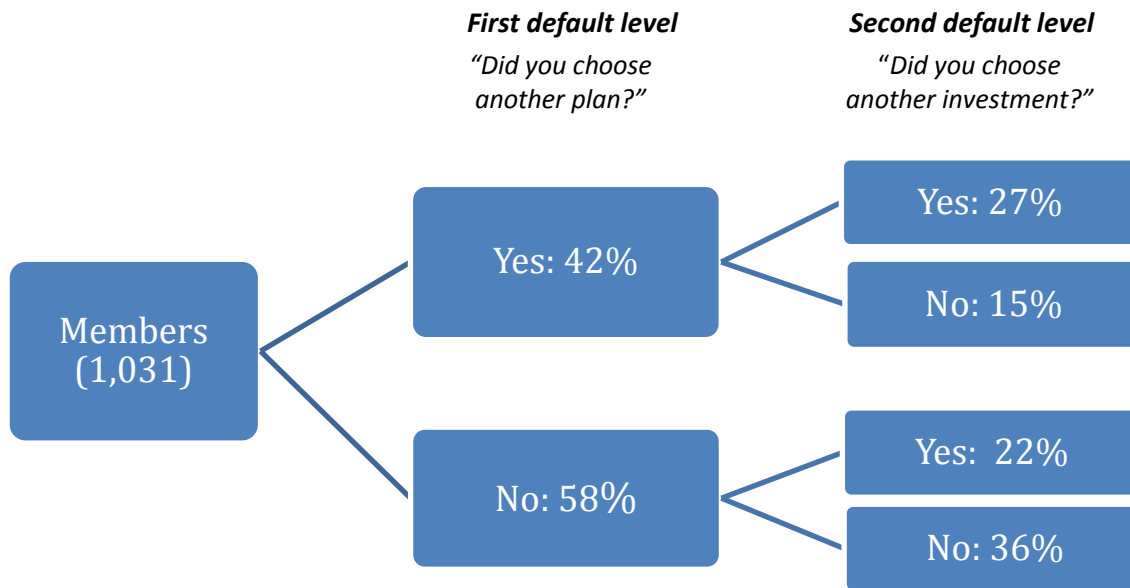
We study the two choices that MySuper was most concerned with: choice of plan provider (in Australia, “choice of fund”), and choice of investment strategy.<sup>16</sup> We counted respondents who answered “yes” or “don’t know” to the question “Are you currently a member of the super fund recommended by your current employer?” as defaulting at the choice of plan (fund) node. We then asked respondents to think about the superannuation account they held with the most money in it (their “main account”). We counted respondents as defaulting at the investment strategy node who answered “no” or “don’t know” to the question: “Most super funds choose a 'default' investment strategy for members who don’t choose an investment strategy for themselves. Thinking still about your main super fund, did you choose your own investment strategy or let the super fund choose?” A few respondents selected “other” and wrote in an open response box; we sorted these into default or choice categories using our best judgment over their answers. Figure 2 reports the proportion of respondents in each default/choice category.

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<sup>15</sup> The 22 people who were dropped from the sample consisted of respondents who identified as self-employed in one question but not in another; were a government employee and so had no choice; indicated that their employer was “unable” to use the provider that the respondent wanted to use; and/or identified as belonging to their default plan, but also being a member of a self-managed superannuation fund.

<sup>16</sup> Eligible survey respondents confront many real decisions about their superannuation contributions apart from just choice of fund (plan provider) and choice of investment strategy, including choices about insurance life, disability and income, with option to vary from the default), voluntary contributions, registration with online member services (access to reports and calculators), and decisions about taking up financial advice.

**Figure 2: Proportions of respondents choosing and defaulting at choice nodes**



*Notes:* This figure shows proportions of total sample (n=1,031) who defaulted or chose at two decision nodes. The first choice is whether to go with the provider (superannuation fund) chosen by the employer, or choose another plan for themselves. The second is whether to go with the default investment option of the provider, or choose another investment(s). Respondents who chose “don’t know” at either node are counted as defaulters. Respondents who deliberately defaulted (i.e. actively chose the default) are also counted here as defaulters.

A direct connection between “disengagement” and defaulting is often made by industry and policy makers. While comments made during interviews suggest that some plan executives recognize that members are not all the same, they nevertheless characterize the “typical” default member as disengaged and poorly informed, and possibly not even knowing that they’re a member of the plan (Butt et al. 2015a, p.15). The original intention of the MySuper recommendations was to encompass people who wanted to delegate investment decisions as well as those who defaulted because they were disengaged. However, much commentary frames disengagement as pervasive and directly linked to defaulting. While the system is still flexible enough to accommodate various patterns of choice and defaults, the structure works on the assumption that most default members will default at both steps.

The group of “double defaulters” is, in fact, a minority of members, and possibly as low as one third (Figure 2). While people who actively choose at the first node are more likely to actively choose again, and defaulters at the first node are more likely to default again, 37% of the respondents default at one decision and choose at the other. Active choosers at both nodes make up 27% of the sample, and defaulters at both nodes make up 36% of the sample.

The data behind Figure 2 suggest that opting out of the default investment is more common than opting out of the plan (fund) level choice. Around half (49%) of the sample report having opted out of the investment choice compared with 42% opting out of the default plan. When starting a new job, members who make a choice of plan (fund) differing from that offered by their employer have to give their employer details of their existing account (if they want to consolidate accounts) or details of their preferred plan provider. Members who opt out of the default investment option usually only have to tick a box, or write

the proportion of their contributions going into alternative investment option(s) on a form (although different strategies will usually entail different fees). Setting aside the work the member would need to do to decide on the best plan and investment option, the simple administrative burden of giving effect to a choice is usually less for the investment decision than for the plan decision.<sup>17</sup>

The number of active choosers in default options (i.e. deliberate defaulters) is not observable in aggregate data, but the survey can identify them. We count 15% of all respondents as deliberate defaulters at the plan choice stage, and 4% as deliberate defaulters at the investment choice stage (see Table 3, page 16). This implies that around 26% of members in the default plan are there deliberately, and about 9% of people in the default investment strategy are there deliberately.<sup>18</sup> If members who are making active choices decide on the default plan and/or default investment option, we can infer that the strategy selected is attractive to at least some members, though not necessarily those who have defaulted. In addition, it is clear that not all defaulters are completely disengaged or uninformed, and non-default choices are not a reliable proxy for member interest and engagement (Bateman et al. 2014; Brown et al. 2015).

Defaulters are more likely to be younger and have lower incomes than non-defaulters. (Table 2 shows proportions for different groups.) This was noted by some executives in interviews. One executive estimated that around 85% of their 30 year old members to be invested in the default investment option, compared with about 30% of 55 year olds (Butt et al. 2015a, p. 15). Survey results were roughly in line with this estimate, with about 70% of 18-34 year olds and about 35% of over 55 year olds reporting being in the default investment option. As account balances rise and retirement approaches, the costs of a non-optimal default become larger and are likely to prompt more members to opt out.

Financial capability also affects defaulting behavior. People in the default investment option (but not the default plan) have slightly lower financial knowledge compared with the total sample, when measured by tests of objective financial literacy and numeracy (Table 2). This relatively small difference is important, since comments by the majority of executives suggest that they conflate disengagement and low financial knowledge among the 'average' default member (Butt et al. 2015a, p15).

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<sup>17</sup> Defaulting into the employer's plan can actually make an administrative burden for members that they might learn to avoid. People who change employers can end up with many accounts in different plans that are hard to keep track of and can be lost. As well, each plan automatically deducts life insurance premiums and administrative fees that will reduce small balances without giving the members any additional insurance coverage or administrative service. We do not know if respondents have consolidated accounts in the past, or if the plan choice or deliberate default they report in the survey amounts to account consolidation.

<sup>18</sup> Figures on active and passive defaulting from other sources vary widely. The Productivity Commission (2012, Box 2.2, p. 36) combines data from several sources to report 50-70% of Australian employees stay in their employer's default fund (plan), with about 25% of those deliberately defaulting, similar to the results we find here. There has been little data on the number of members deliberately defaulting into the investment option, which is not well understood.



**Table 3: Active and passive choices of fund (plan provider) and investment option**

|   | <i>All respondents</i> | <i>Respondents who passed the IMC</i> |
|---|------------------------|---------------------------------------|
| <b>Did you choose a different fund to the default of your employer?</b>               |                        |                                       |
| Yes   | 434                    | 306                                   |
| No - but I actively chose the default   | 158                    | 127                                   |
| No - I was already in the default when I came to this employer                        | 15                     | 11                                    |
| No - I just went with the employer fund without investigation,<br>OR ... I don't know | 424                    | 305                                   |
| <i>Total</i>  | <i>1031</i>            | <i>749</i>                            |
| <b>Respondents making fund choice</b>   |                        |                                       |
| <b>Did you choose a different investment option to the default?</b>                   |                        |                                       |
| Yes   | 211                    | 150                                   |
| No - but I actively chose the default   | 23                     | 18                                    |
| No - I just went with the default without investigation,<br>OR ... I don't know       | 136                    | 97                                    |
| Self-managed super fund   | 64                     | 41                                    |
| <i>Total</i>  | <i>434</i>             | <i>306</i>                            |
| <b>Respondents not making fund choice</b>   |                        |                                       |
| <b>Did you choose a different investment option to the default?</b>                   |                        |                                       |
| Yes   | 228                    | 163                                   |
| No - but I actively chose the default   | 22                     | 18                                    |
| No - I just went with the default without investigation,<br>OR ... I don't know       | 347                    | 262                                   |
| <i>Total</i>  | <i>597</i>             | <i>443</i>                            |

*Notes:* This table shows counts of respondents who opted into or out of defaults at the choice of plan (fund) stage and/or at the choice of investment option stage. The far right column reports counts only for respondents who passed the instructional manipulation check for attentiveness.

Members of default investment options also report lower willingness to take financial risks than the overall survey sample. Figure 3 (see page 18) shows the distribution of risk tolerance for the full member sample, those members in the default investment strategy, and members in the default plan. The mean and median willingness to take financial risks is much lower for members of the default investment option than for the full sample, and the distribution is more right skewed. (Mean and median willingness to take financial risk is only slightly lower among members of the default plan than the full sample.) Few executives commented on the relative risk tolerance of default over non-default members, while some acknowledge the difficulty of measuring risk tolerance:

*“For example we know what their contributions are, we know what their age is, we know whether they’re a man or a woman, but we don’t know what their spouse has, we don’t know what money they have outside of superannuation, we don’t know what their risk tolerance is necessarily unless they come in and utilize some form of advice.”*

In the interviews, discussions of risk tolerance were dominated by considerations of age. Some executives interpret the fact that default members are likely to be young as a reason to admit higher risk exposure in the default investment option, or referred to a relation between age and declining risk tolerance to justify a life-cycle strategy:

*"...more risk when they're young and less risk when they're old and try not to blow them up just before they hit retirement.";*

*"So they tend to be more risk-averse when they get older and I think that's something that's not captured in a static 70/30..."*

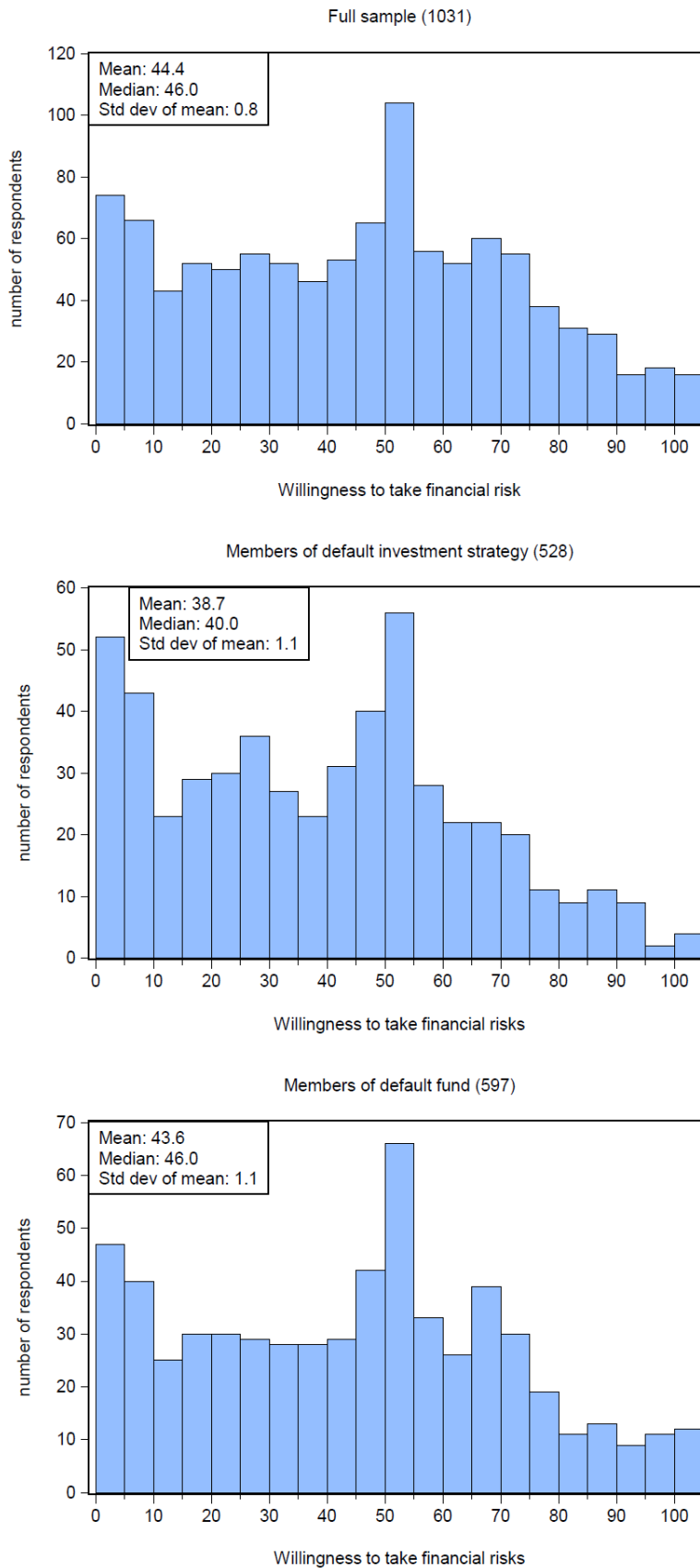
The decrease in risk tolerance with age is very weak in the survey data: the correlation between willingness to take financial risks and age both in the full sample and among investment fund defaulters of around -0.1 ( $p < 0.05$ ). In any case, comments from some executives indicate that risk preferences are viewed as secondary to the need to generate higher or longer lasting retirement income by earning the risk premium:

*"...in early years the predominant risk may be receiving insufficient investment returns, whereas capital preservation is much more important in the stages closer to retirement date."*

*"...you cannot afford to have anything other than 100% exposure to risk assets during your working life and for some period in your retirement because you will run out of money as you live to 80, 90 and 110 in the years ahead."*

Overall, plan executives appear to subsume risk preferences under the related factors of member age, investment time horizon, a perceived need to protect capital from negative returns in the years around retirement; and their own views of how best to reach an adequate replacement rate over a possibly long retirement. While some executives acknowledge that it is difficult to set default investment risk to match individual risk preferences (see Butt et al. 2015a), executives did not comment on the possibility that the *average* default member could have lower risk tolerance than the average member. And they did not say that default member risk tolerance *per se* was a guiding factor in investment allocations.

**Figure 3: Reported willingness to take financial risks (0-100 scale)**



## 4.2 Propensity to delegate

All participants in the survey, other than members of SMSFs, delegate the management of their savings to plan providers, who usually delegate to plan executives. Understanding what motivates delegation by members can shed light on reasons for defaulting.<sup>19</sup> We formulated a series of statements on tendency to delegate, adapted to the superannuation context from Aggarwal and Mazumdar (2007). Aggarwal and Mazumdar identify two *impediments* to decision delegation: a wish by principals to control the decision, and the cost to principals of foregoing the opportunity to learn and acquire skills for future decisions. We add time and money costs of active choices to this list of impediments. Aggarwal and Mazumdar also identify four factors *encouraging* delegation: perceived differences in skill between the principal and agent; a view by principals that an agent can customize the product or service better than an impersonal source (personal suitability of the product); the trustworthiness of an agent; and the accountability of an agent.

Defaulting members agree with statements favoring delegation more often than other members, but the extent of agreement varied between delegation factors. Table 4 reports the percentage of respondents in the total sample and among each default group who agreed when the statement is posed in a way that would encourage delegation. Most people said they do not want to relinquish control over their retirement savings; but find the products suitable, and view the agent (the plan provider) as trustworthy and accountable. Respondents in the default investment option emphasize more than others their own low skill and knowledge, while respondents in the default plan express more trust and belief that the system is well monitored. Time costs of active decision making are highly rated more often than money costs.

**Table 4: Agreement with statements promoting delegation (percentage of respondents)**

|  | <i>Full sample</i> | <i>Default fund</i> | <i>Default investment</i> |
|--|--------------------|---------------------|---------------------------|
| <b>Propensity to delegate</b>  | %                  | %                   | %                         |
| I do not want a lot of control over my super   | 42                 | 43                  | 53***                     |
| I have little skill and knowledge for making decisions about my super                    | 73                 | 77***               | 87***                     |
| It takes, or would take, a lot of time to make my own decisions about super              | 62                 | 66***               | 71***                     |
| It costs, or would cost, a lot of money to make my own decisions about super             | 33                 | 36***               | 34                        |
| The super fund recommended by my employer suits me                                       | 62                 | 87***               | 75***                     |
| Default investment options of superannuation funds suit me                               | 64                 | 71***               | 82***                     |
| I trust the super fund recommended by my employer to make decisions in my best interests | 67                 | 82***               | 78***                     |
| The super fund recommended by my employer is well monitored                              | 75                 | 84***               | 79***                     |
| The super fund recommended by my employer is accountable for its actions                 | 82                 | 89***               | 85***                     |

\*\*\*/\*\*/\* reflects significance at the 10%/5%/1% level for the difference in proportion of respondents of a certain propensity (e.g. “I do not want a lot of control over my super”) within the default group compared to the non-default group.

Notes: This table reports the percentage of respondents who agreed with each statement listed in column 1 for the full sample (n=1031), respondents who defaulted into the employer’s plan (n=597), and respondents who defaulted into the plan’s default investment strategy (n=528). Statements indicate willingness to delegate.

<sup>19</sup> Brown et al. (2015) study the related issue of decision making in the presence of decision conflict, assessing procrastination, vigilance, hypervigilance and buck passing. They associate procrastination with a higher probability of default. Individuals with a strong need for a definite answer (cognitive closure) are less likely to default.

The results in Table 4 are potentially at odds with comments made by some plan executives during the interviews, who characterize default members as *uninterested* in retirement savings:

*“For our members that are totally disengaged, they don’t want anything. The reality is, and we’ve polled them; they’re just not interested in superannuation.”*

*“[Our] membership is disengaged and despite our best efforts to engage with them, the purpose of our engagement is actually brand recognition.”*

A lack of interest is *not* the main reason for investment delegation according to the survey (although it did have some impact), and relinquishing control is not the main motivator for defaulting. Instead, default members emphasize suitability of the plan and trust and confidence in the regulation of the plan providers. Default investment members emphasize their own lack of skill, combined with suitability of the default investment option and trust. Some plan executives may be confusing disengagement with trust, which, when combined with a self-conscious lack of financial skill, underlies both a low level of active choice and a low level of direct interaction with the plan provider.

Trust did not figure prominently in interviews with executives: it was mentioned by only six out of the 20 participants. One executive said that members trusted their particular plan, but did not trust the superannuation industry (or the financial services sector generally).

*“Trust is huge. And look, our research ... suggests that our members trust us. They don’t necessarily trust super, they don’t trust super as an industry...”*

*“they’re putting their trust in us to look after their retirement savings...”*

Then again, the trust of members is a delicate area for plan executives. Those who invest in developing trust are likely to enjoy a long-term relationship with members and benefit from a buffer against poor outcomes where members give trusted managers the benefit of the doubt (Deetlefs et al. 2015). However members who rest on “blind faith” in a manager can become vulnerable to malfeasance (Singh and Sirdeshmukh 2000).

Some executives also connected trusting delegation with a lack of knowledge among members:

*“members say, ‘I don’t know what to do, just tell us.’ That’s the overarching thing, ‘I don’t know, just tell us.’”*

*“they’re relying on the Trustee, it would seem, since they’ve defaulted, to make an appropriate decision for them.”*

The large knowledge gap apparently gives a lot of members no option but to delegate superannuation decisions. Whether the plan that looks after their savings then goes on to build defaulting behaviors towards trust will partly depend on whether the executives view the delegation as a trust relationship or a lack of interest. Our interviews give some support to the notion that the majority view of executives is that defaulting primarily arises from lack of interest, rather than trust.

We also collected ranking information, to help us understand the relative importance of each of the delegation factors to respondents. Table 5 reports results for the ranking analysis for each statement appearing in Table 1. Panel A reports rankings for respondents who agree with the high propensity to delegate version of the statement. In this case, low skill, suitability of the default and trust in the default are high in importance. Panel B reports rankings where the respondent agrees with the low propensity to delegate version of the statement. For the respondents who have low propensity to delegate, wanting control is extremely important, and having plenty of skill and knowledge is also high in importance. We return to these delegation factors in multivariate econometric modeling below.

**Table 5: Conditional rankings of delegation factors**

| <b>Panel A: High Propensity to Delegate</b> |          |          |          |          |          |          |          |          |          |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <b>Factor/Ranking</b>                       | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> | <b>7</b> | <b>8</b> | <b>9</b> |
| Don't want control over super               | 0.083    | 0.055    | 0.060    | 0.046    | 0.081    | 0.136    | 0.111    | 0.124    | 0.304    |
| Little skill and knowledge                  | 0.182    | 0.147    | 0.098    | 0.071    | 0.063    | 0.063    | 0.119    | 0.135    | 0.123    |
| Takes a lot of time                         | 0.078    | 0.143    | 0.132    | 0.074    | 0.058    | 0.093    | 0.116    | 0.148    | 0.159    |
| Costs a lot of money                        | 0.078    | 0.143    | 0.146    | 0.152    | 0.081    | 0.096    | 0.116    | 0.090    | 0.099    |
| Default fund is suitable                    | 0.133    | 0.134    | 0.142    | 0.106    | 0.086    | 0.103    | 0.080    | 0.119    | 0.097    |
| Default investment is suitable              | 0.052    | 0.099    | 0.112    | 0.124    | 0.140    | 0.115    | 0.138    | 0.115    | 0.105    |
| I trust default fund                        | 0.147    | 0.126    | 0.147    | 0.167    | 0.121    | 0.084    | 0.097    | 0.070    | 0.041    |
| Default fund is well monitored              | 0.059    | 0.089    | 0.119    | 0.155    | 0.170    | 0.159    | 0.103    | 0.070    | 0.077    |
| Default fund is accountable                 | 0.068    | 0.073    | 0.099    | 0.164    | 0.240    | 0.142    | 0.092    | 0.061    | 0.062    |

| <b>Panel B: Low Propensity to Delegate</b> |          |          |          |          |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <b>Factor/Ranking</b>                      | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> | <b>7</b> | <b>8</b> | <b>9</b> |
| Do want control over super                 | 0.472    | 0.121    | 0.075    | 0.067    | 0.050    | 0.064    | 0.047    | 0.042    | 0.062    |
| Plenty of skill and knowledge              | 0.131    | 0.322    | 0.159    | 0.099    | 0.071    | 0.046    | 0.053    | 0.071    | 0.049    |
| Doesn't take a lot of time                 | 0.051    | 0.114    | 0.140    | 0.117    | 0.051    | 0.102    | 0.109    | 0.145    | 0.173    |
| Doesn't cost a lot of money                | 0.070    | 0.129    | 0.135    | 0.105    | 0.062    | 0.135    | 0.135    | 0.128    | 0.101    |
| Default fund is not suitable               | 0.074    | 0.087    | 0.087    | 0.069    | 0.102    | 0.115    | 0.125    | 0.189    | 0.151    |
| Default investment is not suitable         | 0.043    | 0.067    | 0.059    | 0.091    | 0.113    | 0.134    | 0.161    | 0.175    | 0.156    |
| I don't trust default fund                 | 0.041    | 0.052    | 0.093    | 0.120    | 0.120    | 0.108    | 0.160    | 0.190    | 0.117    |
| Default fund is not well monitored         | 0.020    | 0.043    | 0.078    | 0.102    | 0.133    | 0.184    | 0.165    | 0.129    | 0.145    |
| Default fund is not accountable            | 0.042    | 0.021    | 0.058    | 0.115    | 0.267    | 0.147    | 0.152    | 0.099    | 0.099    |

*Notes:* This table shows proportions of respondents who ranked the delegation factor one through to nine in importance to them in their decisions about superannuation, conditional on initially agreeing with the statement as stated in the far left column. Statements in Panel A indicate high propensity to delegate, and statements in Panel B indicate low propensity to delegate. For example, respondents who agreed that they have “little skill and knowledge” for superannuation decisions, (Panel A, row 2), 18.2% subsequently ranked this as best matching their thinking about superannuation (column 1), while 12.3% ranked it as least matching their thinking (column 9). Assuming that individuals choose randomly, the expected proportion in each cell is equal to  $1/9 = 0.111$ . On an individual cell basis, cells with a proportion higher than 0.128/0.132/0.139 or lower than 0.096/0.093/0.088 reflect significance at the 10%/5%/1% level compared to random choice.

### 4.3 Goals for retirement savings

The legal responsibility of plan providers is to provide benefits to members on retirement.<sup>20</sup> However, the type of benefits and exactly how that goal is to be achieved is not prescribed, and need not be the same for all members. For executives of DC plans, providing retirement benefits could be framed as just maximizing account balances at retirement, or could extend to provision of retirement income streams. Alternatively, executives with short-term competitive goals or personal career ambitions might be aiming for high peer-relative returns, avoidance of losses or low fees to attract short-term business. All of these complementary and competing concerns came up in our interviews with plan executives.

In order to understand what members think their plan executives should be aiming for, we constructed a set of statements about retirement savings goals, and asked respondents to agree or disagree with them. These statements cover the short-term risk-return tradeoff, security of retirement wealth, age-phasing (life-cycle strategies), comparisons with other plans (funds), and fees (Panel B in Table 1). Table 6 reports the percentages of respondents in the full member sample and default member samples who agree with the “conservative” framing of each of these statements. The majority of survey respondents agree with the more conservative framing of the statements. The exceptions were with respect to “comparing funds rarely”, where the majority thought regular comparisons are better; and the risk-return trade-off in statement 1, which divided the sample almost evenly. Clear majorities are prepared to trade higher certainty over basic wealth for lower returns; want decreasing risk as they got older; and lower fees in general. The conservatism and lower risk tolerance of the default investment strategy members is also evident here, with significantly more investment defaulters wanting to avoid short-term losses and ensure basic retirement wealth.

**Table 6: Agreement with statements on goals for retirement savings (% of respondents)**

|   | <i>Full sample</i> | <i>Default fund</i> | <i>Default investment</i> |
|---|--------------------|---------------------|---------------------------|
| <b>Plan goals</b>   | <b>%</b>           | <b>%</b>            | <b>%</b>                  |
| I will accept lower average returns to avoid losses in the short term                         | 53                 | 53                  | 59***                     |
| I want to be very certain of a basic amount of retirement wealth                              | 69                 | 70                  | 74***                     |
| I want to compare my fund with similar funds rarely, if ever                                  | 43                 | 46***               | 46**                      |
| I want my super investment strategy to be less risky as I age, even if it means lower returns | 67                 | 66                  | 67                        |
| I want my fund to charge lower fees than other funds  | 77                 | 77                  | 80**                      |

\*\*\*/\*\*/\* reflects significance at the 10%/5%/1% level for the difference in proportion of respondents of certain goals (e.g. “I will accept lower average returns to avoid losses in the short term”) within the default group compared to the non-default group.

Notes: This table shows percentage who agreed with each statement listed in column 1 for the full sample (n=1,031), respondents who defaulted into the employer’s plan (n=597), and respondents who defaulted into the plan’s default investment strategy (n=528). Statements relate to plan goals.

<sup>20</sup> Section 62 of Superannuation Industry (Supervision) Act 1993, (Cth).

Table 7 presents ranking analysis for the goals for retirement savings presented in Table 1. Respondents who initially agree with the conservative forms of the statements give high weight to safe investment outcomes, and consider comparison between plans relatively unimportant (they want to do this rarely anyway). Fees considerations are ranked about the middle in importance. Those who initially agree with the aggressive forms of the statements rank high returns as by far the most important and high wealth as the next most important. They also give low priority to plans comparisons (even though they want to do this regularly). Fees again come in about the middle.

**Table 7: Conditional rankings of retirement savings goals**

| <b>Panel A: Conservative Response</b>                     |          |          |          |          |          |
|---|----------|----------|----------|----------|----------|
| <b>Factor (conservative)/Ranking</b>                      | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| Lower average returns and avoiding losses                 | 0.273    | 0.168    | 0.242    | 0.196    | 0.122    |
| Certainty of basic amount of retirement wealth            | 0.395    | 0.295    | 0.133    | 0.099    | 0.078    |
| Rarely compare my fund with similar funds                 | 0.029    | 0.050    | 0.077    | 0.240    | 0.604    |
| Reduce risk of investment as I age                        | 0.110    | 0.301    | 0.277    | 0.193    | 0.120    |
| Want my fund to charge lower fees than other funds        | 0.192    | 0.202    | 0.282    | 0.194    | 0.130    |
| <b>Panel B: Aggressive Response</b>                       |          |          |          |          |          |
| <b>Factor (aggressive)/Ranking</b>                        | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| Higher average returns and accept losses                  | 0.470    | 0.186    | 0.143    | 0.112    | 0.088    |
| Uncertainty for better chance of high retirement wealth   | 0.161    | 0.313    | 0.245    | 0.170    | 0.111    |
| Regularly compare my fund with similar funds              | 0.053    | 0.081    | 0.129    | 0.290    | 0.447    |
| Maintain risk of investment as I age                      | 0.074    | 0.175    | 0.205    | 0.341    | 0.205    |
| I will pay higher fees than other funds for better return | 0.099    | 0.172    | 0.262    | 0.275    | 0.193    |

Assuming that individuals choose randomly, the expected proportion in each cell is equal to  $1/5 = 0.200$ . On an individual cell basis, cells with a proportion higher than 0.221/0.226/0.234 or lower than 0.180/0.177/0.170 reflect significance at the 10%/5%/1% level compared to random choice.

*Notes:* This table shows proportions of respondents who ranked the delegation factor first through to fifth in importance to them in their decisions about superannuation, conditional on agreeing with the statement as stated in the far left column. Statements in Panel A indicate conservative investment goals, while statements in Panel B indicate aggressive investment goals. For example, of respondents who agreed that they have “lower average returns to avoid losses” for superannuation decisions, (Panel A, row 1), 27.3% ranked this as best matching their thinking about superannuation (column 1), while 12.2% ranked it as least matching their thinking (column 5).

The majority of members, particularly those in the default investment strategy, are interested in ensuring a basic amount of retirement wealth, consider low fees to be important, and view plan (fund) comparisons as a low priority. Analysis of interview responses suggest that plan executives describe themselves as primarily focused on generating a retirement outcome for members. This was most often interpreted as related to income in retirement, with some acknowledgement the desire of some members to withdraw lump sums at retirement (Butt et al. 2015a, p. 16). However there was little agreement on what this income goal meant for investment strategy, being used to justify both SAA balanced strategies with fixed proportional allocations and life-cycle glide paths. Executives’ justifications of their investment strategies differed across plan providers. Executives from plans offering life-cycle defaults said that reducing risk as age increased



was motivated by their view that members should have lower risk exposure as they age.<sup>21</sup> Further, age was an easily observable characteristic of members, whereas personal risk preferences and background risk was not. Others were more specific about aiming for a particular replacement rate related to member incomes:

*“So we made an assumption, which is where income becomes important, we made an assumption that adequacy was 70% replacement value .... We made some heroic assumptions on what wage growth was going to do and what inflation was going to do... And then we modelled backwards what risk did they need to take to get them to a 70% adequacy.”*

Along the same lines, some executives of plans with many low-income, low balance members, explicitly recognize that most members would be eligible for the asset and income tested public Age Pension in retirement. Under current regulations, the Age Pension pays an indexed annuity stream equal to 28% of male average weekly earnings to retirees with low asset accumulations, declining slowly as personal financial wealth increases. According to some executives, public pension entitlements justify the choice of a higher-risk balanced investment strategy for their superannuation savings, rather than a life-cycle glide path:

*“We just fundamentally disagree with how early some of the de-risking occurs, but that is actually having regard to our member demographic. It’s a specific decision for us based on the fact that we have younger members, but also the fact that our members have lower account balances and their reliance on the Age Pension, which in our view is a government-guaranteed, longevity-insured, risk-free asset.... And it’s (the Age Pension) an inflation-linked bond. ... [I]t’s worth to a single person \$400,000-something to a couple, \$700,000, \$800,000. If you’re comparing that to \$100,000 superannuation balance, these people are fundamentally not running a very risky portfolio in terms of present value”.*

While these arguments have some traction for relatively homogeneous groups of default members, they are much weaker when membership groups are large and diffuse. This also raises questions about the optimal number of plan providers in the industry, and the trade-off between the benefits of financial scale against the costs of defaults that are not tailored to homogeneous groups of members.<sup>22</sup>

Plan executives are more divided on the importance of comparing well with peers. While the majority of executives consider peer-relative returns to be of little consequence for the members themselves, about half the executives mention relative performance as a (mainly secondary, but sometimes primary) driver of investment strategy in the default (Butt et al. 2015a, pp. 13-14, 17). Other executives note that life-cycle investment strategies divert attention away from short-term performance and make peer comparisons more difficult. Many executives said the MySuper regulations made them more attentive to fees, with some executives increasing the proportion of (lower cost) passive investment mandates and decreasing exposure to (high cost) alternative assets within their default strategy. Other executives noted an implicit 1% p.a. benchmark for fees as the competitive standard; while still others declare that they did not want to be “positioned” as a “low cost offering”. Executives recognize that the new regulations will make it easier

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<sup>21</sup> Reasons given by lifecycle providers for de-risking included references to aspects such as mitigation of sequencing risk, or the increasing importance of the investment in superannuation and diminishing human capital as a member approaches retirement.

<sup>22</sup> At present there are several hundred plans operating in the superannuation sector, but the sector has undergone and is continuing to undergo rapid consolidation. MySuper default funds were offered by 120 providers in early-2014 (see Chant et al. 2014); and there was 117 authorized MySuper products at the time of writing.

for members and other stakeholders to compare fees in different plans; and not being at either the high or low extreme of fees seems to be the goal of most.

While there are some areas of agreement between interview responses and the surveyed views of members, such as concern about retirement wealth, many executives give more weight to comparison with peers than do members, and limit the importance of member risk preferences to life-cycle investing.

#### 4.4 Investment practices

Active and passive management, market timing, diversification, local preference and socially responsible investment (SRI) practices are all given some attention in the portfolios of superannuation funds. We asked respondents whether they were aware of these strategies, and to what extent they supported them, given that they understood them. A strong commitment to home bias or SRI, for example, could motivate a member to opt out of the default and choose a portfolio that had those features.

Table 8 (see Panel A) shows the percentage of respondents who report that they are aware of and understood the different investment practices. Consistent with earlier results, members invested in the default investment option are less likely to be aware of such practices. For those who are aware, the ratings in favor or against these practices (see Panel B) are not very different between sample subsets. However, the averages conceal some focal points in the responses: many people chose the extremes of the rating scales, as well as massing at the middle. The distribution of ratings on market timing and active investment are heavily skewed towards favoring the practice, according with the pervasive use of dynamic asset allocation and the prevalence of active management in our plan provider interview sample (as reported in Butt et al. 2014). The distributions on diversification, local preference and SRI were more evenly spread across the scale, with slight favor for SRI and local preference.

**Table 8: Awareness of investment practices**

|  | <i>Full sample</i> | <i>Default plan</i> | <i>Default investment</i> |
|--|--------------------|---------------------|---------------------------|
| <b>Panel A: Percentage aware of, and understand, the practice</b>        |                    |                     |                           |
|  | %                  | %                   | %                         |
| Market timing  | 34                 | 31**                | 25***                     |
| Active investing   | 31                 | 28*                 | 21***                     |
| Diversification  | 60                 | 56***               | 49***                     |
| Local preference   | 44                 | 41**                | 31***                     |
| Socially responsible investing   | 33                 | 30**                | 24***                     |
| <b>Panel B: Average rating out of 100 (conditional on awareness)</b>     |                    |                     |                           |
| Market timing (0 = no market timing; 100 = full market timing)           | 64                 | 64                  | 63                        |
| Active investing (0 = no active investing; 100 = fully active investing) | 63                 | 63                  | 59*                       |
| Diversification (0 = full diversification; 100 = concentration)          | 48                 | 45**                | 44**                      |
| Local preference (0 = high local bias; 100 = no local bias)              | 46                 | 46                  | 46                        |
| Socially responsible investing (0 = high SRI; 100 = unconcerned)         | 45                 | 45                  | 39***                     |

\*\*\*/\*\*/\* reflects significance at the 10%/5%/1% level for the difference in proportion of respondents of knowing certain investment practices (e.g. “Market timing”), or the difference in average rating, within the default group compared to the non-default group.

*Notes:* This table shows percentage of respondents who said that they were aware of and understood the investment practice in the far right column (Panel A), and the average rating out of 100 assigned to the practice according to the sliders (as shown in Figure 1). Results are reported for full sample respondents (n=1,031), respondents who defaulted into the employer’s plan (n=597), and respondents who defaulted into the plan’s default investment strategy (n=528).

This wide range of information on members allows us to model the degree of active choice that they are using in deciding whether to opt out of plans or investment strategies. Next we use ordered logit modelling to estimate the relation between member characteristics and choices.

#### 4.5 Multivariate modeling

The personal characteristics and attitudes of members are likely to predict the level of active choice or defaulting at the plan and investment option nodes. We use ordered logit to estimate the probability of four different levels of active choice. At the plan choice level we define the variable “Plan Choice”; while at the investment choice level we define a variable “Invest Choice”. Both are defined over four respondent categories as follows:

*Respondent categories for ‘Plan Choice’:*

- (i) Defaulted into employer’s plan, or answered “don’t know” to the question
- (ii) Already in their employer’s plan when they joined the employer
- (iii) Deliberately defaulted into the employer’s plan after consideration
- (iv) Chose a different plan, opting out of the default.

*Respondent categories for ‘Invest Choice’:*

- (i) Passively defaulted into the investment strategy, or answered “don’t know”
- (ii) Deliberate defaulters
- (iii) Opted out of the default
- (iv) Members of self-managed superannuation funds (investment decisions are the direct responsibility of member-trustees).

Explanatory variables consist of: binary variables indicating the member’s agreement or disagreement with statements on each of the delegation factors and retirement savings goals; binary variables indicating awareness of each of the investment styles; a continuous variable (0 - 100) showing the agreement rating of members who indicated awareness of the styles; and a set of demographic, financial literacy and risk attitude measures. Table 9 (see page 28) shows the definitions of the ordered dependent (choice) variables and explanatory variables.

Ordered logit models compute ordered log odds of the underlying latent choice variable falling between two cut points. We define an unobserved latent variable  $Y^*$  measuring the degree of active decision making used by respondents at some choice node where  $Y^* = X'\beta + u$ , and  $X$  is a vector of explanatory variables and  $u$  is a standard logistic random variable. The observed variable  $Y$  takes the values 1, 2, 3 or 4 when  $Y^*$  crosses some threshold  $k_j$ , so that:

$$\begin{aligned} Y_i &= 1 \text{ if } Y^* < k_1 \\ Y_i &= 2 \text{ if } k_1 < Y^* < k_2 \\ Y_i &= 3 \text{ if } k_2 < Y^* < k_3 \\ Y_i &= 4 \text{ if } k_3 < Y^* . \end{aligned}$$

When fitting this model to the four-level responses, the data is replicated three times. The first replication is used to estimate the log odds of being in up to category 1; the second replication is used to estimate the log odds of being in up to category 2; and the third replication used to estimate the log odds of being in up to category 3. Three separate constants are estimated for the three replications to give the cut off points  $k_j$ , with the other coefficients ( $\beta$ s) held constant. So then:

$$\Pr(Y > j) = \frac{e^{X'\beta - k_j}}{1 + e^{X'\beta - k_j}}, j = 1, 2, \dots 4.$$

A synthetic individual, defined in Table 10 (see page 29), is created in order to illustrate numerically the effect of explanatory variables on probabilities of choice categories. Table 11 reports the exponential of the predictors from the ordered logit regression of the four choice categories for *Plan Choice*, as well as the effect of changes in the explanatory variables for the synthetic individual on the probabilities of the four choice categories. To help interpretation, we set the dependent variable to increase as choices become more active, and we define explanatory variables so that higher values would make active choice more likely (Table 9). For example, *Skill* is a binary variable taking the value one when the respondent agrees with the statement “I have plenty of skill and knowledge for making decisions about my super”, and zero when respondents do not agree that they have plenty of skill and knowledge, in line with the idea that subjectively higher skill is likely to lead to active choices. When the exponential of the predictors associated with an explanatory variable are less than one, this means that an increase in the explanatory variable makes active choice less likely, and when the exponential of the predictors are greater than one an increase in the explanatory variable makes active choice more likely.<sup>23</sup>

Estimation results in Table 11 (see page 30) indicate that respondents who rate themselves as having skill, who regard the time costs of choice as low, who regard the employer’s default plan as unsuitable, who wish to compare funds (plans), and who have higher financial knowledge, are significantly more likely to make an active plan choice. These variables all have exponentials of the predictors above one. For example, the effect of a one unit increase *Skill*, given that the other variables hold the values of the synthetic individual (Table 10), reduces the probability of a passive default (category 1) from 0.600 to 0.504. The largest increase in the possibility of an active plan choice occurs when respondents agree that the employer’s default plan is not suitable, reducing the probability of a passive default (category 1) from 0.600 to 0.094. By contrast, respondents who think that high fees are tolerable are less like to make an active choice, increasing the probability of a passive default (category 1) from 0.600 to 0.673.

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<sup>23</sup> Alternative approaches to structuring the dependent variable such as multinomial and binomial were tested. In addition, alternative structures of the predictors such as using ranked delegation and retirement goals, and categorising demographic variables, were also tested. None of these were found to not add additional interpretive power to the results. The results from these alternative approaches are available from the authors.

**Table 9: Variable definitions**

**Explanatory variable definitions**

|   |
|---|
| <p><i>Control</i> = 1 if “I want a lot of control over my super” true, 0 otherwise.</p> <p><i>Skill</i> = 1 if “I have plenty of skill and knowledge for making decisions about my super” true, 0 otherwise</p> <p><i>Time</i> = 1 if “It does not take, or would not take, a lot of time to make my own decisions about super” true, 0 otherwise</p> <p><i>Cost</i> = 1 if “It does not cost, or would not cost, a lot of money to make my own decisions about super” true, 0 otherwise</p> <p><i>Plan not Suitable</i> = 1 if “The super fund recommended by my employer does not suit me” true, 0 otherwise</p> <p><i>Invest not Suitable</i> = 1 if “Default investment options of superannuation funds do not suit me” true, 0 otherwise</p> <p><i>No trust</i> = 1 if “I do not trust the super fund recommended by my employer to make decisions in my best interests” true, 0 otherwise</p> <p><i>Not monitored</i> = 1 if “The super fund recommended by my employer is not well monitored” true, 0 otherwise</p> <p><i>Not accountable</i> = 1 if “The super fund recommended by my employer is not accountable for its actions” true, 0 otherwise.</p>   |
| <p><i>High returns</i> = 1 if “I want high average returns and will accept losses in the short term” true, 0 otherwise</p> <p><i>High wealth</i> = 1 if “I will accept uncertainty for a better chance of high retirement wealth” true, 0 otherwise</p> <p><i>Compare</i> = 1 if “I want to compare my fund with similar funds regularly” true, 0 otherwise</p> <p><i>Age Risk</i> = 1 if “I want my super investment strategy to stay much the same as I age” true, 0 otherwise</p> <p><i>High fees</i> = 1 if “I will pay higher fees than other funds, if my fund is better than average” true, 0 otherwise</p>  |
| <p><i>Timing aware</i> = 1 if respondent aware of and understood market timing, 0 otherwise</p> <p><i>Active aware</i> = 1 if respondent aware of and understood active investment, 0 otherwise</p> <p><i>Diverse aware</i> = 1 if respondent aware of and understood diversification, 0 otherwise</p> <p><i>Local aware</i> = 1 if respondent aware of and understood local preference, 0 otherwise</p> <p><i>SRI aware</i> = 1 if respondent aware of and understood socially responsible investment, 0 otherwise</p> <p><i>Timing view</i> = slider score (0-100) if Timing aware = 1; =50 if Timing aware = 0</p> <p><i>Active view</i> = slider score (0-100) if Active aware = 1; =50 if Active aware = 0</p> <p><i>Diverse view</i> = slider score (0-100) if Diverse aware = 1; =50 if Diverse aware = 0</p> <p><i>Local view</i> = slider score (0-100) if Local aware = 1; =50 if Local aware = 0</p> <p><i>SRI view</i> = slider score (0-100) if SRI aware = 1; =50 if SRI aware = 0</p>  |
| <p><i>Age</i>: treated as continuous variable where age (in years) is the middle age of the category (e.g. <i>Age</i> = 21.5 where the response is “18-24 years”; the categories (in years) are 18-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74; those who chose “75 years and over” are set to 77.5)</p> <p><i>Male</i> = 1 where gender is male, 0 for female</p> <p><i>Additional Conts</i> = 1 where respondent makes additional voluntary savings contributions, 0 otherwise</p> <p><i>Balance</i>: total account balance (\$’00,000), which is treated as continuous variable where balance is the middle balance of the category (e.g. <i>Balance</i> = 0.125 where the response is “\$5,001 to \$20,000”; categories (\$’000) are 0-0.05, 0.05-0.2, 0.2-0.5, 0.5-1, 1-2, 2-5, 5-10; those who chose “More than \$1,000,000” are set to 15)</p> <p><i>Knowledge</i>: proportion of correct answers to financial knowledge questions (9)</p> <p><i>Partner</i> = 1 if married or in de facto relationship, 0 otherwise</p> <p><i>Decision maker</i> = 1 if involved in household financial decisions, 0 otherwise</p> <p><i>Attention</i> = 1 if passed attention (instructional manipulation check), 0 otherwise</p> <p><i>Education12</i> = 1 where respondent completed Year 12 (or equivalent), 0 otherwise</p> <p><i>EducationVoc</i> = 1 where respondent’s maximum post-school educational attainment is vocational education at TAFE or equivalent, 0 otherwise</p> <p><i>EducationUG</i> = 1 where respondent has completed a Bachelor degree at a university or equivalent, 0 otherwise</p> <p><i>EducationPG</i> = 1 where respondent has completed a post-graduate degree at a university or equivalent, 0 otherwise</p> <p><i>Personal Income</i>: treated as continuous variable where weekly gross personal income (\$’00) is the middle income of the category (e.g. <i>Personal Income</i> = 2.5 where the response is \$200-\$299; categories (\$) are 0-2, 2-3, 3-4, 4-6, 6-8, 8-10, 10-12.5, 12.5-15, 15-20; those who chose “Negative income” or “Nil income” are set to 0 whilst those who chose “\$2,000 or more” are set to \$2.5)</p> <p><i>Family Income</i>: treated as continuous variable where weekly gross family income (\$’00) is the middle income of the category (e.g. <i>Family Income</i> = 3.5 where the response is \$300-\$399; categories (\$) are 3-4, 4-6, 6-8, 8-10, 10-12.5, 12.5-15, 15-20, 20-25, 25-30, 30-35, 35-40, 40-50; those who chose “Negative income” or “Nil income” are set to 0 whilst those who chose “\$5,000 or more” are set to 60)</p> <p><i>Risk Appetite</i>: continuous (0-100) variable where 0 is total unwillingness to take financial risk and 100 is “fully prepared” to take financial risks</p> |

Table 9 (continued)

**Dependent variable definitions**

*Plan Choice*: categorical variable where 1= default into employer’s plan or “don’t know”, 2= already in employers plan when joining employer, 3= deliberate default into employer’s plan, 4= chose a different plan

*Invest Choice*: categorical variable where 1= default into investment or “don’t know”, 2= deliberate default, 3= chose a different investment, 4= in Self-managed superannuation fund.

**Table 10: Synthetic individual assumptions**

| <b>Predictor</b>               | <b>Base Value</b> | <b>Alternative Value</b> |
|--------------------------------|-------------------|--------------------------|
| <i>Control</i>                 | 0                 | 1                        |
| <i>Skill</i>                   | 0                 | 1                        |
| <i>Time</i>                    | 0                 | 1                        |
| <i>Cost</i>                    | 0                 | 1                        |
| <i>Plan not Suitable</i>       | 0                 | 1                        |
| <i>Investment not Suitable</i> | 0                 | 1                        |
| <i>No trust</i>                | 0                 | 1                        |
| <i>Not monitored</i>           | 0                 | 1                        |
| <i>Not accountable</i>         | 0                 | 1                        |
| <i>High returns</i>            | 0                 | 1                        |
| <i>High wealth</i>             | 0                 | 1                        |
| <i>Compare</i>                 | 0                 | 1                        |
| <i>Age Risk</i>                | 0                 | 1                        |
| <i>High fees</i>               | 0                 | 1                        |
| <i>Timing aware</i>            | 0                 | 1                        |
| <i>Active aware</i>            | 0                 | 1                        |
| <i>Diverse aware</i>           | 0                 | 1                        |
| <i>Local aware</i>             | 0                 | 1                        |
| <i>SRI aware</i>               | 0                 | 1                        |
| <i>Timing view</i>             | 50                | 60*                      |
| <i>Active view</i>             | 50                | 60*                      |
| <i>Diverse view</i>            | 50                | 60*                      |
| <i>Local view</i>              | 50                | 60*                      |
| <i>SRI view</i>                | 50                | 60*                      |
| <i>Age</i>                     | 45                | 50                       |
| <i>Male</i>                    | 0                 | 1                        |
| <i>Additional Confs</i>        | 0                 | 1                        |
| <i>Balance</i>                 | 15                | 25                       |
| <i>Knowledge</i>               | 5/9               | 6/9                      |
| <i>Partner</i>                 | 0                 | 1                        |
| <i>Decision maker</i>          | 0                 | 1                        |
| <i>Attention</i>               | 0                 | 1                        |
| <i>Education12</i>             | 0                 | 1                        |
| <i>EducationVoc</i>            | 0                 | 1                        |
| <i>EducationUG</i>             | 0                 | 1^                       |
| <i>EducationPG</i>             | 0                 | 1+                       |
| <i>Personal Income</i>         | 10                | 11                       |
| <i>Family Income</i>           | 20                | 22                       |
| <i>Risk Appetite</i>           | 50                | 60                       |

\* The equivalent “aware” predictor is also set to 1

^ Education12 is also set to 1

+ Education12 and EducationUG are also set to 1

**Table 11: Ordered logit model of plan level choice: Estimated predictors and probabilities**

|                                | <i>Exp(β)</i> | <i>p-value</i> | <i>Prob(1)</i> | <i>Prob(2)</i> | <i>Prob(3)</i> | <i>Prob(4)</i> |
|--------------------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| <i>Base</i>                    |               |                | 0.600          | 0.018          | 0.181          | 0.200          |
| <i>Control</i>                 | 0.813         | 0.176          | 0.649          | 0.017          | 0.165          | 0.169          |
| <i>Skill</i>                   | 1.480**       | 0.033          | 0.504          | 0.019          | 0.207          | 0.270          |
| <i>Time</i>                    | 1.313*        | 0.074          | 0.534          | 0.019          | 0.200          | 0.247          |
| <i>Cost</i>                    | 0.979         | 0.891          | 0.605          | 0.018          | 0.180          | 0.196          |
| <i>Plan not Suitable</i>       | 14.548***     | 0.000          | 0.094          | 0.007          | 0.115          | 0.784          |
| <i>Investment not Suitable</i> | 0.936         | 0.687          | 0.616          | 0.018          | 0.176          | 0.189          |
| <i>No trust</i>                | 1.315         | 0.186          | 0.533          | 0.019          | 0.200          | 0.247          |
| <i>Not monitored</i>           | 0.789         | 0.287          | 0.656          | 0.017          | 0.163          | 0.165          |
| <i>Not accountable</i>         | 0.820         | 0.410          | 0.647          | 0.017          | 0.166          | 0.170          |
| <i>High returns</i>            | 0.973         | 0.864          | 0.607          | 0.018          | 0.179          | 0.195          |
| <i>High wealth</i>             | 0.902         | 0.553          | 0.625          | 0.018          | 0.173          | 0.184          |
| <i>Compare</i>                 | 1.383**       | 0.023          | 0.521          | 0.019          | 0.203          | 0.257          |
| <i>Age Risk</i>                | 1.063         | 0.679          | 0.586          | 0.019          | 0.186          | 0.210          |
| <i>High Fees</i>               | 0.731*        | 0.066          | 0.673          | 0.017          | 0.156          | 0.154          |
| <i>Timing know</i>             | 1.075         | 0.703          | 0.583          | 0.019          | 0.187          | 0.212          |
| <i>Active know</i>             | 0.914         | 0.629          | 0.622          | 0.018          | 0.174          | 0.186          |
| <i>Diverse know</i>            | 1.054         | 0.758          | 0.588          | 0.019          | 0.185          | 0.208          |
| <i>Local know</i>              | 0.921         | 0.632          | 0.620          | 0.018          | 0.175          | 0.187          |
| <i>SRI know</i>                | 1.255         | 0.222          | 0.545          | 0.019          | 0.197          | 0.239          |
| <i>Timing view</i>             | 0.992         | 0.131          | 0.603          | 0.018          | 0.181          | 0.198          |
| <i>Active view</i>             | 1.002         | 0.765          | 0.618          | 0.018          | 0.176          | 0.188          |
| <i>Diverse view</i>            | 1.005         | 0.118          | 0.576          | 0.019          | 0.189          | 0.217          |
| <i>Local view</i>              | 0.996         | 0.281          | 0.630          | 0.018          | 0.172          | 0.181          |
| <i>SRI view</i>                | 1.000         | 0.947          | 0.546          | 0.019          | 0.197          | 0.238          |
| <i>Age</i>                     | 1.010         | 0.113          | 0.589          | 0.019          | 0.185          | 0.208          |
| <i>Male</i>                    | 0.918         | 0.571          | 0.621          | 0.018          | 0.175          | 0.186          |
| <i>Additional Concs</i>        | 1.133         | 0.406          | 0.570          | 0.019          | 0.191          | 0.220          |
| <i>Balance</i>                 | 1.009         | 0.826          | 0.598          | 0.018          | 0.182          | 0.201          |
| <i>Knowledge</i>               | 2.205***      | 0.009          | 0.579          | 0.019          | 0.188          | 0.214          |
| <i>Partner</i>                 | 0.997         | 0.985          | 0.601          | 0.018          | 0.181          | 0.199          |
| <i>Decision maker</i>          | 0.935         | 0.821          | 0.616          | 0.018          | 0.176          | 0.189          |
| <i>Attention</i>               | 1.119         | 0.473          | 0.573          | 0.019          | 0.190          | 0.218          |
| <i>Education12</i>             | 0.984         | 0.929          | 0.604          | 0.018          | 0.180          | 0.197          |
| <i>EducationVoc</i>            | 1.042         | 0.839          | 0.590          | 0.019          | 0.185          | 0.206          |
| <i>EducationUG</i>             | 0.826         | 0.414          | 0.649          | 0.017          | 0.165          | 0.169          |
| <i>EducationPG</i>             | 0.744         | 0.169          | 0.713          | 0.016          | 0.140          | 0.131          |
| <i>Personal Income</i>         | 0.998         | 0.911          | 0.601          | 0.018          | 0.181          | 0.200          |
| <i>Family Income</i>           | 0.999         | 0.848          | 0.601          | 0.018          | 0.181          | 0.199          |
| <i>Risk Appetite</i>           | 0.998         | 0.491          | 0.608          | 0.018          | 0.179          | 0.195          |

\*\*\*/\*\*/\* reflects significance at the 10%/5%/1% level.

*Notes:* This table reports the exponential of the  $\beta$ 's (a value close to 1 has no impact on the model) from estimation of ordered logit model of plan level (fund) choice. *Plan Choice* is a categorical variable where 1= default into employer's plan or "don't know", 2= already in employers plan when joining employer, 3= deliberate default into employer's plan, 4= chose a different plan from employer's plan. Probabilities (Prob) represent the probability of an individual making each type of plan choice, with the predictors taking the base value from Table 10 in the first (base) row. Other rows show the effect of adjusting one predictor on the probabilities (see Table 10).

**Table 12: Ordered logit model of investment option choice: Estimated predictors and probabilities**

|                                | <i>Exp(β)</i> | <i>p-value</i> | <i>Prob(1)</i> | <i>Prob(2)</i> | <i>Prob(3)</i> | <i>Prob(4)</i> |
|--------------------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| <i>Base</i>                    |               |                | 0.775          | 0.046          | 0.175          | 0.004          |
| <i>Control</i>                 | 2.024***      | 0.000          | 0.630          | 0.064          | 0.298          | 0.008          |
| <i>Skill</i>                   | 2.041***      | 0.000          | 0.628          | 0.064          | 0.300          | 0.008          |
| <i>Time</i>                    | 1.477**       | 0.013          | 0.700          | 0.057          | 0.238          | 0.006          |
| <i>Cost</i>                    | 0.766         | 0.108          | 0.818          | 0.039          | 0.140          | 0.003          |
| <i>Plan not Suitable</i>       | 1.372         | 0.112          | 0.715          | 0.055          | 0.225          | 0.006          |
| <i>Investment not Suitable</i> | 2.936***      | 0.000          | 0.539          | 0.070          | 0.379          | 0.012          |
| <i>No trust</i>                | 1.013         | 0.947          | 0.772          | 0.046          | 0.177          | 0.004          |
| <i>Not monitored</i>           | 0.878         | 0.543          | 0.797          | 0.042          | 0.157          | 0.004          |
| <i>Not accountable</i>         | 1.101         | 0.666          | 0.758          | 0.049          | 0.189          | 0.005          |
| <i>High returns</i>            | 1.273         | 0.144          | 0.730          | 0.053          | 0.212          | 0.005          |
| <i>High wealth</i>             | 0.749         | 0.107          | 0.821          | 0.038          | 0.138          | 0.003          |
| <i>Compare</i>                 | 0.810         | 0.158          | 0.809          | 0.040          | 0.147          | 0.003          |
| <i>Age Risk</i>                | 1.045         | 0.775          | 0.767          | 0.047          | 0.182          | 0.004          |
| <i>High Fees</i>               | 0.905         | 0.568          | 0.792          | 0.043          | 0.161          | 0.004          |
| <i>Timing know</i>             | 0.746         | 0.128          | 0.822          | 0.038          | 0.137          | 0.003          |
| <i>Active know</i>             | 1.267         | 0.194          | 0.731          | 0.052          | 0.211          | 0.005          |
| <i>Diverse know</i>            | 1.519**       | 0.018          | 0.694          | 0.057          | 0.243          | 0.006          |
| <i>Local know</i>              | 1.504**       | 0.021          | 0.696          | 0.057          | 0.241          | 0.006          |
| <i>SRI know</i>                | 0.795         | 0.225          | 0.812          | 0.040          | 0.145          | 0.003          |
| <i>Timing view</i>             | 0.995         | 0.322          | 0.829          | 0.037          | 0.131          | 0.003          |
| <i>Active view</i>             | 1.005         | 0.318          | 0.720          | 0.054          | 0.220          | 0.006          |
| <i>Diverse view</i>            | 1.000         | 0.912          | 0.693          | 0.057          | 0.243          | 0.006          |
| <i>Local view</i>              | 0.986***      | 0.000          | 0.724          | 0.053          | 0.217          | 0.005          |
| <i>SRI view</i>                | 1.005         | 0.219          | 0.805          | 0.041          | 0.151          | 0.003          |
| <i>Age</i>                     | 1.022***      | 0.001          | 0.755          | 0.049          | 0.191          | 0.005          |
| <i>Male</i>                    | 1.086         | 0.606          | 0.760          | 0.048          | 0.187          | 0.005          |
| <i>Additional Confs</i>        | 1.764***      | 0.000          | 0.661          | 0.061          | 0.271          | 0.007          |
| <i>Balance</i>                 | 1.060         | 0.106          | 0.764          | 0.048          | 0.184          | 0.004          |
| <i>Knowledge</i>               | 1.688*        | 0.098          | 0.764          | 0.048          | 0.184          | 0.004          |
| <i>Partner</i>                 | 1.144         | 0.398          | 0.750          | 0.050          | 0.195          | 0.005          |
| <i>Decision maker</i>          | 0.686         | 0.253          | 0.834          | 0.036          | 0.127          | 0.003          |
| <i>Attention</i>               | 0.747*        | 0.066          | 0.822          | 0.038          | 0.137          | 0.003          |
| <i>Education12</i>             | 0.717*        | 0.076          | 0.828          | 0.037          | 0.132          | 0.003          |
| <i>EducationVoc</i>            | 0.869         | 0.516          | 0.798          | 0.042          | 0.156          | 0.004          |
| <i>EducationUG</i>             | 1.137         | 0.600          | 0.808          | 0.040          | 0.148          | 0.003          |
| <i>EducationPG</i>             | 0.967         | 0.876          | 0.814          | 0.040          | 0.144          | 0.003          |
| <i>Personal Income</i>         | 1.037**       | 0.018          | 0.768          | 0.047          | 0.180          | 0.004          |
| <i>Family Income</i>           | 0.995         | 0.528          | 0.777          | 0.046          | 0.174          | 0.004          |
| <i>Risk Appetite</i>           | 1.010***      | 0.004          | 0.757          | 0.049          | 0.189          | 0.005          |
| <i>Plan Choice</i>             | 1.524***      | 0.000          | 0.693          | 0.057          | 0.243          | 0.006          |
|                                |               |                | 0.597          | 0.067          | 0.327          | 0.010          |
|                                |               |                | 0.493          | 0.071          | 0.421          | 0.015          |

\*\*\*/\*\*/\* reflects significance at the 10%/5%/1% level.

*Notes:* This table reports the exponential of the  $\beta$ 's (a value close to 1 has no impact on the model) from estimation of ordered logit model of investment option choice where the dependent variable *Invest Choice* is a categorical variable where 1= default into investment or "don't know", 2= deliberate default, 3= chose a different investment, 4= in Self-managed superannuation fund. Probabilities (Prob) represent the probability of an individual making each type of plan choice, with the predictors taking the base value from Table 10 in the first (base) row. Other rows show the effect of adjusting one predictor on the probabilities (see Table 10). An additional predictor *Plan Choice* is added, representing the response from the previous model. The base level for *Plan Choice* is 1, three separate probabilities provided represent alternatives of 2, 3 and 4 respectively.



The related estimation for investment option active choice finds similarly intuitive results (see Table 12, page 31). Respondents are more likely to make more active investment choices if: they agree that they want a lot of control over their superannuation; they rate themselves as having a lot of skill; they think that it does not take much time to make choices; and they regard the default investment as unsuitable. The strength of significance for these variables is higher than for the plan choice model, indicating that explanatory variables are more useful in predicting investment choice levels than plan choice levels. The retirement savings goals themselves are not relevant in this ordered logit model, but local preference (home bias) in investment is important. In the case of local preference, respondents who say they are aware of local preference are more likely to be active choosers; and respondents who prefer Australian assets are more likely to be active choosers. Respondents who are aware of diversification are also more likely to be active choosers. The highest category of active choice in the ordered logit model consists of respondents who are members of Self-managed Superannuation Funds (SMSFs). SMSF investment portfolios often have high exposure to local equities, and especially to high capitalization Australian corporations that pay fully-franked dividends (Arnold et al. 2014). Members of SMSFs can minimize their taxes by holding a strongly home-biased equity portfolio, and this preference could explain the significance of these style variables in the model.

In terms of demographics, the estimation shows that active investment choices are more likely to be made by older, more knowledgeable, higher income respondents. Similarly a higher risk appetite, making additional contributions and having made an active choice at the plan level node also significantly raise the odds of active investment choices. By contrast, respondents who pass the attention check are less likely to make an active choice.

The results of this analysis reveals that there are a number of factors the drive decisions in relation to superannuation. While executives may identify the key cause of investment-level default as being disengagement with superannuation, this is only one of a suite of factors influencing this decision, with a lack of skill for making investment decisions being a more significant influencing factor and the suitability of the default investment option being the most significant amongst the factors that might influence delegation.

## **5. Conclusions and discussion**

The Australian government compels employers to contribute a minimum of 9.5% of the wages or salaries of their employees into a complying superannuation fund, which is usually a privately managed DC plan. Employees who decide not to choose a plan or an investment strategy for their contributed savings are automatically defaulted into a plan chosen under their employment arrangements, and then into the default investment strategy chosen by the plan. A majority of members and a majority of assets outside the self-managed sector are in default plans and default investment options. In 2013, the government introduced stricter controls over default funds and investments under MySuper regulations, which aimed to introduce simple, comparable low-cost defaults following either a SAA (balanced) or life-cycle investment strategy. Plan providers reviewed, and in many cases revised, their default settings. Here we compare comments collected in face-to-face interviews with 28 plan executives, with results from an online survey of plan members. Our aim is to better understand the suitability of default offerings.

Survey results show that although defaults are influential, they are not overriding. While we find that members who default at one point are more likely to default at another, with around 36% of respondents reporting defaulting at both the plan and investment strategy decision nodes, and a further 37% reporting

defaulting at one node and not the other. The remaining 27% of respondents make two active choices. Further, around 25% of default plan members have deliberately chosen to go with the default plan offered by their employer (deliberate defaulters); and around 9% of default investment option members are there deliberately. In general, defaulting behavior is not uniform among plan members, and the motivations to default differ at different nodes. Defaulters at the plan node are encouraged to default by trust in the provider and belief that the system is well monitored, and defaulters at the investment option node are delegating because of low level of personal skill in investing.

The theory of optimal defaults (Choi et al. 2005) proposes that defaults should be set to the characteristics of the average member to minimize the costs of switching; but also assumes that principals know their own best strategy or plan, and can switch if the defaults are very unsuitable. In settings where members do not know the best strategy, this model breaks down. Studies of default settings when members are poorly informed or subject to cognitive biases recommend that agents offer smart defaults, adjusted to the characteristics of the members, since active choice will not always lead to better outcomes (Smith et al. 2013). In addition, setting defaults to the average member works best when they are homogeneous, as the costs of non-optimality increase with heterogeneity (Carlin et al. 2013; Fernandes et al. 2014). Studies of optimal life cycle portfolio allocation show that optimal strategies are highly individualized, accounting for personal preferences, human capital risk and background risk, as well as including dynamic hedging strategies adapted to time-varying asset returns. Under the MySuper regulations, retirement savings plan executives have the difficult responsibility of setting default investment strategies for heterogeneous groups of relatively uninformed members who may vary significantly from the average by demographics, risk tolerance and attitudes to delegation.

Ordered logit estimation of plan and investment choices show that low skill and beliefs about the suitability of the default investment strategy are major factors in motivating default investment behavior. As members become older, richer, more knowledgeable and more risk tolerant, they become more likely to exercise active choice. For the majority of members, relying on the skills of plan executives and trustees is the only viable strategy. However, defaults are not necessarily well suited to members. One area of significant difference between default investment members and others is in risk appetite: defaulting members have significantly lower risk appetites, but many plan providers do not appear to take this into consideration in their investment settings. Other indicators of the relative conservatism of defaulters also show up in the survey data, reinforcing the point. Instead, fund executives emphasize the need for investment in growth assets to ensure income in retirement, and subsume risk preferences under time horizon and age in their discussion of portfolio strategies. This raises the question as to whether smart defaults could be implemented in a mandatory DC system encompassing very heterogeneous membership.

The majority of members in our survey readily acknowledge that they lack the skill to choose their own plans and investment strategies. They stay with investment defaults because they rate themselves as not knowing how to choose the best portfolio, and rely on a trusted and well-monitored provider to choose one for them. Defaulting members trust their provider to act in members' best interests, and they rate the default plan and/or the default investment option as personally suitable. However, consistent with Bateman et al. (2014), we find that defaulting is not a simple proxy for low interest or engagement: almost 50% of defaulters say they want a lot of control over their retirement savings, while around the same percentage of the members opting out of the default investment say they don't want a lot of control. By contrast, plan executives tend to bundle default members together under the label of "disengaged" for the purpose of designing default retirement savings plans, and potentially conflate a lack of interest with a lack

of knowledge combined with trust. Trust appears to get less emphasis from executives than from members.

A high level of member trust in plan providers has been associated in other studies with both high and low personal interest in superannuation issues (Deetlefs et al. 2015). Trust can motivate active choice behavior, particularly additional (voluntary) contributions, as well as defaulting. High trust can work to the advantage of the plan providers by giving them more room to raise fees or introduce risk (Gennaioli et al. 2014), since trusting members are unlikely to “be perturbed by a single negative encounter” (Singh and Sirdeshmurkh 2000, p. 163). Then again, a very low level of trust can work to the advantage of members, by encouraging monitoring of fund performance and evaluation of default settings (Deetlefs et al. 2015). Trust is moderated by repeated interactions between principals and agents, and especially by interactions where agents’ expectations of service are not met (Singh and Sirdeshmurkh 2000). Fund executives who can’t tell the difference between disengagement and trust are in danger of undermining the relationship between the fund and its members by putting too little weight on achieving and communicating strong performance.

## Bibliography

- Agnew, J.R., Szykman, L.R., Utkus, S.P., Young, J.A., 2011. What people know about target-date funds: Survey and focus group evidence. Financial Security Project at Boston College, *Working paper*, 2011-2.
- Arnold, B., Bateman, H., Ferguson, A., Raftery, A. 2014. The size, cost and asset allocation of Australian self-managed superannuation funds. *Working paper*, UTS.
- Australian Prudential Regulation Authority (APRA) 2014. *Annual Superannuation Bulletin 2013*. Sydney, Australia.
- Australian Prudential Regulation Authority (APRA) 2015. *Quarterly Superannuation Performance December 2014 (interim edition)*. Sydney, Australia.
- Benartzi, S., Thaler, R.H., 2001. Naive diversification strategies in defined contribution plans. *American Economic Review*, 91(1): 79-98.
- Benartzi, S., Thaler, R.H., 2007. Heuristics and biases in retirement savings behavior. *Journal of Economic Perspectives*, 21(3): 81-104.
- Benzoni, L., Collin-Dufresne, P., Goldstein, R. S., 2007. Portfolio choice over the life-cycle when the stock and labor markets are cointegrated. *The Journal of Finance*, 62(5):2123-2167.
- Bodie, Z., Detemple, J., Rindisbacher, M. 2009. Life cycle finance and the design of pension plans. *Annual Review of Financial Economics*, 1:249–86.
- Brown, J. R., Farrell, A. M., Weisbenner, S. J. 2015. Decision-making approaches and the propensity to default: Evidence and implications. *NBER Working Papers*, No. w20949, National Bureau of Economic Research. Cambridge MA.
- Brown, J.R., Liang, N., Weisbenner, S. 2007. Individual account investment options and portfolio choice: Behavioral lessons from 401(k) plans. *Journal of Public Economics*, 91, 1992 – 2013.
- Butt, A. Donald, S., Foster, F. D., Thorp, S., Warren, G. 2014. MySuper: A stage in an evolutionary process, *CIFR Research Working Papers*, No. 048/2014 (December), Centre for International Finance and Regulation.

Butt, A. Donald, S., Foster, F. D., Thorp, S., Warren, G.J. 2015a. Design of MySuper default funds: Influences and outcomes. *Accounting and Finance*, in press.

Butt, A., Donald, M. S., Foster, F. D., Thorp, S., Warren, G. J. 2015b. The Australian superannuation system post Stronger Super: Views from fund executives. *Law and Financial Markets Review*, 9(2): 106-112.

Campbell, J. Y., Viceira, L. M. 2002. *Strategic asset allocation: portfolio choice for long-term investors*. Oxford University Press.

Carlin, B.I., Gervais, S., Manso, G., 2013. Libertarian paternalism, information production and financial decision making. *Review of Financial Studies*, 26(9): 2204-2228.

Chant, W., Mohankumar, M., Warren, G. 2014. MySuper: A new landscape for default superannuation funds. *CIFR Research Report*, Centre for International Finance and Regulation.

Chetty, R., Friedman, J.N., Leth-Petersen, S., Nielsen, T., Olsen, T. 2012. Active vs. passive decisions and crowdout in retirement savings accounts: Evidence from Denmark. *NBER Working Papers*, No. w18565. National Bureau of Economic Research: Cambridge MA.

Choi, J. J., Laibson, D., Madrian, B. C., Metrick, A. 2005. Passive decisions and potent defaults. In Wise, David A., (ed.) *Analyses in the Economics of Aging*. University of Chicago Press: Chicago, pp. 59-73.

Cocco, J., Gomes F., Maenhout P.J. 2005. Consumption and portfolio choice over the life cycle. *Review of Financial Studies*, 18(2):491–533

Conlisk, J., 1996. Why bounded rationality? *Journal of Economic Literature*, 34(2):669-700.

Cronqvist, H., Thaler, R.H. 2004. Design choices in privatized social security systems: Learning from the Swedish experience. *American Economic Review*, 94(2):424-28.

Deetlefs, J., Bateman, H. Dobrescu, L., Newell, B., Ortmann, A., Thorp, S. 2015. Suspicious minds. *Working paper*, available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2575482](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2575482).

Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., Wagner, G. G., 2011. Individual risk attitudes: Measurement, determinants, and behavioral consequences. *Journal of the European Economic Association*, 9(3):522-550.

Foster, F. D., Warren, G.J. 2014. Interviews with institutional investors: The how and why of active investing. *Journal of Behavioral Finance* (forthcoming).

Gennaioli, N., Shleifer, A., Vishny, R. 2015. Money doctors. *The Journal of Finance*, 70(1): 91–114.

Gomes, F.J., Michaelides, A.G., 2005. Optimal life cycle asset allocation: Understanding the empirical evidence. *Journal of Finance*, 60(2): 869-904.

Guvenen, F., Karahan, F., Ozkan, S., Song, J. 2015. What do data on millions of US workers reveal about life-cycle earnings risk?. *NBER Working Papers*, No. w20913. National Bureau of Economic Research.

He, X. D., Zhou, X. Y. 2011. Portfolio choice under cumulative prospect theory: An analytical treatment. *Management Science*, 57(2):315-331.

Heaton, J., Lucas, D. 2000. Portfolio choice and asset prices: the importance of entrepreneurial risk. *The Journal of Finance*, 55(3):1163–98.

Huberman, G., Jiang, W., 2006. Offering versus choice in 401 (k) Plans: Equity exposure and number of Funds. *The Journal of Finance*, 61(2):763 -801.

- Jagannathan, R., Kocherlakota, N.R. 1996. Why should older people invest less in stocks than younger people? Federal Reserve Bank Minneapolis. *Quarterly Review*, 20:11–23.
- Lipkus, I.M., Samsa, G., Rimer, B.K., 2001. General performance on a numeracy scale among highly educated samples. *Medical Decision Making*, 21(1):37-44.
- Lusardi, A., Mitchell, O.S. 2011. Financial literacy around the world: An overview. *Journal of Pension Economics and Finance*, 10(04):497-508.
- Marley A.A.J., Louviere, J.J. 2005. Some probabilistic models of best, worst, and best-worst choices. *Journal of Mathematical Psychology*, 49(6):464-480.
- Merton, R.C. 1969. Lifetime portfolio selection under uncertainty: the continuous-time case. *Review of Economics and Statistics*, 51:247–57.
- Michaelides, A., Zhang, Y., 2015. Stock market mean reversion and portfolio choice over the life cycle (February 13). *Working paper*, available at: <http://dx.doi.org/10.2139/ssrn.2564447>.
- Morrin. M., Inman, J.J., Broniarczyk, S.M., Nenkov, G.Y., Reuter, J., 2012. Investing for retirement: The moderating effect of fund assortment on the 1/n heuristic. *Journal of Marketing Research*, 49(4):537-50.
- Oppenheimer, D. M., Meyvis, T., Davidenko, N. 2009. Instructional manipulation checks: Detecting satisficing to increase statistical power. *Journal of Experimental Social Psychology*, 45(4):867-872.
- Polkovnichenko, V., 2007. Life-cycle portfolio choice with additive habit formation preferences and uninsurable labor income risk. *Review Financial Studies*, 20(1): 83–124.
- Productivity Commission 2012. *Default Superannuation Funds in Modern Awards*. Report no. 60, Final Inquiry Report, Canberra, Australia.
- Rangel, A. 2005. Comment on Passive decisions and potent defaults. In Wise, David A., (ed.) *Analyses in the Economics of Aging*. University of Chicago Press: Chicago, pp. 73-78.
- Samuelson, P.A. 1969. Lifetime portfolio selection by dynamic stochastic programming. *Review of Economics and Statistics*. 51:239–46.
- Singh, J., Sirdeshmukh, D. 2000. Agency and trust mechanisms in consumer satisfaction and loyalty judgments. *Journal of the Academy of Marketing Science*, 28(1):150–167.
- Smith, N. C., Goldstein, D.G., Johnson, E.J. 2013. Choice without awareness: Ethical and policy implications of defaults. *Journal of Public Policy & Marketing*, 32(2):159-172.
- Stracca, L. 2006. Delegated portfolio management: A survey of the theoretical literature. *Journal of Economic Surveys*, 20(5):823-848.
- Towers Watson 2014. *Global Pensions Asset Study – 2014*. <http://www.towerswatson.com/en-AU/Insights/IC-Types/Survey-Research-Results/2014/02/Global-Pensions-Asset-Study-2014>.
- Tuckett, D. 2012. Financial markets are markets in stories: Some possible advantages of using interviews to supplement existing economic data sources. *Journal of Economic Dynamics and Control*, 36(8):1077-1087.
- Van der Horst, L., 2013. DC Defaults 2.0: An international framework in order to improve the investment strategy for DC defaults across Europe. *Netspar MSc. Thesis*, 2013:008. Tilburg University, The Netherlands.