



CSIRO-Monash Superannuation Research Cluster

WORKING PAPER SERIES

THE DEMAND FOR ADVICE IN DEFINED CONTRIBUTION PENSION PLANS

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DATE: 30 SEPTEMBER 2014

CSIRO-MONASH WORKING PAPER NO 2014-09

CLUSTER PROJECT 3: MEMBER BEHAVIOUR ADVICE, SAVINGS AND GENDER
PRELIMINARY DRAFT

ABSTRACT

Defined contribution (DC) or money purchase pension saving schemes place the onus on participants to make decisions on asset allocation, the choice of investment vehicles, and the extent to which changes in individual circumstances and macroeconomic conditions should affect investment strategy. Many people are ill-equipped to make these types of decisions. The role of third-party advisers is quite problematic, particularly when their incentives are inconsistent with the interests of those that seek advice. In this paper, we report the results of a comprehensive study of the advice sought by Australian DC participants from their plan sponsors (agent) over time, explaining observed patterns by reference to life-cycle effects, salience, and the size-of-bet effect. The mode of inquiry, the frequency and volume of contact by plan participants, and the sensitivity of participants to announced changes in the national pension regime and macroeconomic events are also considered. Whereas research on this topic has focused upon fee-for-service advisers, we focus upon the advice provided by the agent of DC plan sponsors that has no direct interest in the outcome of calls or web-based inquiries. Analysis takes in approximately 430,000 Australians over the period 2004 to 2013.

Keywords. Advice, information, individual decision-making, defined contribution pensions

JEL Codes. G23

ACKNOWLEDGEMENTS: THIS RESEARCH WAS SUPPORTED BY THE CSIRO-MONASH SUPERANNUATION RESEARCH CLUSTER, A COLLABORATION BETWEEN CSIRO, MONASH UNIVERSITY, GRIFFITH UNIVERSITY, THE UNIVERSITY OF WESTERN AUSTRALIA, THE UNIVERSITY OF WARWICK, AND STAKEHOLDERS OF THE RETIREMENT SYSTEM IN THE INTEREST OF BETTER OUTCOMES FOR ALL.

This paper has benefited from the comments and advice of colleagues including Christine Brown, Carly Moulang, Paul Lajbcygier, Maria Strydom, John Vaz, Huu Dong and Dane Rook. The project has been made possible by the support provided by Mercer (Australia).



1 Introduction

In many OECD countries, money purchase or defined contribution (DC) pension schemes have come to dominate the provision of supplementary pension benefits. The uncertainties involved in funding defined benefits (DB) have become so significant that, where-ever possible, private sector employers have retreated from sponsorship of these schemes (Clark and Monk 2007). In some countries, participation in supplementary pension saving schemes is entirely a matter between the employer (plan sponsor) and the employee (plan participant). In other countries, government requires employers to automatically enrol their employees into a pension saving scheme which meets a minimum set of standards; see the UK and the role of the National Employee Savings Trust (a government-sponsored DC scheme). In some countries, participation in a pension saving scheme is mandatory along with a minimum contribution rate of annual gross salary (as in Australia).

Whereas the uncertainties associated with DB schemes were the responsibility of employers, employees carry the risks associated with DC schemes. Prompted by the behavioural revolution led by Kahneman and Tversky (1979) and the application of their analytical framework and findings to the issue of individual savings behaviour (see Benartzi and Thaler 2005; Thaler and Sunstein 2008), it is widely believed that the average DC pension plan participant is ill-equipped to make financial decisions consistent with realising their best interests over the long-term. More generally, the research programme on financial literacy initiated by Lusardi and Mitchell (2007) has demonstrated that many people simply do not have the requisite financial knowledge and understanding to make informed saving decisions, and often fall short of the domain-specific skills and expertise needed to function effectively in the context of market risk and uncertainty.

One response to acknowledged shortfalls in financial acumen has been to encourage individuals to be more knowledgeable and better informed about the issues relevant to their long-term welfare. In the UK, current and previous governments have promoted public awareness programs designed to facilitate informed financial decision-making. This approach supposes that one important barrier to adequately long-term saving is a lack of information about how to save and how much to save at different stages of the life-cycle. This policy programme also seeks to redress widespread distrust of the advice proffered by commercial advisers and vendors. If people seek advice, they tend to trust friends and relatives as opposed to commercial agencies—friends and relations can be poorly-placed to provide adequate assistance (see Clark et al 2012). Not surprisingly, some governments have simply bypassed the issue in favour of encouraging the provision of pension products designed to be consistent with the long-term interests of the average pension plan participant (see the Australian Government's Cooper Review 2010 which recommended the introduction of a generic pension saving product).

Government-led information services have done little to improve the lot of the average DC plan participant. As a result, governments have suggested pension schemes (DB and DC) take a more active role in providing information and, at the limit, advice relevant to their plan participants. Even here, possible conflicts of interest have been identified especially when DC plan sponsors' interests in concluding mutually beneficial contracts with service providers trump their responsibilities to plan participants (Clark and Urwin 2011). At the same time, plan sponsors and service providers have been wary of providing advice, recognising that giving advice may entail long-term responsibility. In any event, the average DC plan participant may have little interest in expending the time and effort necessary to seek advice from informed third parties because it is difficult to demonstrate cause-and-effect (that is, the benefits of a change in behaviour prompted by seeking advice). Little is known about who would seek advice, about what issues, when, and in what contexts, and to what affect *if* the advisor or advisors were genuinely disinterested in the outcome.

In this paper, we provide an account of who seeks advice, the medium through which they seek advice, and the context in which advice is sought.¹ Our analysis is based on the Australian superannuation system over the years 2004–2013, in circumstances where seeking advice was initiated by the plan participant and where the agent of a group of plan sponsors had an interest in helping the plan participant rather than deflecting their enquiry and/or selling a related product or service. Crucially, the agent of this group of plan sponsors competes with other large Australian plan sponsors for a share of the growing market for DC pension services. The agent has an interest in enhancing its reputation for being timely in response to an enquiry, for giving advice consistent with the interests of individual plan participants, and for being perceived to be a trustworthy provider of services.² When seeking advice from the agent, plan participants are not required to pay directly for this service.

We begin with the temporal pattern of advice-seeking demonstrating that the year-by-year increasing volume of advice seeking can be disaggregated into components including a daily affect (within a week) and a seasonal effect (including an effect which represents the end of the tax year and a summer vacation effect). We show that there is a singular episode that stands-out in the volume of advice seeking across the entire time period: prior to the peak in the financial bubble, a major change in federal legislation concerning superannuation benefits and entitlements was announced a year before it came into force on July 1, 2007. Of concern, in this respect, is the timing of advice-seeking on this issue by pension plan participants prior to, and immediately after, the implementation of the legislation. Notwithstanding the lead-time between the announcement and its implementation, we show that advice-seeking on this issue was concentrated in the weeks prior to its implementation and, to a much lesser extent, immediately after its implementation.

So as to understand who seeks advice, a multinomial logistic model is used to predict advice-seeking on the basis of the type of participant: his or her age, gender, economic well-being measured in terms of their salary and account balance, and whether participants utilised other services provided by the sub-plan sponsor and/or agent including salary sacrifice. We test whether the life-cycle model is a good predictor of advice-seeking given recent research which suggests that the age (older rather than younger) and the gender of a participant are key drivers of the salience of retirement planning (Clark et al 2012). We also test whether the size-of-bet is important in prompting advice-seeking; that is, whether a large account balance and/or salary are good predictors of advice-seeking as suggested by experimental evidence (see Clark et al 2009) but disputed by other researchers who suppose that participants can see through money illusion (*contra* Shafir et al. 1997). Finally, we test whether these predictors of advice-seeking are more or less significant over the entire period compared to the singular episode.

It is shown that the age of a participant (being an older participant rather than younger participant) is a statistically significant predictor of advice-seeking. As such, the life-cycle model and the size-of-bet hypothesis are good predictors of advice-seeking. These findings come with two significant implications. First, those predisposed to plan for the future by virtue of age and prospective benefit dominate advice-seeking while those not so predisposed to plan for the future tend not to seek advice. In effect, the advisory service reinforces the knowledge and understanding of retirement issues of those already aware of the salience of these issues. Second, it is remarkable that,

¹/. By ‘advice’ we rely upon a common-sense understanding of the term, signifying a broad range of participants’ concerns rather than the particular legal meaning of the term associated with fiduciary duty.

²/. It is also the case that the agent and plan sponsors have a shared interest in retaining participants with large account balances since their continued participation allows for a range of services and an intensity of provision of services that would not be possible if they were not in the plan. In some cases, the agent might reward call-receivers if they ‘retain’ a large account balance participant (in the face of a threat to leave).

notwithstanding the long lead-time of the announced change in federal legislation affecting the tax treatment of superannuation benefits, advice-seeking was concentrated immediately before the implementation of these changes. We show that there were no statistically significant differences between those that sought advice immediately prior to, and those that sought advice immediately after, the implementation of these changes. In conclusion, the implications of our findings are applied to business policy and government policy.

2 Information and Financial Behaviour

To set the issue in context, in this section a model of information and individual behaviour is presented. The model is schematic, emphasising key elements rather than the specifics of a certain time and place. In the following section, a bridge is made between the model and the specific institutional context in which pension plan participants make decisions and seek advice. Whereas the model could be conceived in universal terms without reference to financial issues, it is arguable that these types of issues are distinctive when compared to the many other issues that people must face on an everyday basis (see Lusardi and Mitchell 2011 on financial literacy).

2.1 Basic assumptions

For simplicity, assume that individuals are intendedly rational (Doherty 2003). Given their goals and objectives (ends), individuals choose the most effective instruments (means) available to realise those goals and objectives. Intention is emphasized rather than results matching Simon's (1956) argument to the effect that realising goals and objectives can be quite problematic due to cognitive constraints and the circumstances in which people find themselves (often termed the 'environment'). It is assumed that making plans depends upon searching for, and sorting amongst, the available information concerning options and changing circumstances (Sharpe 2007). Finally, it is assumed that searching for, and sorting amongst, the available information incurs costs. With limited cognitive and material resources, individuals tend to economise on searching for, and sorting amongst, the available information (Gabaix et al. 2006).

2.2 Decision framework

Assume individuals face two types of financial decisions. One type of financial decision can be termed 'episodic' in that individuals treat it as a one-off decision. This may be because this type of decision is rare, or rarely repeated, or if repeated the gap (in time and space) between similar types of decisions is such that individuals go back to basics each time such a decision is encountered. An obvious example is buying a house, a decision which many people encounter only once or twice in a lifetime. Perhaps more obvious, each time an individual seeks to re-mortgage their house changes in the mortgage market, interest rates and expectations, and regulatory requirements are such that the effective carryover between related decisions is slight and recognised as such by those involved.

Another type of financial decision can be termed 'continuous' in the sense that individuals treat it as an instance in a string of related decisions. In this case, the gap (in time and space) between similar types of decisions is slight; individuals' carryover knowledge and information gleaned from previous decisions to current decisions. Where the expected costs of making a second-best decision are modest and where its expected effects are distributed into the future, individuals may be tempted to carryover past decision-rules or heuristics albeit slightly modified to take account of recognisable shifts in the environment (Gigerenzer et al. 1999). A more sophisticated decision maker may consciously or otherwise adopt a Bayesian decision framework such that as they encounter repeated instances of much the same problem they revise their expectations taking into account the most recent information in relation to the underlying pattern of related events (Bermúdez 2009).

This issue can be complicated by distinguishing between two types of information. One type of information can be termed 'discrete' in the sense that it is to be found at a specific time and place,

subject to the costs involved in searching for information. This may be because others' recognise that this type of financial information is valuable and, as a consequence, it tends to be hoarded. The other type of information can be termed 'ubiquitous' in the sense that it is widely available, perhaps on the Internet and through more conventional public outlets. Here, the issue is less about searching for information than sorting between the available information in terms of its integrity and relevance. There is a close relationship between searching for, and sorting amongst, information (Spence 1976). If the search costs involved in finding information are significant, individuals tend to narrow the scope of information sought so as to economise (in terms of time and effort) on the search process. If information is ubiquitous, it is assumed that individuals emphasise sorting over searching according to what they perceive is needed in terms of making an effective financial decision.

2.3 Four cases

Here, are the rudiments for an analytical framework of the relationship between the nature of financial decision-making and the type of information available when making such decisions (Pliske and Klein 2003). As indicated above, this framework is deliberately schematic and highly stylised. Nonetheless, it provides a way of representing the key issues before we undertake the substantive analysis of advice-seeking by Australian defined contribution pension plan participants. Figure 1, below, presents in summary form the analytical framework.

<Figure 1>

Case A: episodic decision, discrete information. In this instance, individuals search for information relevant to the specific decision which they plan to take or must take as part of their lives. As noted above, searching rather than sorting information dominates the proceedings given that a small volume of quite specific information could make a significant difference to the effectiveness of decision-making. There can be three steps in the search process: first, a preliminary scan of what is immediately available; second, a cost-benefit analysis of an in-depth search for information against the likely payoff of expending time and effort; and, third, the implementation of a search whose scope in time and space is commensurate with the perceived significance of the issue.

Case B: continuous decision, discrete information. In this instance, individuals face a sequence of related decisions spread over time, with all the advantages and disadvantages that attend the accumulation of information relevant to this type of decision. Formally, this information could be stored in a data warehouse (such as a computer). It could also be stored in a person's memory. The retrieval and application of stored information is the essence of the problem. If information is stored and retrieved time and again as related decisions are presented, the key issue is whether the storage process takes account of new information such that it remains relevant as circumstances change. More problematic, and widely recognised as such in the literature, is when people retrieve information from memory; in these situations, people tend to select information which confirms their predilections (Rook 2014).

Case C: episodic decision, ubiquitous information. In this instance, the search for information is less important than sorting or screening the available information in accordance with the specific decision that must be taken. In this situation, information is best understood as a flow rather than a stock. In Case B storing information makes sense given its limited supply. In Case C, the issue becomes how best to manage the flow of information. One strategy may be to continuously sample information, testing its relevance and veracity, and repeating the process until the individual concerned has confidence in making a decision (Schacter and Addis 2007). There is, of course, a

limit to the sampling process—a stopping rule is required.³ Alternatively, given the costs involved, individuals may seek advice from a third party that is better-placed to sort through the flow of information in ways consistent with the decision that an individual faces.

Case D: continuous decision, ubiquitous information. In this instance, once again the search for information is less important than sorting or screening the available information. But, in this Case, because this type of decision is taken time and again, the individuals concerned may learn to cope with the flow of information, developing formal or informal algorithms through which to process information taking into account the results of past decisions. Here, however, are two obvious caveats. First, whether or not an individual persists in sampling and sorting information, and revising the algorithms they use to process information would depend, it appears, on whether they are successful in the first phases of this process. Evidence from behavioural psychology suggests that individuals retreat from this process if, in the early stages of the process, their efforts are unsuccessful (Kahneman 2011). Second, in any event, given a sequence of related decisions individuals may implement an automatic decision-rule which is applied time and again until it fails. In this situation, individuals may be more concerned about instances of failure than instances of near and not-so-near approximations to desired outcomes.

2.4 Logic of Decision-Making

As intimated above, decision-making can be characterised according to the nature of the decision or decisions taken as well as the frequency of decision-making given a specific topic or issue. While retirement planning and saving for the future have long-term consequences, this does not necessarily mean that decisions once taken are maintained over the long-term. Having made a commitment to a long-term saving strategy may entail a string of subsequent decisions responding and adapting to changing circumstances between the initial commitment and actual retirement (Lo 2011). Status quo bias is typical of DC plan participants (Samuelson and Zeckhauser 1988). But this is not a satisfactory representation of the range of behaviour evident in DC pension plans nor is it necessarily a desirable course of action.

Research on retirement planning has shown that it is an issue fraught with many uncertainties. While a 50-year-old has good information about his or her human capital and earning potential, it is difficult to predict one's retirement date because there are at least three intervening variables: his or her future health, the preferences of his or her employer, and his or her family circumstances and commitments. Notice, with each year beyond the age of 50, individuals are better able to predict their retirement date and well-being at retirement. By contrast, a 30-year-old has relatively poor information about his or her human capital and earning-potential and may not be able to identify and/or give credence to intervening variables that may affect their future retirement date. Not surprisingly, in these circumstances, younger people tend to heavily discount the future and may simply ignore the issue (saving for the future) (see Ainslie 2001).

Research on sequential learning suggests that being able to link cause and effect is an essential ingredient in calibrating decision-making such that it better approximates intended goals and objectives (Pearl 2000). Research also suggests that repeated decision-making over a relatively limited period of time aids the learning process such that it may come to approximate a Bayesian mode of reasoning (Jones and Love 2011). However, if individuals are unable to link cause-and-effect because of the long gestation period in realising the results of a decision, they could treat retirement decision-making as a discrete event rather than as a series of related decisions whose

³/. There is an extensive literature on the costs and benefits of sampling, including recognition of the consequences of sampling for decision-making (Friedler 2000) and the problems that arise when sampling excludes (deliberately or otherwise 'extreme' events). See Taleb (2007).

effects are integrated into the planning process. As a consequence, they may become oversensitive to 'events' which signal (in some way) that past plans are no longer adequate (Barberis 2013).

Planning for the future depends upon individual and collective capabilities and resources (see Clark et al 2012 on the household as a planning unit). Assuming a predisposition in favour of saving for the future, the effectiveness of such a commitment depends upon three factors: (1) knowledge and understanding the issues, (2) relevant skills and expertise, and (3) the resources (money, networks, and advisory services) required to make informed decisions. As noted above, the program on financial literacy initiated by Lusardi and Mitchell (2007) emphasises the significance of factors one and two, and has significant insights as to the possible relevance of factor three in compensating for shortcomings in the first two factors. Their research also suggests that financial decision-making in general and retirement planning in particular are decisions that demand domain-specific skills and expertise (see generally Wagner 2002). To the extent individuals recognise their shortcomings in this regard, this may dampen their confidence in retirement planning or they may seek advice.

Here, are two elements of a systematic approach to the issue of information and saving for the future. It is hypothesised that seeking advice is age-related in that there are fewer uncertainties about the issue at an older than a younger age, and the consequences of making related decisions are more transparent. Holding age constant, it is also hypothesized that in seeking advice individuals may (in effect) aim to compensate for apparent shortcomings in terms of preparedness. Note, we are not able to comment on this issue because of the particular structure of the database.

Planning for retirement and saving for the future can be treated as discrete decisions that once made are carried through to retirement. But notice, these decisions are actually a set of related decisions. In many jurisdictions, DC plan participants have the option to set their own contribution rates which may also relate to the contribution rates of their plan sponsors. Some plan sponsors have an automatic contribution escalator which begins with a relatively low contribution rate and progressively increases the contribution rate as the participant grows older and more able to contribute (Benartzi and Thaler 2005). Having determined the contribution rate, DC plan participants are typically required to establish an investment strategy. This is normally framed as an issue of asset allocation which affects the choice of investment products and providers. Many people are risk averse and are sensitive to any expected loss (Kahneman and Tversky 1979).

The Australian federal government requires all employed Australians to participate in (at least) a defined contribution pension plan and contribute a minimum of 12% of gross salary to the chosen scheme. In terms of participants' risk and return objectives, neither the government nor plan sponsors offer guaranteed returns. Nonetheless, over the period 2002 – 2013 many DC plan participants were automatically enrolled into the default fund provided by the plan sponsor and/or its agent. In these circumstances, participants' risk and return objectives were set by the plan sponsor. In the Australian case, the standard default fund has had significant exposure to Australian equities. In most other countries, this type of exposure over the same period would have seen significant market gains and losses as the global financial crisis profoundly disrupted global equity markets. Here, the global financial crisis had modest real effects even though the local media reported on the significance of the crisis around the world.

Whereas many DC participants lack the information and skills to make effective long-term investment decisions, it is apparent that Australian participants are located in a remarkably rich information environment. The print media, the visual and spoken media, and electronic networks are awash with information about the superannuation industry, the market performance of equities, bonds, and other asset classes, the relative short-term performance of superannuation funds, the costs of funds management, and much else besides. This information is uneven in terms of its

quality. But, it is both ubiquitous and effectively cost-free. Further, on a subscription basis, there are numerous commercial providers of information tailored to topics such as investment strategy, investment options, and the likely effects of near-term and long-term economic and financial events. The flow of information is situated in the market for information and, as a consequence, is not always trusted because of the (often shrouded) interests of commercial providers (Gabaix and Laibson 2006).

Research in the cognitive sciences and psychology suggests that the average person has a limited capacity to absorb, synthesise, and value large volumes of information. By intention or by impulse, people sample received information often choosing information that confirms their predispositions. Furthermore, with a never-ending flow of information which has only grown in volume, it is likely that people delay taking a decision until they must make a decision (see O'Donoghue and Rabin 1999). In these circumstances, events that stand-out from the ongoing flow of information get more attention than perhaps they deserve (Tversky and Koehler 1994). Rightly or wrongly, in responding to an event or series of events people tend to look for information that attributes to these events or a series of events a causal link which may exaggerate the strength of their interrelationships. At a larger level, purveyors of information can pick-out events as 'trigger points' when touting for business including making changes in plan participants' investment strategies.

In these circumstances, pension plan participants may seek advice from 'safe havens' unsullied by the market for information, and with no apparent commercial interest in priming and prompting action. We expect that there are peaks and troughs in advice-seeking, along with a growing volume of advice-seeking which reflects the cacophony of noise evident in the market for information on pension saving and the superannuation industry.

3 Data Overview – Overall Patterns of Advice Seeking

Data on advice-seeking comes from Mercer (Australia) and their Super Trust, Corporate Division. The Super Trust (ST) is the agent for more than 180 private sector employers, providing both DC and DB pension benefits (overwhelmingly focused upon DC benefits). Some ST employers are very small with just a handful of employees, but some are very large including a number of Australia's largest private employers. Included in the database are 567,491 individuals across the period 2002 – 2013. It is a remarkable database because it has a wide range of individuals, including those that earn little over the course of the year through to those that earn very high salaries. It represents a significant slice of the Australian economy and society. For each individual, we have their gender, postcode of residence, date of birth, the date he or she joined (or left) the company, their salary, account balance, employer contributions, whether they participate in salary sacrifice arrangements, and whether they have supplementary insurance and savings products (Feng and Gerrans 2014).

Mercer's ST provides a range of services, more often than not on a common platform. With respect to advice-seeking, Mercer provides two ways of obtaining advice: through a telephone call centre (introduced midyear 2004) and a web-based request line (introduced in early 2008). The telephone helpline is common to all participating employers and their pension plan participants. It is a centralised facility, located in Melbourne. It is open during weekdays between the hours of 8 AM and 8 PM. As each call is received, the Mercer adviser records the topic or topics raised during the call. Over the period 2004 – 2013 approximately 70 categories were used to code the topics. Of the more than 1.5 million topics raised by callers over the entire period, 40 of the topic categories received less than 1000 statements of interest. In general, three groups of categories can be

identified (in descending order of significance): administrative matters, investment matters, and retirement planning.⁴

In Figure 2, the frequency of calls is displayed over the period 2004 – 2013. From the introduction of the call facility in mid-2004, the growth in volume of calls lags the growth in member numbers and it took approximately 2 years for participant activity to reach maturity or a “steady-state”, with a peak in the volume of calls mid-year 2007 followed by a slight upward shift in calls in 2012 and 2013. In the penultimate section of the paper, we look more closely at the circumstances prompting the spike in calls. We identified certain regularities in calling frequency. With the closure of the call facility on Saturdays and Sundays, call volume tends to be low on Mondays, peaks on Tuesdays, declines Wednesdays and Thursdays, and dies-out on Fridays. In terms of monthly frequencies, call volume is highest in June (the Australian tax year concludes June 30th of each year), is lowest in December (including the Christmas and New Year holiday period), gathers momentum in March and May of each year and then tails-off once the tax year has passed.

[Figure 2 About Here]

From its inception, the upward trend in the volume of calls on a monthly basis was rather slight, biased by the initial two years in which participants became aware of the facility and began to use it and the last two years where the volume of calls began to increase. It was found that the variance in call volume was dominated by the day-of-the-week (81% of the total variance) and the seasonal (18.50%) effects. The monthly effect contributed 0.40%, and the week-of-the-year effect contributed just 0.12%.

With the introduction of the web facility mid-2008, there was an immediate surge in participant registration (approximately 200,000 web requests). Thereafter, the average volume of registration declined and in 2013 was at about 60% of the initial surge in interest. Notice, the web facility is accessible every day in the course of the week peaking on Sundays. During the course of the year, web enquiries peak midyear and are lowest over the December and January holiday period. For a number of participants, the web facility is the only means by which advice is sought.⁵ By the end of the period, those that used the call facility tended to use the web facility. At the end of the period, those that only used the web were, on average, younger than those that used the web and the call facility (36 versus 42 years), had lower salaries (\$65,000 versus \$80,000 per year), and had much lower account balances (\$25,000 versus \$60,000). On each of these measures, those that used only the web facility were more similar to one another than those that used the web and the call facility.

The period 2002 – 2013 was one of the most significant episodes of economic and financial turmoil experienced by OECD countries over the past 100 years. In the aftermath of the collapse of the TMT bubble and the 9/11 terrorist attacks in New York and Washington, a financial bubble developed facilitated by loose monetary policies and financial leverage focused upon the US housing market which peaked in 2007 (Blinder 2014). It was followed by a deep recession in many OECD countries,

⁴/ When seeking advice, callers (and web-users) often touch upon a range of issues, some administrative and some more substantial in terms of investment decision-making. Hard-and-fast distinctions between categories as implied by legal definitions of advice do not do justice to the complex interaction between the various concerns that may prompt a call.

⁵/ Once the web facility was introduced younger men more than younger women took-up this option (as expected). We have no information on whether the benefits of the call option are framed by the agent and/or the participating sub-plans in ways that ‘induce’ more women than men to take advantage of the facility (see Agnew et al. 2007).

amplified in continental Europe by the Euro crisis. In many countries, the loss of GDP growth, higher levels of unemployment and underemployment, and adverse effects on health and welfare were significant (Chang et al. 2013). Leading policymakers and politicians made concerted efforts to avoid a repeat of the great depression of the 1930s (Geithner 2014). It is reasonable to hypothesise that over the period 2004 – 2013 the volume of calls and web enquiries were statistically related to the path of the Australian economy and its stock market.

A test of the relationship between use of the call facility and the web facility in relation to macroeconomic and financial indicators was conducted. It was found that there was no such statistical relationship.⁶ In this respect, our findings are consistent with related findings of academics, the Reserve Bank of Australia, and business commentators to the effect that for all the local media attention devoted to the global financial crisis, there was no appreciable shift in the pattern of call inquiries to Mercer’s Super Trust advisory facility.

4 Data Analysis - Predictors of Call Enquiries

To assess the importance of various predictors of the decision not to call, to call once, to call about average, and to call frequently a multinomial logistic model was used. So as to focus on the behaviour of members within their *employment* plan, the sample excludes members of the personal division of the trust. Members are transferred to the personal division from their employer sub-plan when their employment ceases.

The multinomial logistic model allows a test of the significance or otherwise of life-cycle determinants of attention to the issue, the salience of the issue measured in terms of income and account balance, and gender affects. On this last issue, it is widely recognised that women are more risk averse than men even if the likely direction of the effect, positive or negative, on this particular issue is unclear (Baron 2008). Being more risk averse than men, women could call more frequently seeking to allay anxiety about immediate events and long-term prospects (Lusardi and Mitchell 2008). On the other side of the gender divide, Barber and Odean (2001, 262) hypothesised that “men will trade more than women” because men are prone to over-confidence. Using the same logic, we hypothesise that men will not seek advice to the same extent as women seek advice.⁷

4.1 Descriptive Statistics

In the complete dataset (n=567,451) 55.8% of members made no calls. Of the 44.2% that made a call, 39.1% made one call, 52.0% made between two and seven calls (classified as the “average” caller group), and 8.9% made more than seven calls and were classified as the “frequent” caller group. On average, there was no obvious gender difference between those that called and those that did not call at least once. Notice, the analysis reported here and subsequently refers to a set of variables other than gender that change in value over this period. There is, moreover, the issue of how to represent age – in this paper we refer to the age of the participant when they entered the relevant sub-plan.

⁶/. Using an OLS regression model, the quarterly change in the volume of calls across the entire period was regressed against the change in GDP, change in the unemployment rate, and change in the Australian stock exchange index. No parameters were found significant, and the R-squared was found to be 0.08. The full specification and results are available from the authors.

⁷/. To the extent Australian women, like US women, have relatively lower levels of financial literacy than men, it is possible that they seek advice more often than men on retirement planning and saving for the future (see Watson and McNaughton 2007). A predisposition in favour of seeking advice is, presumably, only realised in action (seeking advice) if they actually recognise the need for advice and recognise the value that the agent can add to their deliberations.

A preliminary analysis (see Table 1) of the differences between these three types of callers showed that those that called between two and seven times compared to those that called just once were on average slightly older, had more years of membership in the sub-plan, had significantly larger account balances and higher incomes. Those participants who called frequently as opposed to those that called just once were significantly older, had much higher incomes and had, on average, account balances that were three times the value of the account balances of those that called just once. Likewise, in terms of salary sacrifice, frequent callers compared to those that called just once had made significant commitments to salary sacrifice.

[Insert Table 1 About Here]

4.2 Multivariate Analysis of Calling Behaviour

A multinomial logistic model was estimated combining information on those that called with those that did not call, distinguishing between those that had not called (Not Called), those that called once (Called Once), those that called between two and seven times (Called Average), and those that called more than seven times (Called Frequently). Member gender (Male), age (Age), average account balance over the period of membership (Account Balance), average annual salary over the period of membership (Salary), and number of years in the fund (Membership) were included as explanatory variables. To capture the opportunity to access and use of the fund's web portal two dummy variables were included. The first reflects if the member had no web access available through their membership period (No Web Access) and the second reflects if they had web access and used it (Access, Web User). The omitted category are those who had access but had not used the web. Additionally, fixed effects were included for state of residence of the participant, though results are not tabulated here. To explore moderation of effects, Age, Gender and Account Balance were interacted with each other in the estimation. Finally, residuals were allowed to cluster by sub-plan membership.

4.2.1 Marginal effects – direction of influence

Table 2 presents a summary of marginal effects of variables calculated at mean values of remaining variables. It is helpful when considering the relative size of these marginal effects to compare the baseline predicted probabilities of being in each group. These predicted probabilities are reported in Table 2 in the first row of each predicted outcome. The most likely group for a member, conditioned on the mean value of all variables, is the Not Called group at 50 percent. The Called Once and Called Average have similar probabilities at 22 percent and 25 percent respectively. The Called Frequently group has the lowest probability at 2 percent. Notice, of the independent variables, all were significant at the 0.05 level except for being Male in the case of the Called Frequently group.

[Insert Table 2 About Here]

A gender effect is observable for three of the four calling groups. Males were approximately 4.7 percentage points more likely to be in the Not Calling group and less likely to be in the Called Once (1.5 percentage points) and Called Average (3.0 percentage points). However, no gender difference was observed for being in the Called Frequently group. The marginal effect of length of membership (Membership) had expected signs consistent with its inclusion as an "exposure" control. That is, those who have been in the fund longest were more likely to be in the Called Average and Called Frequently groups and less likely to be in the Not Called group. Member age was positively (negatively) associated with being in the Called Average or Called Frequently (Not Called or Called Once) groups. However the magnitude of this effect is small with a one-year increase in member age increasing the likelihood of being in the Called Average and Called Frequently groups by 0.2 and 0.1 of a percentage point respectively. Member salary and balance both have a positive association with being in all three calling groups and negative association for the Not Called group. The magnitudes are however small. For example, a one unit change in the natural log of salary increases being a one-

time caller by 1.0 percentage point, an average caller by 3.0 percentage points and a frequent caller by 0.5 percentage points. The increase in salary reduces the probability of not calling by 4.4 percentage points. A similar change in average account balance reduces the probability of not calling by 6.6 percentage points, and increases the probability of calling an average number of times by 5.4 percentage points. The probability of being in the Called Once group, is increased with member balance but the effect is small in magnitude. Considering the overall prediction of being a frequent caller (2.0 percent) the marginal effect of 0.7 percentage points was relatively large. The availability and access to the web portal was a significant explanatory variable of calling behaviour. Not having access to the web portal reduced the likelihood of not calling, relative to those that had web access and did not use it. Accessing the fund web portal reduced the probability of not calling by 30 percentage points, but increased the probability of calling once (4.5 percentage points), calling an average number of times (22.4 percentage points) and 3.8 percentage points for calling frequently.

4.2.2 Interaction of gender, balance and age on calling behaviour

The estimation allows investigation of how the marginal effects on the probability of a member being in a calling group interact by gender, age and average balance. These are best considered graphically as presented in Figure 3 to Figure 5. Figure 3 highlights that the increased likelihood of males not calling is constant by age for those with the smallest balance. The gender effect is less evident for younger members with larger balances and the gender difference is more homogenous across balances for older members. A significant negative marginal effect for males being in the Calling Once category is isolated to those with the lowest balance, consistent for all but the oldest members. In contrast, the negative male marginal effect for the Called Average group is more homogenous across the other balance levels and age levels. The marginal effect of males on being in the Called Frequently group is not evident for any age for the lowest balance level. A negative marginal effect emerges for older members and in turn larger for larger balances.

Figure 4 identifies that the marginal effect of age on the probability of being in either calling group is not moderated by gender with the exception of the Called Frequently. Here, the age effect is lower for males with the largest balance. Overall, the impact of age is significantly moderated by member balance. The marginal effect of age on probability of not calling is significantly lower for those with the lowest balance. It is only those with lower balances that the negative marginal effect of age is significant for the Not Called group. The marginal effect of age on being in the Called Once group is negative for all balance levels but largest for those with higher balances. The positive marginal effect for age for being in the Called Average group is positive for the two lowest balance levels only.

The Called Frequently group is notably different in the role of age and balance. The marginal effect of age, shown in increases with member balance and although there is evidence of variation by gender, this is only significant for the larger balances. Figure 5 confirms this by presenting the marginal effect of balance as larger for older members, moderated by gender for those with the largest balance. A final comment for the Called Frequently group is the marginal effect of being a user of the fund web portal. The marginal effect is positive but not as strong as for those in the Called Average group which suggests differing roles or motivations. It may be that those in the Called Frequently group are seeking not just information but the personal link of the phone call, evidenced by the web role as being less influential.

4.2.3 Economic magnitude of effects on calling behaviour

To provide a better idea of the magnitude of the marginal effects and interactions, predicted probabilities were estimated for various combinations of gender, age and balance with all else held at mean values. In terms of being in the Not Called group a 51 percent probability is estimated for a 33 year old female member, with a balance of approximately \$13,000. Contrast with a 50 year old female member with a \$100,000 balance the probability is 31 percent of not having called. The equivalent male has an increased likelihood of one to three percentage points in both cases. The

same 33 year old, female member with a \$13,000 balance is estimated to have equal probability of calling once or call an average number of times at 24 percent. The older and larger balance colleague is distinctly different with a 19 percent chance they would call once against a 42 percent chance they would have called an average number of times. In both classifications the equivalent male is generally three percentage points less likely. Finally, the young, low balance female member has only a one percent probability of being a frequent caller against her older and larger balance colleague who has a relatively much larger probability of seven percent. The male counterpart is similar in each.

4.3 Multivariate Analysis of Calling and Web Access Combined

The multinomial logistic formulation was also used to examine the combination of using the call centre and using the fund web portal. Four categories are identified: those that make no use of either (Not Called, No Web); those who used the call centre but not the web (Call, No Web); those who used the web but did not call (Web, Not Called); and those who used both the call centre and the web (Call and Web).

As noted above, the web facility was introduced in 2008 four years after the introduction of the call facility. As such, the empirical analysis was set beginning 2008 through to 2013. Those with a membership preceding the introduction of the web portal are not included. The same set of explanatory variables were included as in the previous analysis with the exception of membership length which was broken down into a measure of membership that preceded the introduction of the web portal (Pre-Membership), the length of membership after the introduction of the web-portal (Post-Membership), and a dummy variable to capture those who were only members since the web portal was introduced.⁸

4.3.1 Marginal effects – direction of influence

Estimated marginal effects for each category are presented in Table 3. Consistent with the previous analysis of caller behaviour, males were more likely to be in the Not Called, No Web and less likely to be in the Called, No Web groups. However, the marginal effect of males was positive for Web only, or Web and Called groups. Though in magnitude these effects are small, the overall predicted probabilities of being in the Web only group (3.28%) and Called and Web group (11.96%) need considering. Taken together the results can be summarised as suggesting a greater preference for the call centre use for female members and greater preference for web use by male members.

The marginal effect of balance and salary are larger for the likelihood of not using either (Not Called and No Web) when compared with the Not Called category of the previous estimation. Those with larger balances and higher salaries are less likely not to make use of both the call centre and the web portal. The reverse is true for likelihood of using the call centre and the web portal together (Called, Web). Member balance and salary significantly increases the likelihood of using both. Account Balance is also positively associated with being in the Called, No Web group and the Web, Not Called. In short, the more resources, the more likely the member to use the advice/information sources. Member balance, however, has a relatively larger impact for using the call centre than using the web portal.

[Insert Table 3 About Here]

4.3.2 Economic magnitude of effects on calling behaviour and web portal use

To provide a better sense of the magnitude combinations of gender, balance and age were considered, as in the previous analysis. A younger (33 year old), female member with a small

⁸/. The dummy was included to account for the fact that those who joined a sub-plan after the introduction of the web portal would have censored observations (ie, 0 years) for Pre-Membership length.

(\$13,000) balance has a 44% probability of not using either the call centre or web portal. If the balance was instead \$100,000 the probability drops to 23 percent. For males, the same comparison yields 47 percent and 24 percent respectively. Looking to predict those who use both the call centre and the web, the younger, female member with a small balance has a 10 percent probability compared with 20 percent probability for the equivalent member with a large balance. For males, this relative difference is the same at 12 and 26 percent respectively. Size, balance, matters to whether a member uses the call centre and web portal.

Finally, age appears to have a differential role. For example, a young (33 year old), low balance, female member has a 43 percent probability of being in the Called, No Web group. The equivalent 50 year old member has a 48 percent probability. The same comparison for the Web, Not Called group yields 2.9% for the younger member and 2.6%, for the 50 year old member. Older members have a greater likelihood of using the resource but more so for the call centre.

5 Reform of the Policy Framework

The compulsory Australian superannuation system was introduced in the mid-1980s as part of macroeconomic stabilisation package aimed at dampening wage inflation and promoting saving by working men and women (Clark 2013). So significant was this initiative that, by the end of 2014, the accumulated pool of pension saving has become one of the most important markets for financial services in the world. On occasion, however, the government of the day has sought to 'reform' the system including the tax treatment of superannuation contributions and benefits. In the 2006/2007 budget the federal government announced its intention to "simplify and streamline superannuation" releasing a consultation document on the topic in May 2006. By December 2006, the government had introduced legislation in federal parliament which received Royal Assent on 15th March 2007— it came into effect on July 1st, 2007.⁹

Of the various provisions included in the Act, aged-based provisions regarding the tax treatment of superannuation savings and benefits were modified with provisions set according to different levels of pension savings and benefits. So, for example, the government introduced different levels of tax applicable to superannuation contributions at AUS\$50,000 per person per annum, \$100,000 per person per annum, and at \$150,000 per person per annum. The age-based deduction limit was abolished, and people under 65 years of age were permitted to bring forward three years of contributions amounting to \$450,000. Superannuation benefits paid as a lump sum or as a pension were to be treated as tax-free for people aged 60 and over and benefits paid to people under 60 years of age were provided with a tax-free and a taxable component. The legislation "encouraged (people) to transfer money into superannuation early in (their) working life rather than leaving (it) until the last few years of their working life (Fernandez 2007).

Notice, the government gave notice of its intention to do so more than a year before the implementation of its legislation on July 1st 2007. Furthermore, public commentary on its intentions, the likely component parts of the legislation, and the implications of the legislation for current working men and women was widespread and punctuated by events that brought the issues before the public. Superannuation funds, their agents, and financial advisers also publicised the changes. By this account, information on the reform of the policy framework was more likely 'ubiquitous' rather than 'discrete' with implications for those interested in making provision for their imminent retirement and those planning for retirement sometime in the future. It is arguable that these provisions were most relevant to those aged 60 years or over (contemplating imminent retirement) and those aged 50 years or over (planning for retirement). For the first group, these changes could

⁹/. Commonwealth of Australia, Tax Laws Amendment (Simplified Superannuation) Act 2007.

have affected retirement decisions (discrete decisions) whereas for the second group these changes may have prompted making a series of changes over the longer term.

5.1 Calling frequency and moments

With respect to the pattern of advice-seeking by participants in the Mercer Super Trust sub-plans, it has been noted that the single most important spike in call volume occurred in the three weeks prior to July 1st, 2007 and the day immediately following that date. Notwithstanding the onset of the global financial crisis in 2008 and 2009, this single event stands out as exceptional in relation to the entire period 2004 – 2013. See Figure 2. Here, then, is a test of the robustness of previous findings as regards the status and relative significance of various predictors of advice-seeking behaviour. Notice, web enquiries were not relevant in this case because the web facility had not yet been introduced.

Having established the call ‘window’ as June 12th through to July 2nd 2007, those that called before the July 1st moment were deemed *leaders* and those that called after that moment were deemed *followers*. Excluded were frequent callers who might have called anyway (2387), and excluded those that called both before and after the July 1st moment within the call window (51). This left 7710 leaders and 437 followers.

Within the window, the period leading up to the July 1st moment was obviously far longer than the period immediately following that date. Also, there were many more callers before the moment than after the implementation date of the legislation. Consideration was given to the gender, age, sub-plan experience, account balance, salary, and salary sacrifice commitment of leaders and followers. Close inspection suggested that there were no differences between the average gender, age, membership period, and salary sacrifice commitment of leaders and followers. However, tests for differences amongst leaders and followers in terms of the distribution of participants around the mean of each variable established that there were statistically significant differences between leaders and followers on age (nonparametric and parametric) and salary (nonparametric only). It would seem that leaders and followers came from the same sample on gender, account balance, experience in the sub-plan, and salary sacrifice. See Table 4 below.

[Insert Table 4 About Here]

5.2 Estimated model – call behaviour (window and non-window)

A logistic model was estimated for the entire period leading-up to June 12th, 2007 and (separately) through the period of the ‘window’ June 12th–July 2nd, 2007. At issue, as in the previous analysis, was the probability of calling against the base case of not calling as determined by the independent variables. In this case, for consistency frequent callers were excluded from both samples and overlapping callers were excluded leaving 89,584 pre-window callers and 10,516 window callers. The results for this analysis are summarised in Table 5. It is shown that gender, age, account balance, salary and membership period were significant for both samples, a finding broadly consistent with the findings on the type of caller against the base case. Notice, however, the gender, account balance, salary, and years in the fund effects were all stronger for callers during the window than for callers over the previous period. While date of birth was significant for both samples, its effect was stronger over the previous period than through the window.

[Insert Table 5 About Here]

6 Synthesis of Results

The underlying premise the paper is that individuals seek advice when confronting an issue that is salient or, more specifically, claims their attention over and above other issues that have a claim on an individual's cognitive and decision-making resources (Bordalo et al. 2012). Following recent findings on patterns of retirement planning and saving for the future, it was hypothesised that a person's age or stage in the life-cycle may prompt advice seeking when confronting an issue that is especially pertinent to their immediate prospects. It was also suggested that individuals are more likely to seek advice when their material well-being is in play, even if expressed in nominal terms. Drawing upon findings in cognitive psychology, it was suggested that we should expect that gender differences in risk aversion or tolerance may well translate into differential rates of advice-seeking where, all things being equal, women are more likely than men to seek advice.

In the Australian case, at least, information about pension saving, the performance of pension institutions, and the policy framework underpinning the system can be reasonably characterised as ubiquitous. The volume of information publicly available about these issues is voluminous and growing. As such, it was suggested that advice-seeking is more likely concerned with sorting amongst information and assessing various options than searching for information per se. Here, we utilised a database on approximately 590,000 individuals, participants in the Mercer (Australia) Super Trust over the period 2004 – 2013 to test whether our propositions regarding the motives driving advice seeking is supported by the evidence. We considered the determinants of advice seeking (or not advice seeking), the significance of using the call centre, the web facility, both, or neither, and whether our findings for the entire period also held for a specific event which was the most significant spike in advice seeking (calling) over the entire period. It was entirely possible that advice-seeking during the singular event was 'different' than advice-seeking over the entire period.

So as to provide an integrated account of our findings, let us begin with the simplest representation of the issue: the probability of not calling, calling once, being an average caller, or being a frequent caller. Against the base case of calling once, it was shown that being male increased the probability of not calling (conversely being female increased the probability of calling), just as being younger than older increased the probability of not calling, whereas having a larger than smaller account balance increased the probability of calling. In terms of being an average or frequent caller, the parameter on gender was consistent as above. In terms of the size of the effect, it was shown that an increasing account balance and increasing years in the fund increased the probability of being both an average and frequent caller whereas the salary and age effects were less important although with the expected signs on the parameters. The size of an account balance and membership period increases the probability of being a frequent caller.

When the web portal option was introduced to the model and a multinomial logistic model was estimated to examine the combination of using the call centre and the web facility, it was shown that the gender effect was consistent with the analysis of the call centre. Men were more likely to be in the Not Called, No Web group and less likely to be in the Called, No Web group even though the male effect was positive for the Web Only and web and Called groups, thus showing a higher propensity to use the call facility for female members as opposed to the preference for the web portal shown by male ones. As expected, being younger rather than older increased the probability of being a web user over a caller. That is, being a web-user stands in place of being a caller. When compared with the Not Called category of the previous analysis the effects of salary and account balances for the Not Called, No Web are larger. Higher salaries and balances increase the likelihood of using both the web and the call centre together, while decreasing the probability of not using both. Account balance generally showed, however, a larger effect with respect to salary. It was also shown that having a higher than lower account balance increased the probability of being a web user and a

caller, although it is notable that it is more powerful than the account balance effect in relation to being a web-user.

This brings us to the singular event; that is, the pronounced spike in call activity when considered over the entire period. Through the period 2004 – 2008 participants could only call if they needed advice. The web facility was introduced in the second half of 2008. The spike in call activity occurred in June 2007, foreshadowing a significant change in the federal government's tax treatment of superannuation saving and benefits effective July 1st, 2007.

In the first instance, we sought to determine whether there was an appreciable statistical difference between those that called within the window leading up to June 30th 2007 and those that called immediately after. The key finding was that there was no difference between those that called before and those that called after except that the volume of calls immediately prior to the introduction of the new tax regime was far and away much larger than the volume of calls immediately thereafter. Here, being male decreased the probability of calling while, conversely, being female increased the probability of calling. The gender effect swamped all other effects.¹⁰ The account balance effect was less important than experience in the fund compared to previous findings over the entire period (with or without the web-user factor). Likewise, being older than younger was less important. Having a higher salary than a lower salary was more important in this episode than over the entire period.

There is a measure of continuity joining the entire period with the spike in call activity. However, it is notable that the spike in calls virtually doubled the volume of calls during the month of June 2007 compared to the base line trend in calls over the entire period. As indicated above, when considered over the entire period the single largest component in the variance of calling was actually the day in the week followed by a seasonal effect; there were, in fact, few other such identified spikes. Furthermore, recognising that the gender effect appeared and reappeared through the entire analysis with different levels of significance, during the singular episode the gender effect was pronounced. Whereas the account balance effect was often the most important or second most important effect in findings prior to the singular event, it was the salary effect that dominated during the spike. On these counts, it is arguable that the singular event was actually 'different' than the patterns observed over the entire period.

It can be argued that the evidence on patterns of advice-seeking across the entire period with respect to calling versus not calling, calling versus not calling with or without the web facility, not calling, being an average caller or a frequent caller against calling just once, can be explained by reference to the issue of salience, stage of life-cycle, and material well-being. The variables representing these issues are, perhaps, more precise than the larger phenomena underpinning the theoretical and experimental research that underpins their significance. At the same time, the spike in calling would seem to warrant deeper analysis than that shown above.

7 Conclusions

Two key points should be made before considering in detail the implications of these findings. First, our study of advice-seeking behaviour is set in an institutional context that participants believe is at least benign (unsullied by a commercial interest in giving advice) or, more likely, supportive of

¹⁰/ Note, our findings on gender hold even if the incentive effects of a large account balance are held in abeyance. Being a woman increased the probability of seeking advice over the entire period and, especially, during the 'window' containing the influence of the change in the tax treatment of superannuation benefits. We were not able to establish statistically significant interaction effects between participants' gender, account balances, and experience (time in the fund). See, by contrast, the experimental findings of Fryer et al. (2007).

participants' decision-making (being a 'service' provided by the sub-plans sponsors' agent). Second, in large part, it is reasonable to suppose that advice-seeking is not an instance of 'primed' behaviour—that is, in some way encouraged or induced by the sponsors' agent. As such, observed patterns of advice-seeking should be seen as voluntary.

Overall, it was found that the predictors of advice-seeking were gender (female rather than male), age (older than younger), account-balance (larger than smaller), and experience-related (longer rather than shorter). Across a range of issues, the same variables tended to be more or less significant than others, have the expected sign on the parameter, and be applicable to those issues. Note, the significance of the gender effect – women more than men tended to seek advice although this effect was somewhat less evident once the web-based facility was introduced (the web-facility drew in younger male advice-seekers than the call facility).

The paper began with a discussion about the nature of retirement planning and decision-making, and the nature of the information available when making those types of decisions. Perhaps unlike many other types of decisions, it is reasonable to suppose that this type of decision is "continuous" in the sense that it can be done or contemplated every day of the year up until retirement. Likewise, it is reasonable to suppose that the information available in making this type of decision is, in the Australian case at least, "ubiquitous". That is, available virtually cost-free every day of the year. And yet, in this case as in most other cases involving DC pension plans, most people, most of the time, do not make a pension 'decision' and do not seek advice. In fact, the evidence indicates that a minority sought advice over the period 2004-2013 and of those that sought advice a majority sought advice just once during their time in the Mercer Super Trust. Furthermore, comparing advice seekers to non-advice seekers, those that sought advice were a special segment of the Super Trust participant—those that had an immediate and substantial stake in the performance and structure of the superannuation system (the salience hypothesis confirmed).

At one level, these results are entirely expected. By convention, we have come to expect that most DC plan participants are 'passive' participants (Samuelson and Zeckhauser 1988). But our results are, nonetheless, surprising in that those that sought advice during the window containing the implementation of changes in the federal government's superannuation tax regime (June-July 2007) did so as the window closed, not when these changes were first mooted, or when legislation was passed. In effect, they waited to the last moment to seek advice. Why procrastinate? Why wait until the last moment to seek advice? Here, two possible explanations appear relevant. First, whereas we conceptualised retirement planning and saving for the future as a "continuous" decision situated in a world of ubiquitous information, it could be the case that, notwithstanding the opportunity to act continuously, most participants treat these types of decisions as 'discrete' in the sense that they only pay attention when an issue arises that is so significant that it "activates" attention. Second, in any event, given the flow of information about the changes in policy regarding the tax treatment of superannuation contributions and benefits, most people realised they could, in fact, wait until the last moment before considering its implications.

The first explanation can be buttressed by recent research in cognitive science to the effect that many people compress complex issues, spread over time, into distinct issues, amenable to routine treatment up until these type of decision-making procedure appears unable to deal with the specifics of the issue. In other words, the logic of the issue is deliberately violated so as to economise on effort (over time). Where an issue is presented that would seem to demand effort (because it falls outside of the parameters of the decision-rule), those that put in the effort appear to be those for whom the issue is most salient.

Our results provide, insights into mobilising the interest of pension-plan participants. For instance, the finding that web-users are younger, have lower account balances, and have less experience in pension plans implies that this is a 'pathway' that could be utilised by sub-plan sponsors and agents to encourage participants to take advantage of the advice facility. Similarly, the significance of gender (being female) suggests that female participants could also be brought into affinity groups (stratified by account balance, experience, etc.) with issue-specific foci. Likewise, bringing in men into the equation would seem to need a distinctive strategy, rather than a generic strategy. While our results are simply a first step in better understanding the patterns of participant-initiated advice-seeking, these results suggest that mobilising participants may be more successful around specific topics than the (more) abstract notion that retirement planning and saving for the future is salient to all participants whatever their circumstances.

8 Bibliography

- Agnew, J.R., Anderson, L.R., Gerlach, J.R., and Szykman, L.R. 2008. Who chooses annuities? An experimental investigation of the role of gender, framing, and defaults. *American Economic Review* 98: 418-22.
- Ainslie, G. 2001. *Breakdown of Will*. Cambridge: Cambridge University Press.
- Australian Government. 2010. *Review into the Governance, Efficiency, Structure and Operations of Australia's Superannuation System*. Final Report [The Cooper Review]. Canberra.
- Barberis, N. 2013. The psychology of tail events: progress and challenges. *American Economic Review* 103: 611-16.
- Baron, J. 2008. *Thinking and Deciding*, 4th ed. Cambridge: Cambridge University Press.
- Benartzi, S. and Thaler, R. 2005. Save more tomorrow: using behavioral economics to increase employee savings. *Journal of Political Economy* 112: 164-87.
- Blinder, A.S. 2014. *After the Music Stopped*. New York: Penguin Press.
- Bordalo, P., Gennaioli, N., and Shleifer, A. 2012. Saliency theory of choice under risk. *Quarterly Journal of Economics* 1243-85.
- Campbell, J.C., Jackson, H., Madrian, B., and Tufano, P. 2011. Consumer financial protection. *Journal of Economic Perspectives* 25:91-114.
- Chang, S-S., Stuckler, D., Yip, P., and Gunnell, D. 2013. Impact of 2008 global financial crisis on suicide: time trend study in 54 countries. *British Medical Journal* 347:1-15.
- Clark, G.L. 2012. From corporatism to public utilities: workplace pensions in the 21st century. *Geographical Research* 50: 31-46.
- Clark, G.L., Caerlewy, E., Marshall, J.C. 2009. Solutions to the asset allocation problem by informed respondents: the significance of the size-of-bet and the 1/n heuristic. *Risk Management and Insurance Review* 12: 251-71.
- Clark, G.L. and Monk, A.H.B. 2007. The 'crisis' in defined benefit corporate pension liabilities. *Pensions: An International Journal* 12(1): 43-54 and 12(2): 68-81.
- Clark, G.L., Strauss, K., and Knox-Hayes, J. 2012. *Saving for Retirement: Intention, Context, and Behaviour*. Oxford: Oxford University Press.
- Clark, G.L. and Urwin, R. 2011. DC pension fund best-practice design and governance. *Benefits Quarterly* 27(4): 39-49.
- Daniel, K., Hirshleifer, D., and Subrahmanyam, A. 1998. Investor psychology and security market under- and overreactions. *Journal of Finance* 53: 1839-85.

- Doherty, M. E. 2003. Optimists, pessimists, and realists. In *Emerging Perspectives on Judgement and Decision Research*, edited by Schneider, S.L. and Shanteau, J. Cambridge: Cambridge University Press, pp. 643-79.
- Feng, J. and Gerrans, P. 2014. Patterns of voluntary worker retirement savings: a longitudinal analysis. Stream 3: Better Superannuation Outcomes. Melbourne: Monash-CSIRO Superannuation Project.
- Fernandez, P. 2007. The benefits of simplified superannuation reform. *Legal Issues in Business* 9: 71-76.
- Fryer, R.G., Levitt, S.D., and List, J.A. 2008. Exploring the impact of financial incentives on stereotype threat: evidence from a pilot study. *American Economic Review* 98: 370-75.
- Gabaix, X. and Laibson, D. 2006. Shrouded attributes, consumer myopia, and information suppression in competitive markets. *Quarterly Journal of Economics* 121: 505-40.
- Gabaix, X., Laibson, D., Moloche, G. and Weinberg, S. 2006. Costly information acquisition: experimental analysis of a boundedly rational model. *American Economic Review* 96: 1043-68.
- Gigerenzer, G., Todd, P.M., and the ABC Research Group. 1999. *Simple Heuristics That Make Us Smart*. New York: Oxford University Press.
- Jones, M. and Love, M.S. 2011. Bayesian fundamentalism or enlightenment? On the explanatory status and theoretical contributions of Bayesian models of cognition. *Behavioural and Brain Sciences* 34: 169-187; 215-31.
- Kahneman, D. 2011. *Thinking Fast and Slow*. London: Allen Lane.
- Kahneman, D. and Tversky, A. 1979. Prospect theory: an analysis of decision under risk. *Econometrica* 47: 263-91.
- Lo, A. 2012. Adaptive markets and the new world order. *Financial Analysts Journal* 68: 18-29.
- Lusardi, A. and Mitchell, O.S. 2007. Baby boomer retirement security: the roles of planning, financial literacy, and housing wealth. *Journal of Monetary Economics* 54: 205–24.
- Lusardi, A. and Mitchell, O.S. 2008. Planning and financial literacy: how do women fare? *American Economic Review* 98(2): 413–17.
- Lusardi, A. and Mitchell, O.S. (eds.) 2011. *Financial Literacy: Implications for Retirement Security and the Financial Marketplace*. Oxford: Oxford University Press.
- O'Donoghue, T. and Rabin, M. 1999. Doing it now or later. *American Economic Review* 89: 103-24.
- Pearl, J. 2000. *Causality: Models, Reasoning, and Inference*. Cambridge: Cambridge University Press.
- Pliske, R. and Klein, G. 2003. The naturalistic decision-making perspective. In *Emerging Perspectives on Judgment and Decision Research* edited by Schneider, S.L. and Shanteau. Cambridge University Press, pp. 559-87.

- Rook, D. 2014. Quantizing support theory. Draft Oxford: Smith School of Enterprise and the Environment.
- Schacter, D. and Addis, D. 2007. On the constructive episodic simulation of past and future events. *Behavioural and Brain Sciences* 30: 331-32.
- Shafir, E., Diamond, P., and Tversky, A. 1997. Money illusion. *Quarterly Journal of Economics* 112: 341-74.
- Sharpe, W.F. 2007. *Investors and Markets: Portfolio Choices, Asset Prices and Investment Markets*. Princeton: Princeton University Press.
- Simon, H.A. 1956. Rational choice and the structure of the environment. *Psychology Review* 63: 129-38.
- Spence, M. 1976. Informational aspects of market structure: an introduction. *Quarterly Journal of Economics* 90:488–500.
- Strauss, K. 2009. Cognition, context, and multi-method approaches to economic decision making. *Environment and Planning A* 41: 302-17.
- Taleb, N. 2007. Black swans and the domains of statistics. *The American Statistician* 61: 198–200.
- Thaler, R. and Sunstein, C. 2008. *Nudge: Improving Decisions about Health, Wealth and Happiness*. New Haven, CT: Yale University Press.
- Tversky, A. and Koehler, D. 1994. Support theory: a nonextensional representation of subjective probability. *Psychological Review* 101:547–67.
- Wagner, R. K. 2002. Smart people doing dumb things: the case of managerial incompetence. In *Why Smart People Can be so Stupid* edited by R.J. Sternberg. New Haven: Yale University Press, pp. 42-63.
- Watson, J. and McNaughton, M. 2007. Gender differences in risk aversion and expected retirement benefits. *Financial Analysts Journal* 63(4): 52-62.

Figure 1 Information and Decision Making

		Decision-type	
		Episodic	Continuous
Information-type	Discrete	A	B
	Ubiquitous	C	D

Figure 2 Monthly frequency of calls

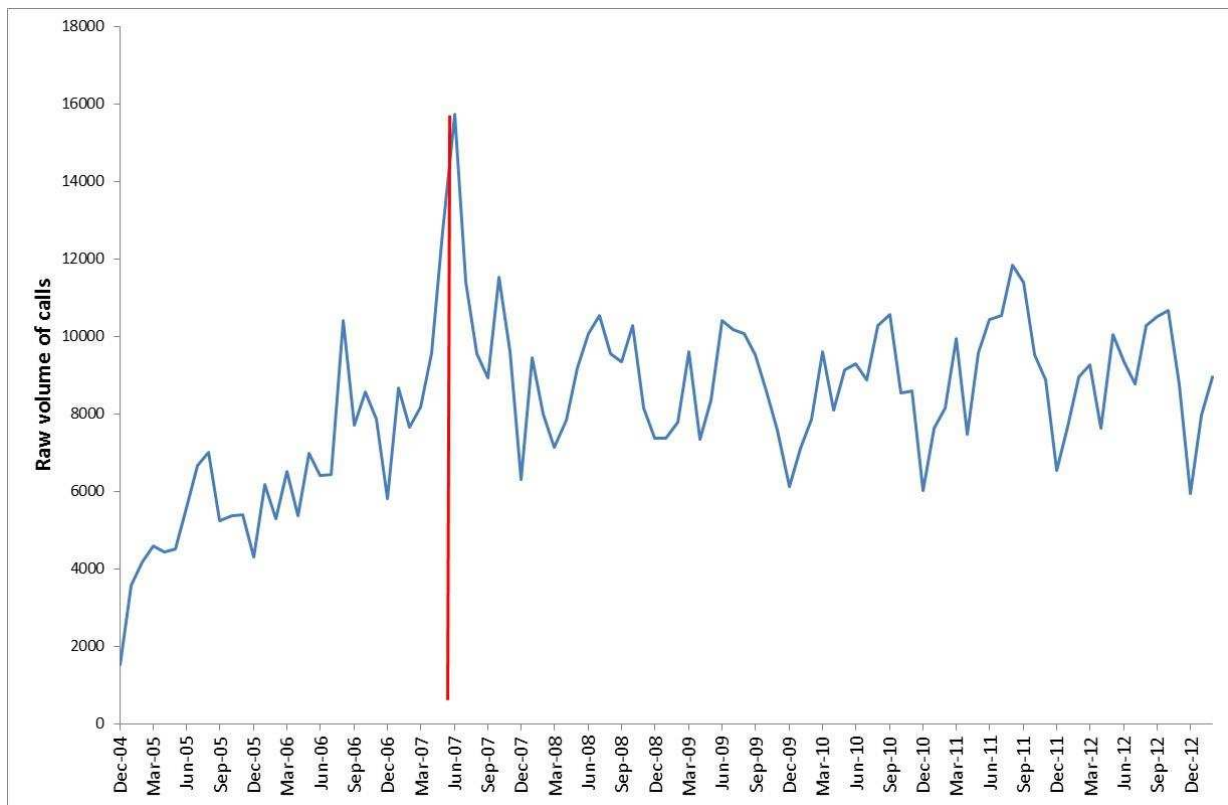


Figure 3 Gender Marginal Effects (Male) by Age, Balance on Call Behaviour

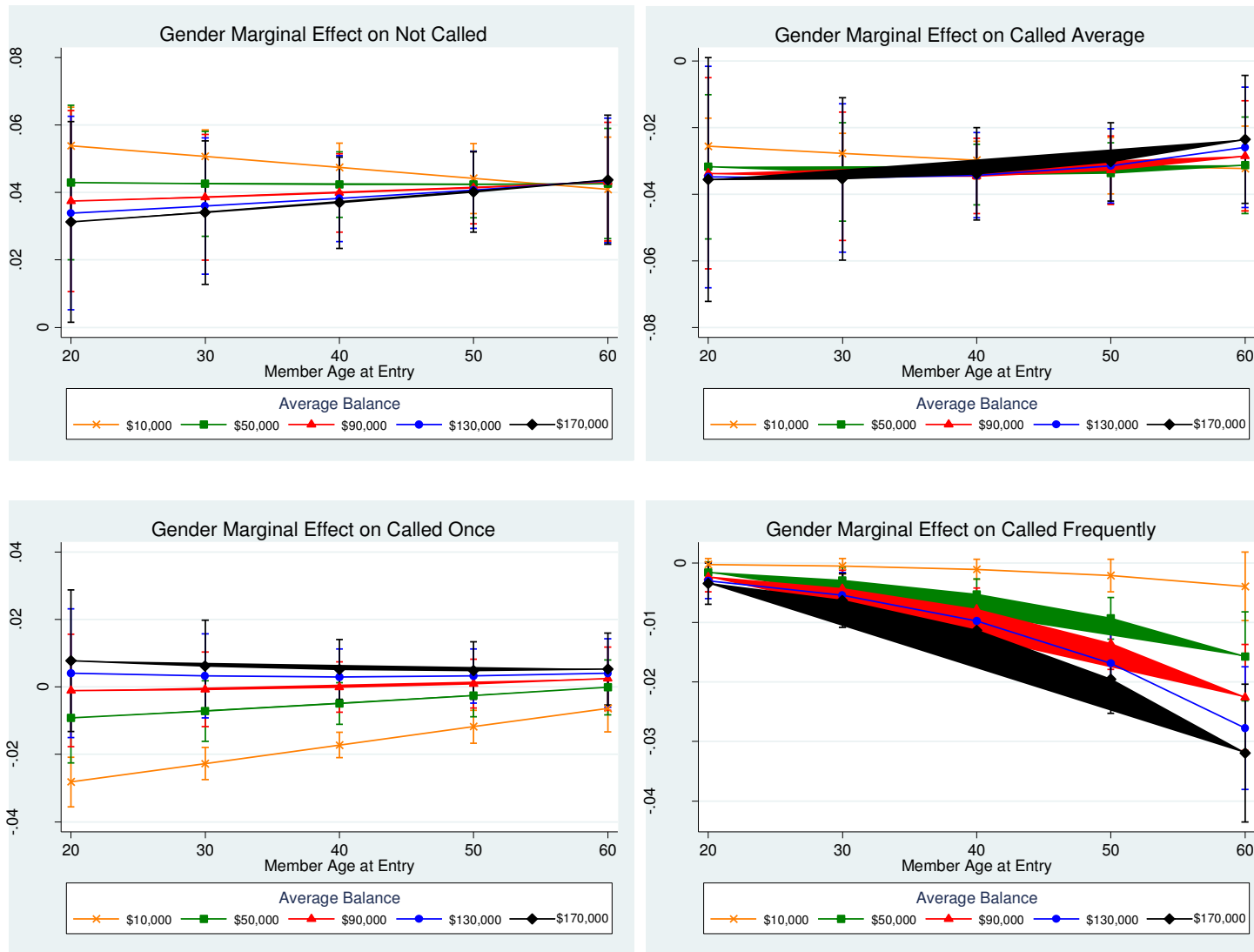


Figure 4 Marginal Effects of Age by Gender and Balance on Call Behaviour

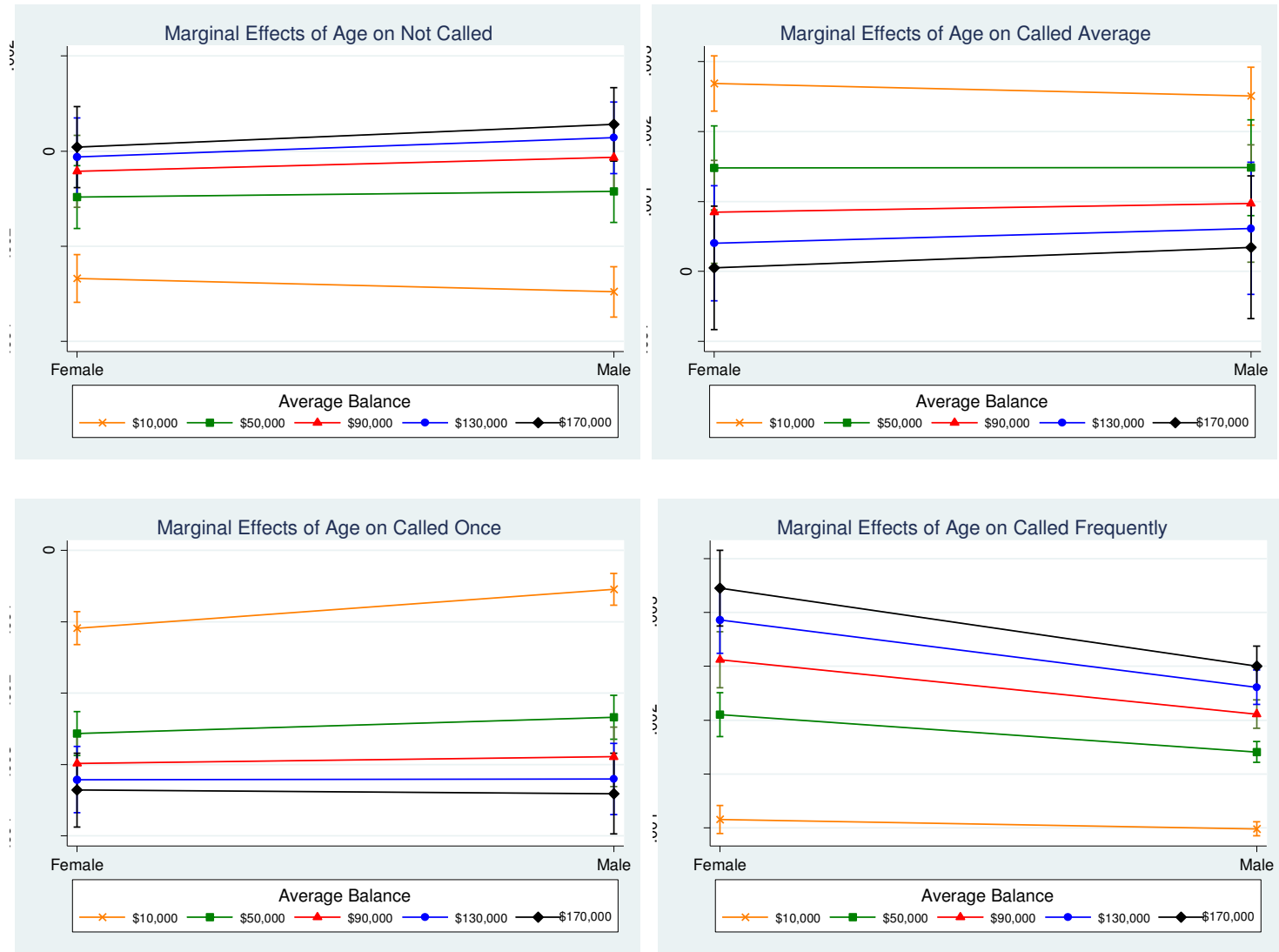


Figure 5 Marginal Effects of Balance by Gender and Age on Call Behaviour

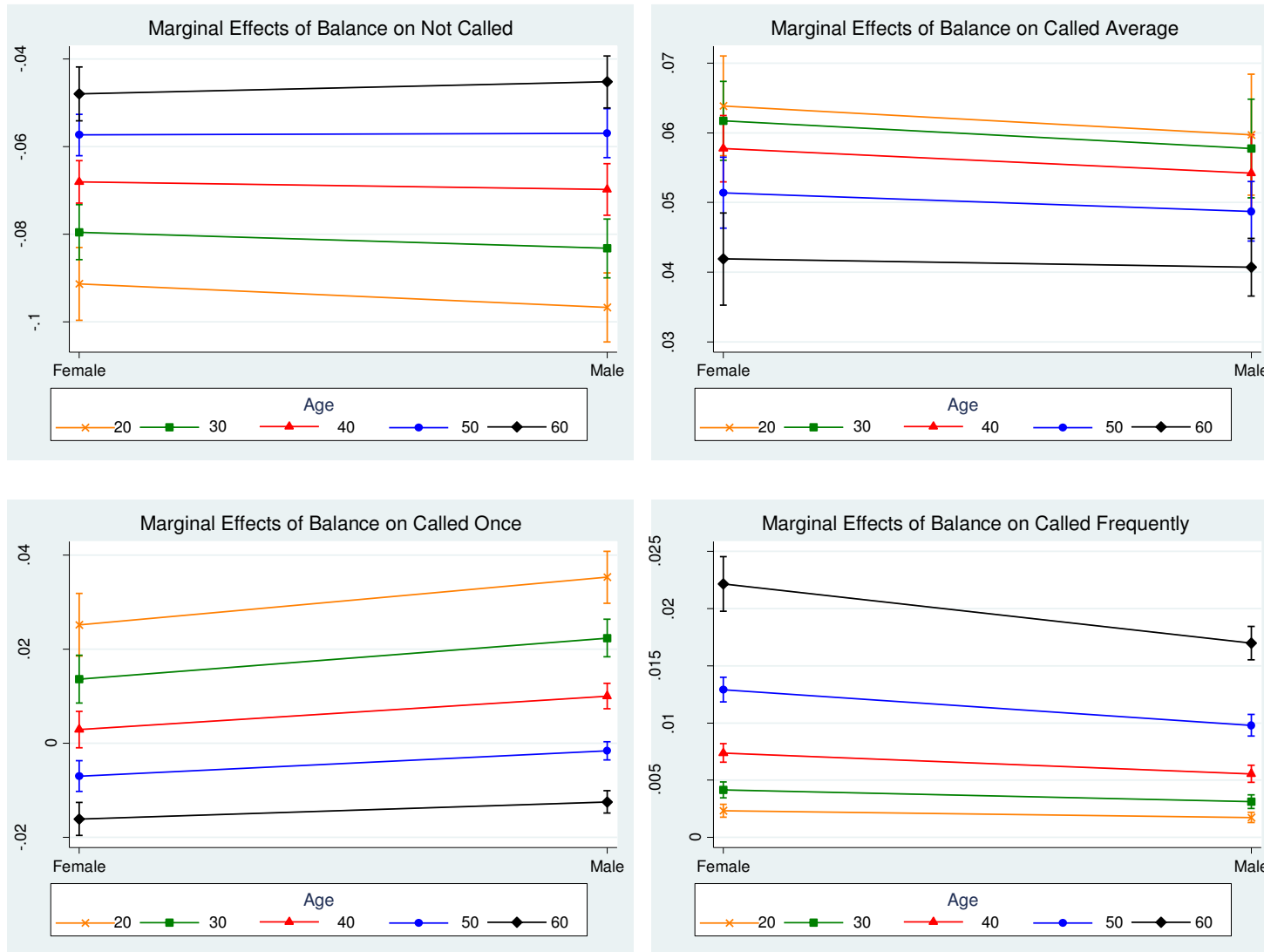


Table 1 Descriptive statistics about caller types

	n	Mean	SD	n	Mean	SD
	Not Called			Not Called and No Web		
Gender	316629	0.608621	0.48806	68708	0.62901	0.483073
Age	316629	41.76972	11.83608	68708	41.89484	10.85881
Balance	236328	29850.37	66490.45	53317	8.776886	1.763278
Salary	145593	67083.76	45928.91	19843	10.78597	0.500089
Membership	316629	2.718026	2.645591			
Membership-Pre_Web				68708	1.126854	1.782985
Membership-Post_Web				68708	3.424865	1.916961
	Called Once			Called but No Web		
Gender	97975	0.598153	0.490274	30693	0.586518	0.492466
Age	97975	43.09641	10.99577	30693	44.93425	11.14571
Balance	89206	48833.6	90725.38	28814	9.602572	1.640641
Salary	54973	77777.68	52937.09	12216	10.93591	0.55144
Membership	97975	3.981291	3.126152			
Membership-Pre_Web				30693	2.22584	2.1529
Membership-Post_Web				30693	2.54505	2.052993
	Called Average (2-7)			Web but No Called		
Gender	130549	0.623429	0.484528	146685	0.603729	0.489124
Age	130549	46.39958	11.422	146685	38.13603	11.02598
Balance	119819	78341.66	129389.2	120127	8.778825	1.843239
Salary	74623	89710.37	65024.78	83886	11.02557	0.565017
Membership	130549	4.965944	3.286594			
Membership-Pre_Web				146685	0.597307	1.503693
Membership-Post_Web				146685	4.474157	1.203818
	Called Frequently (>7)			Called and Web		
Gender	22338	0.683902	0.464962	176979	0.628504	0.483206
Age	22338	53.72853	11.3457	176979	45.2555	11.48544
Balance	19250	132721.4	192507.7	161138	10.14078	1.506887
Salary	12718	104060.1	79753.3	105069	11.18552	0.56749
Membership	22338	6.414719	3.251759			
Membership-Pre_Web				176979	1.815944	2.280829
Membership-Post_Web				176979	4.147116	1.443946

Table 2 Marginal Effects for Caller Behaviour

This table presents the marginal effects from a multinomial logit estimation of the likelihood of being in one of four calling behaviour groups: Not Called; Called Once; Average Caller; and Frequent Caller. Marginal effects are for a unit change in each variable at mean values of remaining variables. Group membership is estimated as a function of gender, age, balance (natural log), salary (natural log), membership length in sub-plan, and member location (state). Two dummy variables are included to capture if a member had no web access available (No Web Access) and if they had web access and used it (Access, Web User), with the omitted category those who had access but had not used the web. Additionally, gender, balance and age are allowed to interact. Dummy variables for member location (state) are included but not tabulated. Residuals are clustered at sub-plan level.

	Change in Probability	Standard Error	Z	p-value	[95% Conf. Interval]	
Predicted outcome: Not Called (50.1% probability at mean values, 50.5% sample)						
Male	0.0473	0.0036	13.09	0.0000	0.0402	0.0543
Age	-0.0026	0.0002	-11.95	0.0000	-0.0031	-0.0022
Account Balance	-0.0663	0.0025	-26.87	0.0000	-0.0711	-0.0615
Salary	-0.0445	0.0066	-6.74	0.0000	-0.0574	-0.0315
Membership	-0.0180	0.0017	-10.73	0.0000	-0.0213	-0.0147
No Web Access	-0.0860	0.0151	-5.70	0.0000	-0.1156	-0.0564
Access, Web User	-0.3072	0.0101	-30.33	0.0000	-0.3270	-0.2873
Predicted outcome: Called Once (22.3% probability at mean values, 19.1% sample)						
Male	-0.0147	0.0020	-7.43	0.0000	-0.0186	-0.0108
Age	-0.0010	0.0001	-11.56	0.0000	-0.0011	-0.0008
Account Balance	0.0047	0.0013	3.58	0.0000	0.0021	0.0073
Salary	0.0100	0.0020	4.96	0.0000	0.0061	0.0140
Membership	0.0051	0.0009	5.74	0.0000	0.0034	0.0068
No Web Access	0.0195	0.0052	3.76	0.0000	0.0093	0.0296
Access, Web User	0.0451	0.0061	7.45	0.0000	0.0332	0.0570
Predicted outcome: Called Average (25.6% probability at mean values, 26.0% sample)						
Male	-0.0309	0.0031	-9.85	0.0000	-0.0371	-0.0248
Age	0.0025	0.0002	14.16	0.0000	0.0021	0.0028
Account Balance	0.0544	0.0024	22.77	0.0000	0.0498	0.0591
Salary	0.0302	0.0056	5.38	0.0000	0.0192	0.0411
Membership	0.0109	0.0010	11.40	0.0000	0.0090	0.0128
No Web Access	0.0609	0.0095	6.42	0.0000	0.0423	0.0794
Access, Web User	0.2239	0.0057	39.56	0.0000	0.2128	0.2350
Predicted outcome: Called Frequently (2.0% probability at mean values, 4.4% sample)						
Male	-0.0016	0.0010	-1.69	0.0910	-0.0035	0.0003
Age	0.0011	0.0000	28.98	0.0000	0.0010	0.0012
Account Balance	0.0072	0.0003	20.48	0.0000	0.0065	0.0078
Salary	0.0043	0.0010	4.47	0.0000	0.0024	0.0062
Membership	0.0020	0.0002	12.48	0.0000	0.0017	0.0023
No Web Access	0.0057	0.0011	5.00	0.0000	0.0035	0.0079
Access, Web User	0.0382	0.0011	33.98	0.0000	0.0360	0.0404
N				285,268		
Nagelkerke-R ²				0.253		

Table 3 Marginal Effects for Web and Call Access Combination

This table presents the marginal effects from a multinomial logit estimation of the likelihood of being in one of four calling and web-use behaviour groups: Not Called and No Web; Called Only; Web Only; Called and Web. Marginal effects are for a unit change in each variable at mean values of remaining variables. Group membership is estimated as a function of gender, age, balance (natural log), salary (natural log), Pre-membership experience (membership length in years prior to introduction of web), Post-membership experience (membership length in years after introduction of web), and Post-Only (Dummy with value one is only became member after introduction of Web. Additionally, gender, balance and age are allowed to interact. Dummy variables for member location (state) are included but not reported. Residuals clustered at sub-plan.

	Change in Probability	Standard Error	Z	p-value	[95% Conf. Interval]	
Predicted outcome: Not Called and No Web (43.24% probability at mean values)						
Male	0.0361	0.0042	8.51	0.0000	0.0278	0.0444
Age	-0.0036	0.0002	-16.51	0.0000	-0.0041	-0.0032
Account Balance	-0.1068	0.0045	-24.00	0.0000	-0.1156	-0.0981
Salary	-0.0582	0.0107	-5.42	0.0000	-0.0792	-0.0371
Pre-Membership	-0.0007	0.0021	-0.33	0.7430	-0.0048	0.0034
Post-Membership	0.0092	0.0056	1.63	0.1020	-0.0018	0.0202
Post-Only	0.1140	0.0162	7.02	0.0000	0.0822	0.1458
Predicted outcome: Called, No Web(41.50% probability at mean values)						
Male	-0.0617	0.0039	-15.88	0.0000	-0.0693	-0.0541
Age	0.0032	0.0002	17.61	0.0000	0.0029	0.0036
Account Balance	0.0561	0.0025	22.06	0.0000	0.0511	0.0611
Salary	-0.0157	0.0064	-2.47	0.0130	-0.0281	-0.0032
Pre-Membership	0.0042	0.0019	2.19	0.0280	0.0004	0.0080
Post-Membership	-0.0418	0.0024	-17.51	0.0000	-0.0465	-0.0371
Post-Only	-0.0977	0.0082	-11.90	0.0000	-0.1138	-0.0816
Predicted outcome: Web, Not Called (3.28% probability at mean values)						
Male	0.0085	0.0015	5.67	0.0000	0.0056	0.0115
Age	-0.0003	0.0001	-4.95	0.0000	-0.0004	-0.0002
Account Balance	0.0026	0.0010	2.52	0.0120	0.0006	0.0047
Salary	0.0158	0.0020	7.97	0.0000	0.0119	0.0197
Pre-Membership	-0.0016	0.0005	-2.91	0.0040	-0.0027	-0.0005
Post-Membership	0.0091	0.0011	8.10	0.0000	0.0069	0.0113
Post-Only	0.0121	0.0025	4.83	0.0000	0.0072	0.0170
Predicted outcome: Called and Web (11.96% probability at mean values)						
Male	0.0171	0.0033	5.22	0.0000	0.0107	0.0235
Age	0.0007	0.0001	4.71	0.0000	0.0004	0.0010
Account Balance	0.0481	0.0042	11.53	0.0000	0.0399	0.0563
Salary	0.0580	0.0056	10.40	0.0000	0.0471	0.0690
Pre-Membership	-0.0020	0.0009	-2.07	0.0380	-0.0038	-0.0001
Post-Membership	0.0235	0.0027	8.88	0.0000	0.0183	0.0287
Post-Only	-0.0284	0.0085	-3.32	0.0010	-0.0451	-0.0116
n				216,998		
Nagelkerke R ²				0.273		

Table 4. Descriptive statistics: leaders vs followers

Variables	Obs.		Mean		Std. Dev.		Min		Max	
	Leaders	Followers	Leaders	Followers	Leaders	Followers	Leaders	Followers	Leaders	Followers
Male	7710	437	0.57	0.57	0.50	0.50	0	0	1	1
Year of birth	7710	437	1967	1968	11	11	1930	1930	1991	1987
Membership	7710	437	5.65	5.60	3	3	0	0	16	16
Acc. Balance	7138	390	53405	48251	98163	65751	-1963	0	3007078	470535
Year of exit	4832	272	2009	2009	2	2	2001	2004	2013	2013
Salary sacrifice	1492	63	7376	7132	11778	15298	-650	34	106237	108667
Salary	5001	294	72905	78522	66450	55643	8	12446	3184220	658313

Table 5 Logistic model estimation: comparison between the peak-window and pre-peak window period

Non -window sample							Window sample						
Caller	Coef.	Std. Err	z	P>z	[95% conf. int.]		Caller	Coef.	Std. Err	z	P>z	[95% conf. int.]	
Male	-0.185	0.012	-14.95	0.000	-0.209	-0.161	Male	-0.277	0.037	-7.51	0.000	-0.350	-0.205
Year of birth	-0.032	0.001	-58.03	0.000	-0.033	-0.031	Year of birth	-0.015	0.002	-8.46	0.000	-0.019	-0.012
Acc. Balance.	0.127	0.003	41.91	0.000	0.121	0.133	Acc. Balance	0.036	0.008	4.31	0.000	0.019	0.052
Salary	0.009	0.002	5.27	0.000	0.005	0.012	Salary	0.014	0.005	2.84	0.004	0.004	0.023
Membership	0.153	0.002	76.77	0.000	0.150	0.157	Membership	0.199	0.005	40.76	0.000	0.190	0.209
Fund	0.000	0.000	-23.22	0.000	0.000	0.000	Fund	0.000	0.000	4.72	0.000	0.000	0.000
const	61.378	1.093	56.14	0.000	59.235	63.520	const	25.323	3.582	7.07	0.000	18.303	32.343

