The Downside of Defaults

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Abstract: The use of default options to influence retirement saving behavior is often portrayed as a Pareto improvement because it guides behavior without constraining individual choice. When defaults are irreversible, however, the welfare implications of defaults depend critically on why individuals default. We examine the active versus passive behavior of participants in a large public retirement plan when faced with a choice between defined benefit and defined contribution plans. We document substantial heterogeneity in the self-reported reasons for default, with substantial fractions of the population citing each of the major hypothesized reasons for defaults, including information problems, complexity, procrastination, endorsement effects, and deliberate defaults (i.e., those who consciously chose to default because the default plan was their preferred option). We show that participants who default are substantially more likely than active choosers to regret their plan selection, even relative to those who actively chose the same plan. We find that the extent of this regret varies significantly with the underlying reason for defaulting, with regret being significantly higher among those who defaulted due to information or procrastination, and significantly lower for those who defaulted deliberately.

Key Words: Default options, retirement, pensions, regret.

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I. Introduction

One of the most influential contributions of behavioral economics to business practice and public policy over the past decade has been to demonstrate the substantial power of default options in influencing human behavior. Nowhere is this influence more apparent than in the area of pension design and policy. Compelling evidence that shifts in default options dramatically increased participation and savings in 401(k) plans (e.g., Choi et al. 2002, 2004a; Madrian and Shea 2001) prompted the U.S. government to codify automatic enrollment in defined contribution retirement plans in the 2006 Pension Protection Act (PPA). In recent years, we have seen dramatic increases in the use of automatic enrollment, automatic escalation of contributions, and automatic portfolio allocation and rebalancing. There have also been calls to extend the logic of defaults to the post-retirement payout phase of retirement plans by encouraging automatic annuitization (e.g., Brown 2009; Gale et al. 2008).

The use of defaults is often portrayed as a Pareto improvement, because a well-designed default can guide individuals into making potentially welfare-improving decisions while still providing the freedom to choose. Several papers, however, have begun to explore conditions under which defaults are more or less likely to improve social welfare. For example, a number of papers have shown that poorly designed defaults can reduce welfare if employees fail to later adjust the defaults to suit their needs (Choi et al. 2002, 2004a, 2004b; Beshears et al. 2008, 2010a). Other studies have shown that optimal defaults for financial decisions can vary depending upon participant characteristics (Carroll et al. 2009; Carlin, Gervais, and Manso 2010; Goda and Manchester 2010).

While this literature has established conditions under which well-designed defaults may be optimal, we have little direct evidence on why individuals default and whether the reasons for

default lead to heterogeneity in the welfare effects of defaults. Evidence of the underlying reasons for default behavior can be important for assessing the relative desirability of alternative policies, such as whether it is better to use a default or to force an active decision.

In this paper, we use a unique data set to explore default acceptance versus active choice in a large public retirement system. We provide evidence of factors associated with the likelihood of default and the prevalence of self-reported reasons for accepting the default. We also discuss a potential downside of default – subsequent regret of the default choice, as measured by respondents' desire to make a different choice today if they could do so. The setting is the State Universities Retirement System (SURS) for the state of Illinois, which provides participants with a choice of three pension plans at the time of enrollment. One of the three plans – a traditional defined benefit plan – is the default plan for participants who fail to make an active choice within six months of the start of employment.

Our setting includes characteristics identified in prior literature as ones in which defaults may lead to suboptimal choice (Carroll et al. 2009; Carlin, Gervais, and Manso 2010): the decision is extremely complex because the three plans offer substantially different benefits and costs in both the short-run and the long-run; plan participants are heterogeneous in their demographic profiles, so different individuals are likely better off in different plans; and the financial stakes are large because the plan choice or default is a one-time, irrevocable decision that must be made in a relatively short time period. To underscore this last point, for long-service participants, the SURS retirement plan is likely to be one of the most significant financial assets that most participants will ever own because the SURS retirement plan serves both as an employer pension *and* as a substitute for Social Security (SURS-covered earnings are not taxed by Social Security and Social Security benefits are not provided on these earnings). In this

setting, even financially-sophisticated plan participants may have difficulty obtaining and properly weighting all the information about plan alternatives and their personal financial needs to make optimal choices. The time pressure to make such choices when starting new jobs and often relocating adds to the complexity (Payne et al. 1993; Benartzi and Thaler 2007).

This study makes four contributions. First, we provide direct evidence on factors that affect the likelihood that individuals will default in our high-stakes setting. We find that the likelihood of default is higher for less "sophisticated" participants – those with lower education levels, who are less confident in their investment skills, and who have lower levels of knowledge about plan parameters. We also find evidence of information problems – for example, that default is more likely among participants who were unaware they would be defaulted if they failed to make an active choice within six months.

Second, we find that participants' self-reported reasons for defaulting varies widely across the defaulting population. We find support for each of the reasons for default behavior that have been hypothesized in prior literature – decision complexity, a perception that the plan sponsor endorses the plan selected as the default, and procrastination (Beshears et al. 2008). Beyond these, we report evidence of other reasons for defaulting. Some participants cite information problems as an important reason for defaulting, while others default because they view the pension choice as being economically inconsequential. Although not widely discussed in the prior literature, we also find evidence that some defaulters are what we term "deliberate defaulters" – i.e., participants who made conscious decisions that the default plan was their best choice, and then chose to default rather than actively enroll to minimize transactions costs.

Third, we document that satisfaction with one's plan differs greatly across defaulters and active choosers. Rates of "regret" (defined as a participant indicating a preference to enroll in a

different plan if given the opportunity) are significantly higher among those who default than those who make an active choice. Specifically, over 28 percent of those who defaulted would choose a different plan, whereas less than 19 percent of those who made an active choice would do so. We also show that the likelihood of regret depends critically on the self-reported reasons for defaulting. For example, nearly half of all participants who cited "*I needed more time*" as a very important reason for defaulting subsequently regret their plan choice. In general, those citing time constraints, procrastination, and information problems/complexity are substantially more likely to regret being in the default plan than those who deliberately defaulted, those who viewed the default as an endorsement, and those who believed the pension choice was not important to their financial well-being.

Finally, we provide initial evidence of the pathways through which participants come to regret their plan selection. Rather than being driven by changes in individual circumstances or economic climate, we find that regret is frequently driven by learning. Specifically, participants who learned that others who they view as similar to themselves were enrolled in a different plan (the same plan) are significantly more (less) likely to regret their plan enrollment. We also find that participants who learn that some of their prior beliefs about their plans were incorrect are significantly more likely to regret the decision.

This paper proceeds as follows. In Section II we summarize prior literature on defaults. In Section III we provide background on the SURS retirement system, and in Section IV we describe our survey design. Section V presents results of analyses of factors associated with the likelihood of default, why participants default, and the impact of default on regret. We summarize and conclude in Section VI.

II. Prior Literature on Defaults

Early research on the power of default options for 401(k) savings plans propelled academics, policy makers, and businesses to carefully consider how the design of defaults affects behavior. Most notably, early work in the area finds that changing the enrollment procedure to one in which a participant must actively opt *out* of a plan rather than actively opt *in* dramatically increases plan participation, and that changing the default savings rate and default investment allocations increase participant savings (Choi et al. 2002, 2004a; Madrian and Shea 2001). Based at least in part on these findings, the U.S. government codified automatic enrollment in defined contribution retirement plans in the 2006 Pension Protection Act (PPA).[1] The PPA and subsequent regulatory actions have also encouraged the widespread use of "Qualified Default Investment Alternatives" (QDIAs) as default portfolio allocations, as well as the use of automatic escalation of contributions. Many financial services firms also now offer automatic rebalancing of portfolios. There have also been policy proposals to enact automatic annuitization (Brown 2009; Gale et al. 2008).

The idea that governments and organizations can (and, in the view of some, should) influence behavior through the use of defaults and other forms of non-binding approaches is often referred to in academic and popular literature as "soft paternalism" or "libertarian paternalism" (Sunstein and Thaler 2003; Thaler and Sunstein 2003, 2008). Some proponents of libertarian paternalism suggest that careful design of policies and defaults can do more to increase welfare than can providing information to increase individuals' knowledge about their choices (Sunstein and Thaler 2003; Benartzi and Thaler 2007). While pension design has been a very visible and important application of this concept, the impact of defaults on individual choice has been recognized in other domains as well, including e-mail marketing (Johnson, Bellman and

[1] Similar legislation was passed in New Zealand in 2006 and the United Kingdom in 2007 (Beshears et al. 2010b).

Lohse 2002), health care (Halpern, Ubel and Asch 2007), health club memberships (DellaVigna and Malmendier 2006), insurance (Johnson et al. 1993), and organ donation (Johnson and Goldstein 2003; Abadie and Gay 2006).

While libertarian paternalism is often portrayed as an ideological "win-win" by guiding behavior while preserving individual choice, a literature is emerging that examines some of its potentially negative consequences. For example, Glaeser (2006) points out that there is a danger of leading individuals to sub-optimal outcomes because those who design policies and choose default options likely bring their own incentives and biases to that task.[2] Even research on automatic enrollment in employer-sponsored savings plans has shown that defaults are not always welfare improving. For example, while automatic enrollment defaults can increase participation in employer-sponsored savings plans, poorly designed defaults, such as those with low savings rates and/or excessively conservative asset allocations, can reduce welfare if employees fail to later adjust the defaults to suit their needs (Choi et al. 2002, 2004a, 2004b; Beshears et al. 2008). At another extreme, Beshears et al. (2010a) examine a setting in which the default savings rate for a defined contribution retirement plan is extremely high, and find that the selected rate is suboptimal for all employees.

Recognizing that there are potential downsides to changing behavior via the design of defaults, several papers have begun to explore conditions under which defaults are more or less likely to improve social welfare. Carroll et al. (2009) contrast forced active choice, automatic enrollment defaults, and non-automatic enrollment defaults in savings plans and find that forced

[2] Glaeser (2006) also discusses a number of other criticisms and negative consequences of over-reliance on libertarian paternalism as a guide to policy, including: (i) soft paternalism can pave the way towards stricter forms of paternalism that reduce welfare by reducing individual choice; (ii) soft paternalism may rely on stigmatizing behaviors, which can then lead to negative consequences for those who choose to engage in those behaviors; (iii) relative to governments and organizations that design paternalistic policies, individuals face stronger incentives to make choices that improve their own welfare; and, (iv) paternalism often relies on persuasion, and governments and organizations have an incentive to abuse persuasion-based systems to enhance their own power.

choice is optimal when participants may procrastinate and/or have heterogeneous preferences, while automatic enrollment is optimal when participants are financially illiterate. Similarly, Carlin, Gervais, and Manso (2010) model conditions under which providing default options for financial decisions may be optimal; they find that even well-thought-out defaults can be detrimental to welfare when participants have heterogeneous attributes and less is known about them, and when the economic stakes of the decision are large. Goda and Manchester (2010) examine the welfare effects of age-based defaults, and find that varying the default option by age groups can result in welfare gains relative to a single default for all age groups.

While this literature provides insights into when defaults may or may not be optimal, there is more limited evidence on factors that influence the likelihood of default, or of the reasons individuals default. With respect to the latter, Beshears et al. (2008) propose that there are three classes of reasons that individuals may default. First, they may do so because of the *complexity* of the decision. Second, they may believe the default is a signal or *endorsement* of the best choice. Third, they may simply be *procrastinators*. A fourth possibility that is not discussed by Beshears et al. (2008) is that in some contexts, some individuals may make an active decision to choose the outcome that was selected as the default option, and then allow themselves to be defaulted to minimize transactions costs; in other words, they are *"deliberate defaulters"*. We also consider the possibility that defaulting may be optimal for individuals for whom the choice is not consequential (e.g., individuals who plan to leave an employer before being vested in a retirement plan).

There is little empirical evidence to help determine which of these reasons, if any, are important in practice, but each possible reason has different implications for the welfare of those affected by defaults, and thus for the optimal design of policy. This paper provides a start in

addressing that gap. In addition, we know of no evidence that sheds light on how default affects individuals' later perceptions of financial well-being. This is important not only for the welfare of defaulting individuals, but also for the employers who designed the default. After all, employers make significant expenditures providing non-wage compensation, and it is in their interest to ensure that individuals value these benefits at least as much as they would value comparable expenditures on wages. If they do not, the benefits organizations hope to receive from providing retirement and other benefits may not be fully realized (Gustman, Mitchell and Steinmeier 1994; Gustman and Steinmeier 2005). Thus, we also provide evidence relating to the degree of satisfaction with the current plan, and how that varies among defaulters versus active choosers.

III. Background on the SURS Retirement System

Over 200,000 current and former employees of over 65 Illinois universities, community colleges, and state agencies participate in retirement plans administered by the State Universities Retirement System of Illinois, or SURS.[3] Participants include university and college administrators, faculty members, clerical and support staff, campus police, and others. SURS withholds eight percent of a participant's salary as a contribution to his/her retirement plan. Social Security taxes are not withheld and participants do not earn credit toward Social Security benefits based on their earnings from a SURS-covered employer. The state/employer contribution for an employee varies by retirement plan type, and because all SURS participants are employees of the State of Illinois, these employer contributions are a general state obligation.

[3] This section updates a prior discussion of SURS in Brown and Weisbenner (2007) where a more detailed description of the SURS retirement plan options can be found. We note that the reduction in the number of employers from 70 (prior paper) to 65 (current figure) reflects the combining of several campuses. Most of the factual information about SURS is drawn from the SURS website (www.surs.org, last accessed 12/11/12).

From its inception in 1941 until 1997, all participants in SURS were covered by a traditional defined benefit plan. In 1997, the Illinois Legislature passed a law allowing SURS-covered employers to offer participants a choice from among three plans, and virtually all did so by 1999. Notably, an employee's choice of plan at the start of service with a SURS employer is extremely important for his/her long-term financial welfare: retirement benefits from SURS replace those from both Social Security and private pensions, and plan choice is permanent and irrevocable.

The defined benefit plan, called the "Traditional Plan," remains one of the three plan options, and is the default option for participants who do not make an active choice within six months of the date that SURS receives certification of their employment. Participants contribute eight percent of salary for the Traditional Plan, an amount that is meant to cover the employee's share of the normal retirement benefit, automatic annual increases in retirement benefits, and survivor benefits. The state's share of the normal cost of maintaining the plan has varied over time, but the Illinois legislature has a long history of under-funding the plan and thus the state contributions are rarely made in full. Benefits are paid as joint and survivor life annuities; single participants can take one-eighth of their contributions plus interest as a lump-sum at retirement in lieu of the survivor benefits. There are two formulas for calculating the annuity – a standard DB formula and a money purchase calculation – and a participant receives the larger of the two amounts (State Universities Retirement System of Illinois 2009b).[4] While the Traditional Plan is fairly generous for those who retire from the system, it is less so for those who leave early.

The second plan option, the "Portable Plan," is similar to the Traditional Plan but has a few key differences. First, if a participant leaves the SURS system before retirement and takes a refund (i.e., "cashes" out his/her pension), s/he receives a much higher refund than under the Traditional Plan. Second, those who refund from the Portable Plan receive a dollar-for-dollar

[4] The money purchase formula was eliminated for new participants in 2005.

matching contribution from the employer, whereas those who refund from the Traditional plan receive only employee, and not employer, contributions. Third, the effective interest rate for the Portable Plan is determined annually by the SURS Board of Trustees and is typically higher than the rate provided by the Traditional Plan.[5] Fourth, if a participant retires from the SURS system, the Portable benefit is paid as a single life annuity, and married participants must accept an actuarial reduction to convert it to a joint and survivor annuity. Thus, for participants who leave SURS service and take refunds, the Portable Plan is more generous than the Traditional Plan, but for those who retire from the SURS system the benefits from the Portable Plan are not as generous as those from the Traditional Plan.

The third plan option, the "Self-Managed Plan," is a participant-directed defined contribution plan that invests 14.6 to 15.1 percent of salary (eight percent from the employee and between 6.6 and 7.1 percent from the employer[6]) into a participant's account. Participants are able to choose from a variety of mutual funds and annuity contracts from Fidelity and TIAA-CREF. Upon full vesting after five years of service, a participant who leaves SURS service is entitled to a full refund of both employer and employee contributions plus investment gains/losses. Upon retirement, the participant can choose from a wide range of annuities or a lump-sum distribution.

Participants must make their choice of retirement plan within six months of the date on which SURS receives certification of employment from the employer (which is essentially the date of hire). If they do not do so, they are automatically enrolled in the default option, which is the Traditional Plan. Importantly, plan choice, including enrollment in the Traditional Plan by

[5] The Traditional Plan provides an interest rate on contributions of 4.5 percent, whereas the interest rate applied on Portable Plan funds has averaged 8.8 percent over the period from September 1989 through June 2010.
[6] The 6.6 percent rate was in effect from the plan's inception until the past few years. More recently, the rate has risen as SURS has determined that the cost of providing disability benefits to Self-Managed Plan participants was not as high as previously calculated.

default, is permanent and irrevocable.

A complete comparison of the three plans is extremely complex and involves consideration of multiple information items, some of which are not immediately evident in the basic enrollment materials. For example, a participant who leaves SURS service may take a lump-sum refund, but the difference in the refund between the Portable and Self-Managed Plans is small prior to being vested (which is less than five years for most participants in our sample) but is much larger after vesting. For participants who retire from SURS, the expected value of the Traditional or Portable Plans is higher than that of the Self-Managed Plan due to factors such as differing match rates, differing interest rate assumptions, and more generous annuitization rates in the Traditional and Portable Plans than are available in the private sector. There are also countless other complexities that make it very difficult to make an optimal plan choice.

In the face of this complexity, and in light of the fact that a one-time irrevocable decision must be made at an already-hectic time in one's life (i.e., starting a new job), this decision-making task clearly fits the definition of a complex task discussed in the academic literature. When faced with complex tasks, individuals (even those who are experts) frequently adopt simplifying decision strategies (Wood 1986; Campbell 1988; Payne et al. 1993; Benartzi and Thaler 2007; Bonner 2008). For example, an individual may select only a subset of information to consider, and the selection may not necessarily reflect the relevance of the information to the choice. They may also speed up information processing in response to time pressure, which can introduce error into the choice process. They may also adopt a simpler processing strategy, which at the extreme may be avoiding the choice all together, i.e., accepting default options (Payne et al. 1993; Benartzi and Thaler 2007; Beshears et al. 2008). For these reasons, we will pay special attention to how information problems and complexity affect default behavior in our

analysis below.

IV. Survey Design and Sample Statistics

In cooperation with administrators at SURS, we administered a web-based survey of SURS participants. The target population was current or former SURS participants with an active e-mail address on file who joined the system in or after 1999, to ensure that the participants made their SURS plan choice as new employees. SURS sent these participants an e-mail in August 2012 inviting them to participate in the survey, with a link to the on-line survey if they wished to do so. Participants received two subsequent reminder invitations in approximately two-week intervals. In total, out of 60,625 valid emails, we received 6,065 usable responses, for a ten percent response rate. SURS sent four separate invitations, one each for active choosers of each of the three plans and one for those who defaulted into the Traditional Plan. Thus, we know the actual plan choice of each respondent as listed in SURS administrative records, as well as whether the plan choice was active or by default.

As can be seen from Table 1, of our 6,065 respondents, 26.9% defaulted into the Traditional Plan, whereas 19% actively chose the Traditional Plan. About a third of the sample (33.6%) chose the Portable Plan, and the remaining 20.5% chose the Self-Managed Plan.[7] Although we rely on SURS administrative data rather than self-reported responses of which plan respondents are in, we note that this sample is knowledgeable about their plan selection. About 92 percent of respondents correctly identified the plan in which they are actually enrolled in the survey. These rates of correct plan reporting are substantially higher than the 77.1 percent found in Gustman

[7] Relative to the full universe of SURS participants who have joined the system since 1999, our sample population under-represents defaulters and over-represents active choosers. This is primarily because those who default into the system are substantially less likely to have an e-mail address on file with SURS, and thus were less likely to be solicited by the survey. Relative to the population of SURS participants who joined the system since 1999 and who had an email address on file, our sample proportions were much closer.

and Steinmeier (2005, Table 2), suggesting that SURS participants are more knowledgeable about their retirement plans than the general U.S. population.

Table 1 also indicates that although the sample is far from nationally representative, it is nonetheless diverse in terms of demographics, occupation and economic background. Not surprisingly, given that this system covers higher education, respondents are highly educated, with 62 percent holding a Master's degree, professional degree, or Ph.D. Among the remaining respondents, 10.2 percent have no post-secondary degrees, another six percent have an Associate's degree, and just over one fifth have a Bachelor's degree. Respondents also come from a range of occupations, with about 13 percent employed as tenured or tenure-track faculty, and another fourth non-tenure-track faculty. The remaining occupations are spread among academic professionals, executives, support staff, maintenance personnel, and public safety personnel. We also have substantial variation in income and household net worth.

V. Results

V.1. Factors Associated with the Likelihood of Default

We first provide evidence of factors associated with higher or lower likelihoods of default. Table 2 provides the results of linear probability models (OLS) with the dependent variable equal to 100 if respondents defaulted into the Traditional Plan and 0 if they made an active choice of plan. Thus, the coefficients reported in Table 2 represent percentage-point changes in the likelihood of defaulting.

We examine a range of independent variables. Starting with the left side of Table 2, we see that respondents who were unaware of the default provision were 12.4 percent more likely to default into the Traditional Plan. As noted in our summary statistics, nearly one-quarter of

respondents report that they were unaware of this provision, suggesting an important opportunity for SURS and participating employers to better educate incoming participants about this provision. Based on conversations with SURS, in addition to any employer-provided benefits orientations, participants typically receive an enrollment packet from SURS explaining the default provision shortly after their hire dates. If the participants fail to act, they are sent a reminder letter about 60 days prior to their default date (default occurs six months after their start date). Given the limited number of active outreaches and the fact that the last occurs two full months before the default date, it is not surprising that a large fraction of respondents report that they were unaware of this provision.

Moving down the left-hand side of Table 2, we see that risk preferences matter: respondents who are more comfortable taking risk in pursuit of returns, as well as those more willing to accept a risky lottery over future earnings, are less likely to default. We also find that respondents are more likely to default if they have a lower assessment of their own investment skills: those who rate their skills slightly or much better than average are five percentage points less likely to default relative to those who rate themselves below average.

Like most defined benefit plans, the Traditional Plan has benefit accruals that are steeply back-loaded, meaning that the plan is especially attractive to participants who intend to remain with their SURS-covered employer for a long time. Consistent with this, respondents who, at the time of joining SURS, thought it very or extremely likely that they would work for SURS for the rest of their career are six percentage points more likely to default into the Traditional Plan.

Although not the main focus of this paper, we note that SURS has one of the lowest funding ratios of any public plan in the nation, owing primarily to the state's failure to make its actuarially-required contributions in most years. Talk of pension reform has been ongoing in the

state for several years. As such, over 70 percent of respondents indicate that they are "*not at all confident*" in the Illinois legislature, the body responsible for funding decisions. These respondents are three percent less likely to be defaulted than those who have at least a slight degree of confidence.

We turn next to general and SURS-specific knowledge. Those with a Ph.D. are 7.5 percent less likely to default. Interestingly, we find no significant differences based on whether the participant has general knowledge relevant to plan choice, measured as a degree work experience in finance or business. We do, however, find differences in the likelihood of default based on SURS knowledge. We code respondents as having "basic SURS knowledge" if they know both that they do not participate in Social Security and that they contribute in the range of six to ten percent of salary as an employee contribution (the actual number is eight percent). We code respondents as having "specific SURS knowledge" if they are able to correctly answer two questions about the relative generosity of the three SURS plans under different sets of circumstances related to job tenure. We find that respondents with basic SURS knowledge are 3.5 percent less likely to default, and those with more detailed knowledge are nearly seven percent less likely to default.

Of the array of demographic characteristics, the only significant factor is that female respondents are 3.4 percent less likely to default. We do not find differences in the likelihood of default based on age, marital status, number of children, or self-reported health status. The only occupational category that is statistically significant is tenure-track (but not yet tenured) faculty, who are 5.8 percent less likely to default. Given the uncertainty surrounding the granting of tenure, this is not surprising since both the Self-Managed and Portable Plans are vastly superior to the Traditional Plan in the event a participant must leave the system if not granted tenure.

Respondents earning over $100,000 annually are less likely to default than those earning lower incomes, although this effect is only marginally significant for those earning $100,000 to $120,000, and insignificant above $120,000. We find a significant strong wealth gradient, with the probability of defaulting falling as wealth increases. At the high end of the wealth scale, those with net worth of $500,000 or more are 11.6 percent less likely to default. We note that the overall R^2 of the regression model is 11.8 percent, suggesting that standard demographic and financial measures do not account for a large share of the variation in this decision.

Overall, data in Table 2 indicates that the probability of default is inversely related to financial sophistication and wealth. More highly educated participants, those with more confidence in their investment skills, those with more plan-specific knowledge, and those with a higher net worth are all substantially less likely to default.

V.2. Self-Reported Reasons for Default

The welfare implications – and by extension, the policy implications – of default behavior depend critically on *why* individuals default. As noted above, Beshears et al. (2008) propose three reasons that default options may be so powerful in influencing behavior – complexity of the decision, endorsement effects, and procrastination. In addition, we hypothesize two other potential reasons for defaulting. First, some individuals are "deliberate defaulters" – i.e., they determine that the default option is the one best suited to their preferences and choose to default to minimize enrollment effort. Second, some individuals may view the choice as inconsequential and thus do not make a decision; this could reflect either poor information (e.g., they wrongly conclude that the alternatives are not very different), or it could be a reasonable response (e.g., they know they plan to leave SURS before being vested). In our setting, knowing *why*

individuals default is important for determining which policy responses, if any, are appropriate. For example, to the extent that information problems drive default behavior, SURS and/or the employers participating in SURS could invest in better education and outreach. If procrastination is an issue, then a "forced choice" might be appropriate (e.g., withholding a paycheck until a participant makes an active selection). In contrast, if most participants who defaulted did so deliberately, then no further interventions may be warranted.

To provide insights into the reasons that participants default, we directly asked defaulters in our sample to rate the importance of various factors that led them to default at the time of enrollment. In Figure 1, we tabulate the fraction of the 1,630 defaulters in our sample who rated each given factor as being very or extremely important (the top two categories on a five-point scale). These categories are not mutually exclusive – we allowed participants to rate multiple factors as very or extremely important to their default. Overall, we find heterogeneity in the reasons provided by respondents, with each of the major hypotheses proposed by Beshears et al. (2008) as well as our additional hypotheses frequently chosen as important.

About 40 percent of respondents chose, "*I would have chosen the Traditional plan anyway*"; we classify these respondents as deliberate defaulters. In the next section, we explore whether these deliberate defaulters are similar to active choosers of the Traditional Plan or to other defaulters.

Procrastination is also frequently cited as a reason for defaulting, with approximately 30 percent of respondents indicating they were too busy or forgot to choose, and about 24 percent indicating they needed more time. Information problems and complexity are also important: 29 percent of respondents expressed a lack of awareness that they could make a choice, over 35 percent reported not having enough information, and just over 25 percent indicated that the

choice was too complex. Just over a third of respondents reported that they believed there was an implicit endorsement by SURS (i.e., they reported that the fact that SURS chose the Traditional Plan as the default signaled that it was the best plan). About 12 percent of respondents felt all three plans were very similar, while just under one quarter rated as very important factors related to the economic insignificance of the choice (i.e., not expecting to remain in the SURS system very long, or SURS would be a small share of their retirement income).

V.3.The Downside of Defaults – Participants Who Subsequently Regret their Plan Choice

V.3.1 Differences in Regret by Plan

Ultimately, whether the reliance on default options enhances or detracts from social welfare depends largely on how the default affects the utility of individuals who accept the default (relative to whatever action they would have taken in the absence of the default.) We are not aware of any research that has attempted to tackle this difficult question (by, for example, randomizing which choice is the default and measuring utility consequences), nor do we address that issue here (we are not able to vary the default, nor can we observe the utility consequences of the various plan choices).

In this section, we have a modest aim, albeit one that is at least informative about some aspects of this deeper issue. At the time of our survey, we ask participants "*If you could go back in time and re-do your original pension choice (assuming the rules when you joined SURS are still in place), which plan would you choose?"* A participant's response allows us to measure whether the participant still views their plan as the best choice, or whether they now prefer a different plan. We recognize that this response is not a measure of *ex ante* expected utility at the time of the decision, or an *ex post* measure of derived utility by the end of life; however, it

reflects the perceptions and preferences of the participant, and as such it reflects the degree of satisfaction or regret associated with the original plan choice, at the time of the survey.

Of course, even if participants wish they were enrolled in a different plan, the reasons they came to this view matter: if personal circumstances changed (e.g., they received tenure, got married, had a change in health status, etc.), then a desire to be in a different plan today does not necessarily mean that the original choice was *ex ante* sub-optimal given the uncertainty at the time. In contrast, if participants learned something about their plans that they should have known at the time of their decision, then there is concern that the default guided participants into sub-optimal decisions. We analyze these and other factors in more detail later, but we begin with simple tabulations.

In Figure 2, we report the fraction of respondents who would *not* choose the same retirement plan if they were today allowed to re-choose. Across the horizontal axis, we break the sample into defaulters and active choosers, followed by the active choosers split by each of the three plans (Traditional, Portable, and Self-Managed).

For each group, we show three bars. The first bar shows the percent of respondents who would either choose a different plan or do not know if they would re-choose (the complement to this is the percent who state they would choose the same plan today and are thus presumably satisfied with their plan choice). The second bar shows the fraction of respondents who indicate a preference for a plan that differs from the one in which they are currently enrolled. The third bar shows the fraction who "strongly" desire to switch plans (based on a question asking them to categorize the intensity of their preference to switch plans). Thus, each group is a subset of the prior group.

The most striking finding is the significantly higher level of dissatisfaction among

defaulters. Approximately 60 percent of respondents who defaulted into the Traditional Plan would choose a different plan today, split almost evenly between those who are unsure which plan they would choose instead and those with a preference for either the Portable or Self-Managed Plans. These fractions are higher than their counterpart measure for active choosers. Specifically, only 39 percent of active choosers express a desire to switch plans, with only 18.8 percent expressing a preference for a different plan and only 7.4 percent with a strong preference to do so. The differences across active choosers of different plan types are relatively small, with the exception of Self-Managed Plans respondents who are more satisfied overall. A key comparison is between respondents who defaulted in the Traditional plan and those who actively chose it, suggesting that it is not the Traditional Plan, per se, that leads to higher rates of regret – rather, it is being defaulted into the Traditional Plan.

V.3.2 Demographic Determinants of Regret

Having established that regret is higher among defaulters than active choosers, we now turn to an analysis of individual characteristics that are correlated with regret. In Table 3, we limit our sample to respondents who defaulted into the Traditional Plan. We define a respondent as experiencing regret if they express a desire to switch from the plan in which they are enrolled (coded 100 for regret, 0 otherwise) and run a linear probability model to assess determinants of regret. We use the same set of covariates from Table 2 (where we examined who defaulted) in Table 3 to examine the characteristics of defaulters that are associated with the likelihood of regret.

We again find evidence of information problems: respondents who were unaware of the default provision are 9.7 percentage points more likely to subsequently express a preference for

switching plans. Thus, respondents who were unaware of the default provision are more likely to default, and also more likely to regret their plan conditional on being defaulted.

Recall from Table 2 that respondents who are willing to take above average risk for above average return are less likely to default. Here we find that conditional on defaulting, these respondents are more likely to prefer to switch plans, possibly because they now regret the fact that they are unable to pursue a more aggressive portfolio allocation through the Self-Managed Plan. Similarly, we find that although respondents who rate their own investment skills highly are less likely to default, they are more likely to want to switch plans if they do default.

Respondents who believe they are very or extremely likely to spend the rest of their career with SURS are less likely to want to switch plans, possibly because as potential long-service employees, they recognize that the Traditional Plan is a good choice for those with more years of service. Respondents who lack confidence in the Illinois legislature are nine percent more likely to regret being in the Traditional Plan.

Regret moves non-monotonically with education: relative to respondents with less than an Associate's degree, those with Associate's or Bachelor's degrees are more likely to express regret (12.1 and 8.8 percent, respectively). However, the effect for higher levels of education is lower and statistically insignificant.

Turning to the right half of Table 3, we find that higher SURS-specific knowledge is associated with a 23.4 percent higher likelihood of regret. We explore in more detail below whether it is acquisition of knowledge after the original choice that explains this pattern (e.g., respondents learned something after enrollment that leads them to believe their original choices were sub-optimal). We also find a sizable age gradient: being a decade older makes one 6.2 percent less likely to regret. Most other demographic and financial characteristics are not

associated with regret, with the exception of the highest income and highest net worth respondents who are substantially less likely to express regret.

V.3.3 How Regret Varies with Reasons for Default

In this section, we explore how satisfaction/regret among defaulters varies with the reasons for default (e.g., deliberate default, information problems, endorsement effects, etc.). This is important because participants who deliberately defaulted may be more like active choosers than those who, for example, defaulted because they procrastinated.

In Figure 3, the horizontal axis presents reasons that respondents reported as very or extremely important for defaulting. The bars show the fraction of respondents rating that factor as important that express a desire to be enrolled in a different plan (i.e., they regret their current plan choice). As before, we show both the total fraction preferring a different plan, and the fraction that strongly prefer a different plan. The first set of bars repeats earlier analyses, namely, that 28.2 percent of those defaulting regret being in the Traditional Plan, with 16.6 percent of them strongly so.

Among respondents who cited being too busy or forgetting as very or extremely important reasons for default, the fraction regretting (strongly regretting) increases to 42.6 (27) percent. Similarly, 48.1 (36) percent who "*needed more time*" want to or strongly want to switch plans. Thus, procrastination matters not only for the likelihood of default, but also for the likelihood of regretting the default outcome.

Information problems are also important. The rate of regret (strong regret) is 34.4 (23) percent among respondents unaware that they could make a choice of plan, and 38.7 (27.4) percent among those who reported that they did not have enough information. Similarly, 33

(23.1) percent of respondents who believe that decision complexity was an important factor to defaulting regret (strongly regret) being enrolled in the default plan.

Respondents who perceived a SURS endorsement of the Traditional Plan had regret rates nearly identical to that of the default sample overall. The results are also quite similar for those who believe the plans are similar, who do not expect to employed by a SURS employer very long, or who report that SURS is a small fraction of their overall retirement income.

In contrast, respondents who are deliberate defaulters have very low regret rates. Only 11.8 percent of deliberate defaulters express a desire to enroll in a different plan, and only 5.3 percent feel strongly about doing so. This reinforces the idea that not all defaulters are the same when assessing the potential welfare consequences of default options – some defaulters are "deliberate defaulters" who are more like active choosers, and have satisfaction/regret levels more comparable to active choosers than to those who defaulted for other reasons.

In Table 4, we explore these results in a multivariate setting. We repeat the regression analysis from Table 3, again limited to defaulters, but now add additional controls to capture the reasons for initial default (as well as factors that have changed since the initial plan selection was made, which we discuss in the next section). Virtually all of the measures from Table 3 are qualitatively unchanged, so we do not review them here. The one exception is that the coefficient on the measure "*unaware of the default provision*" becomes insignificant, as it is likely reflected in other variables we add to the model specification.

There are four reasons for defaulting for which the coefficients are economically and statistically significant. Respondents who "*never got around too it (too busy, forgot)*" are nine percent more likely to regret being enrolled in the Traditional Plan. Similarly, those who "*needed more time to make a decision*" are 13.9 percent more likely to want to switch plans.

One puzzling finding is that participants who rated decision complexity as an important reason for defaulting are 10.3 percent *less* likely to regret in the multivariate framework. One potential explanation is that respondents who were overwhelmed by the complexity at the time of enrollment may not want to revisit their decision (i.e., they are behaving as if they are "double defaulters"), but we have no evidence to support this conjecture. Finally, consistent with the univariate results, deliberate defaulters are 18.7 percent less like to regret.

V.3.4 Pathways to Regret

How is it that people have come to regret their decision? Did their circumstances (e.g., tenure, marital status, economic environment) change in such a way so as to change the *ex post* optimality of the initial decision? Or did the participant learn something that made them realize their earlier decision was sub-optimal? These distinctions are important: if a primary reason for regret is that participants wish they had made a different decision after their uncertainty has been resolved, this may simply be a feature of any irrevocable choice in the face of uncertainty, or an irrevocable choice may not be appropriate. In contrast, if the only thing that changed is that the participant subsequently learned new information which led them to believe their original decision was sub-optimal, this might lead to a greater emphasis on providing salient information to participants or implementing means to force active choices.

To assess this, we asked respondents about a range of factors that may have changed from the time that they made their plan choice to time of the survey; in Figure 4, we report the fraction of respondents who cited these various factors. In Figure 5, we illustrate whether participants with changed beliefs or circumstances are more or less likely to regret their plan choice.[8]

[8] In both figures, the sample consists of those who defaulted into the Traditional Plan and answered the question about whether they would like to re-do their choice if given the opportunity to do so.

For example, in Figure 4 we find that nearly half of respondents updated their expectations about job tenure with their SURS employer, with 32 percent expecting to be in the job longer than they originally thought and 17 percent expecting to be in the job for less time. From Figure 5, we see that these responses are both associated with three to five percentage point changes in the likelihood of regret (we examine the statistical significance of these factors in a multivariate framework when we later return to the regression results in Table 4).

Reflecting recent political and economic events, over 70 percent of respondents report a lack of confidence in the State of Illinois, and 37 percent report an increase in the perceived risk of the stock market. Again, however, Figure 5 suggests that the impact of these factors on the likelihood of regret is modest.

The last four sets of responses relate to learning – i.e., whether participants subsequently learned that people they view as similar to themselves chose the same or a different plan, and whether they subsequently learned more information about SURS or that their prior beliefs were incorrect. Qualitatively, these appear to have large effects on the likelihood of regret in Figure 5.

To assess the significance of these effects, we again turn to Table 4. We find that information factors are economically and statistically significant. Specifically, respondents who have learned since their original choice that similar people chose a different plan than the one they chose are 17.3 percent more likely to regret having defaulted into the Traditional Plan. Those who found the opposite (i.e., that similar people were also in the Traditional Plan) are 5.7 percent less likely to regret. Thus, an important pathway through which respondents appear to determine their satisfaction with the Traditional Plan is simply finding out whether or not other similar participants chose the Traditional Plan.

We also find that respondents who learned new information about the SURS plan are six

percentage points more likely to regret being defaulted. Those who learned that some of their prior information about SURS was incorrect are 17.9 percent more likely to regret.

Taken as a whole, results suggest an important role for information. Not only do many participants default for information-related reasons, but these participants are also significantly more likely to be dissatisfied with the default plan. This is important because providing information to plan participants is well within the purview of employers.

VI. Discussion and Conclusion

We use a unique setting – a state retirement system that serves a heterogeneous group of employees and that requires a financially-significant, irrevocable choice of benefits – to provide evidence on factors that are associated with the likelihood of default, reasons that participants default, and factors associated with later regretting that outcome.

We find that the likelihood of default is negatively associated with measures of financial sophistication, including education, wealth, and self-assessed investment skills. We also document significant heterogeneity in the reasons for default: some defaulters – those that do so deliberately – are essentially active choosers who enact their choice by allowing themselves to default (thus minimizing effort). Others default due to information problems, complexity and procrastination, and these participants are significantly more likely to subsequently want to switch plans. Still others self-report that endorsement effects are relevant, i.e., the very fact that the Traditional Plan was the default implies that it is a better choice.

Importantly, we show that a participant's level of satisfaction, or conversely the extent of regret, varies across plans, with defaulters being significantly more likely to regret their plan selection. This is true even relative to those who actively chose the Traditional Plan, suggesting

it is the default and not the plan itself that is driving regret. If we separate deliberate defaulters from those who default for other reasons, we find that deliberate defaulters look more like active choosers than like the other defaulters, with correspondingly lower regret rates.

Finally, we show the pathways through which participants come to subsequently regret their decision. We find that learning about the behavior of those perceived to be similar is important: participants who learn, subsequent to being defaulted, that other participants like themselves chose a different plan are more likely to regret than those who find that similar participants made the same choice.

These findings have important implications for policy makers and organizations. Defaulters should not be viewed as a homogenous group. For some, defaulting is simply an efficient way to elect the plan they would have chosen anyway. For others, however, being defaulted into a plan due to a lack of information, complexity or procrastination is more likely to lead to subsequent dissatisfaction. This underscores the importance of ensuring that participants are provided with salient information, decision tools, and perhaps other prompts to encourage an active decision. There is a wide range of possible interventions that could improve participant satisfaction. For example, given the important effect of "what people similar to me" chose as a determinant of subsequent plan satisfaction, employers may wish to provide decision tools during the plan election period that show the distribution of choices made by employees similar to the participant making the enrollment decision.

Overall, these finding suggest that there can be important downsides to default options. Many of those who default appear to have done so as the result of poor information or procrastination, which is particularly troubling given the complexity and high stakes of the choice in our setting. These same participants are substantially more likely to subsequently wish

that they had made a different choice, suggesting that there indeed could be negative welfare effects of defaulting. However, these results are far from definitive on this point: future research in this area would benefit from randomized experiments in which individuals are defaulted into different plans. Researchers should also look for additional ways to measure the individual welfare consequences of alternative default designs.

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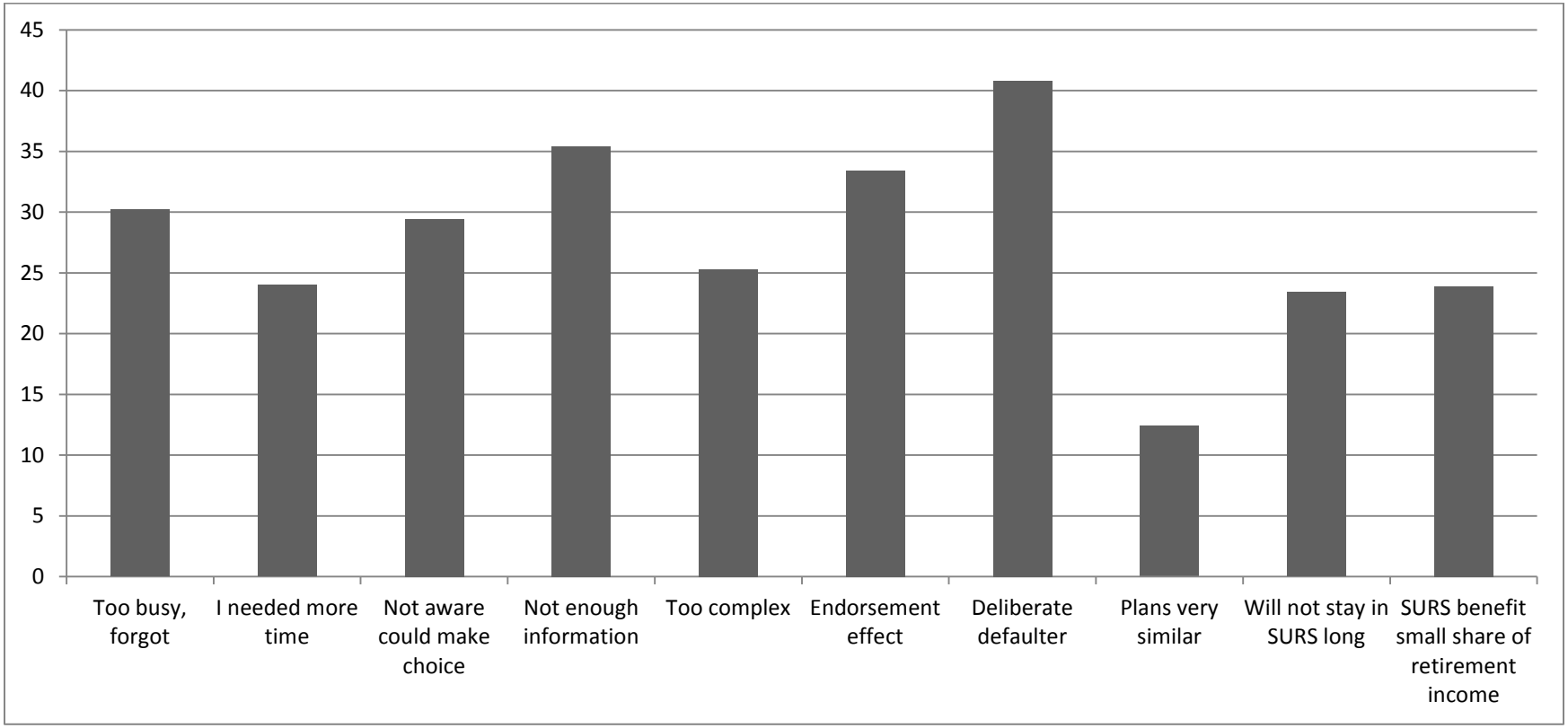
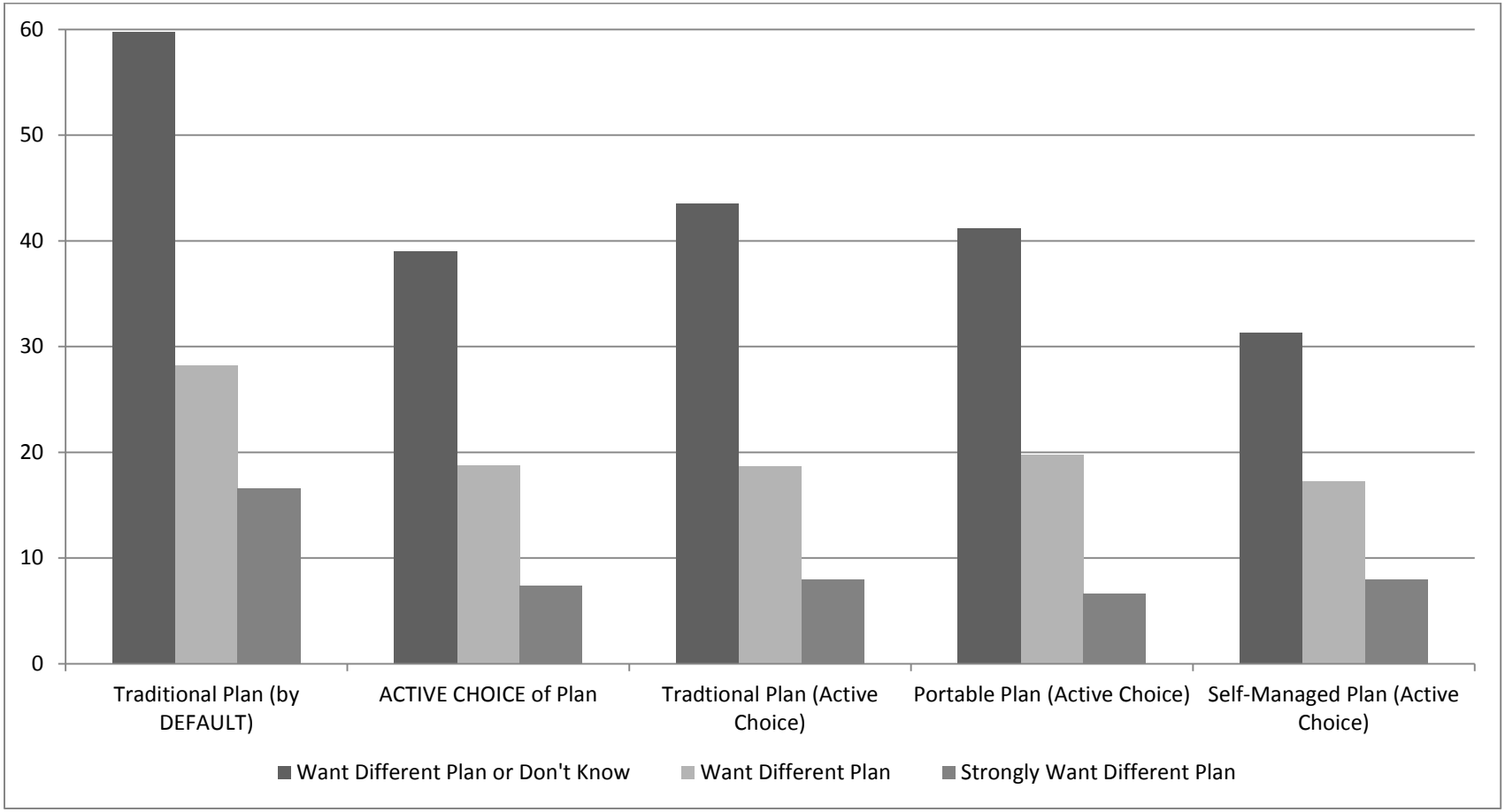
Figure 1: Percent of Defaulters Who Cite as Very Important Different Reasons for Defaulting



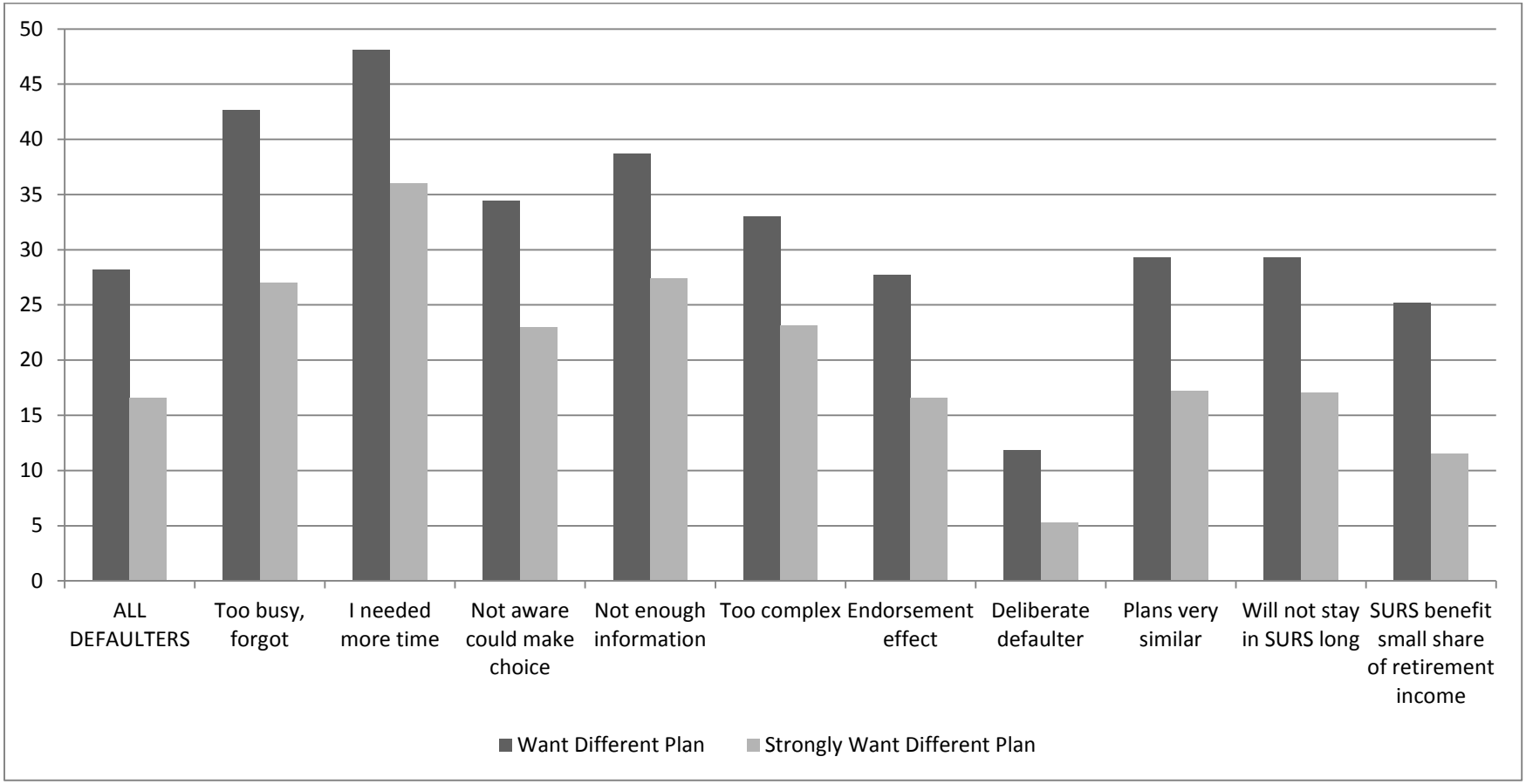
The sample of respondents who defaulted into the Traditional (defined benefit) Plan were asked to rate how important various reasons were to defaulting. For each reason, the fraction of people that answered that reason was very or extremely important is displayed.

Figure 2: Percent of Respondents Who Would Choose a Different Retirement Plan



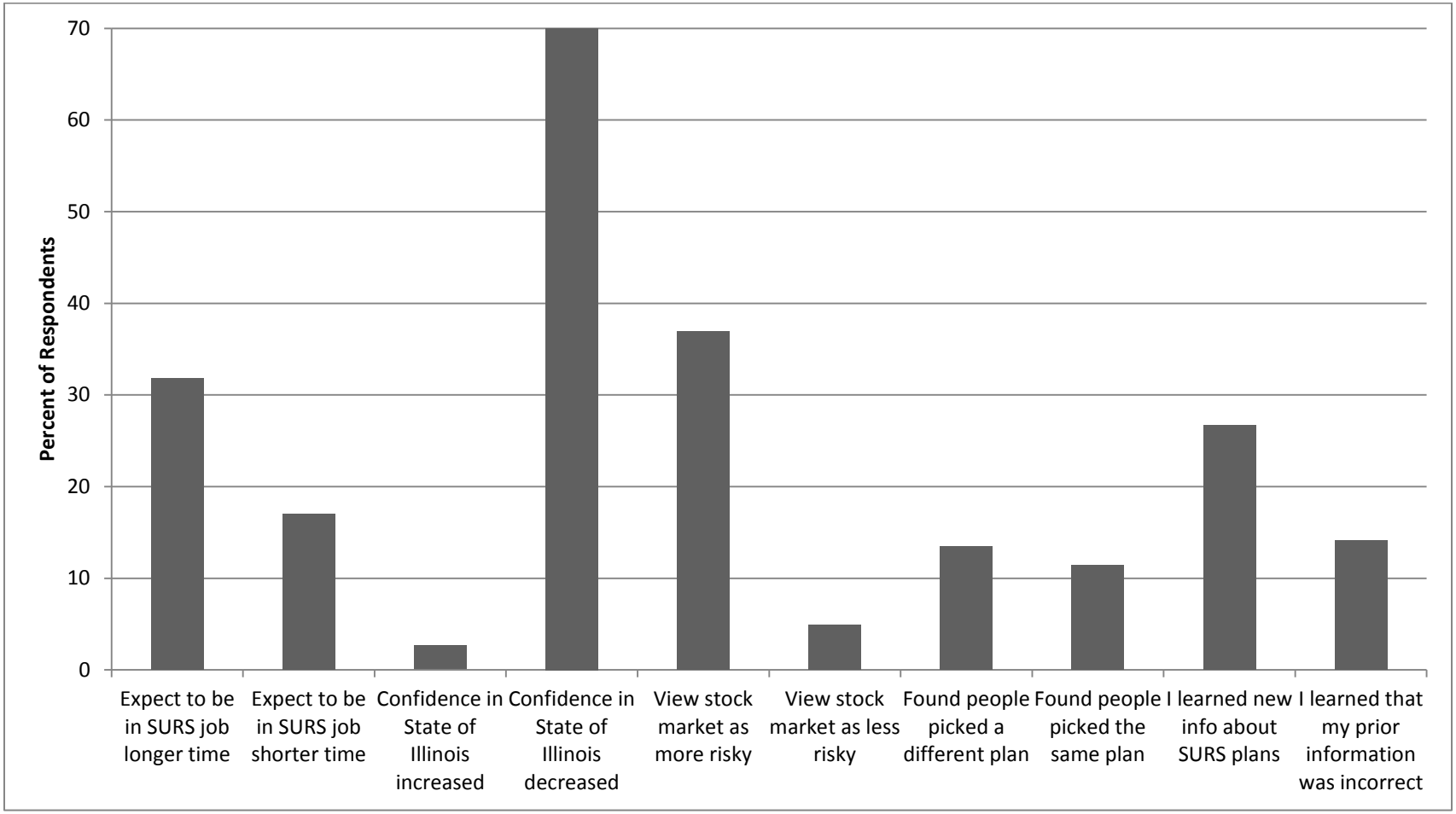
Survey respondents were asked, "*If you could go back in time and re-do your original pension choice (assuming the rules when you joined SURS are still in place), which plan would you choose?*" This figure displays the fraction of respondents who would either choose a different retirement plan or don't know which plan they would pick, who would pick a different pension plan, and who indicate a strong or extremely strong desire to re-do the choice (each group is a subset of the prior group). These tabs are calculated separately for those who defaulted and by plan enrollment for those who made an active decision.

Figure 3: Percent of Defaulters that Would Choose a Different Plan, by Reason Cited for Default



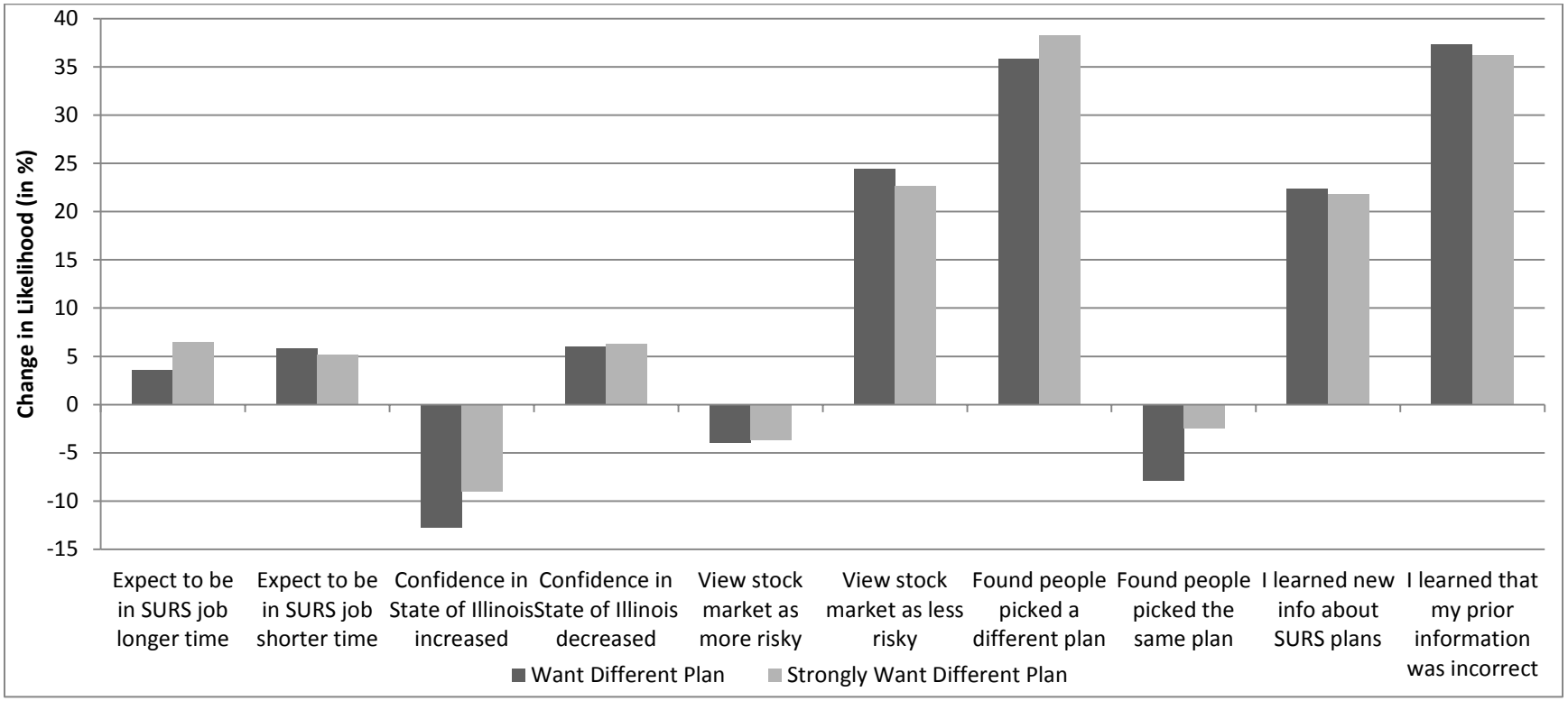
Survey respondents were asked, "*If you could go back in time and re-do your original pension choice (assuming the rules when you joined SURS are still in place), which plan would you choose?*" This figure displays the fraction of respondents who would choose a different plan (dark bar) and the fraction who indicate a strong or extremely strong desire to do so (lighter bar, which is a subset of the darker bar). The first set of bars is for defaulters only; the remaining bars are for subsets of defaulters who indicated that a particular reason was a very or extremely important reason for defaulting.

Figure 4: Percent of Defaulters into Traditional Plan Who Cited Changes in Circumstances/Beliefs Since Enrollment



Survey respondents were asked to indicate, since they enrolled in the SURS system, which changes in circumstances or beliefs (from a given list) they experienced since enrollment. This figure displays the fraction of respondents who cited various changes. The sample consists of those who defaulted into the Traditional Plan and answered the question about whether they would like to re-do their choice if given the opportunity to do so.

Figure 5: Change in Likelihood of Wanting to Switch to Different Plan by Changes in Circumstances/Beliefs, for Defaulters into Traditional Plan



Survey respondents were asked, "*If you could go back in time and re-do your original pension choice (assuming the rules when you joined SURS are still in place), which plan would you choose?*" Survey respondents were also asked to indicate which changes in circumstances or beliefs (from a given list) they experienced since enrollment. This figure displays how a particular change in circumstance/belief changes the likelihood that respondents would choose a different pension plan and the likelihood that respondents would express a strong or extremely strong desire to re-do the choice. The effect of each particular change in circumstance/belief upon the desire to change plans is estimated from a univariate OLS regression for the sample of defaulters. All of the changes in likelihood are statistically significant at the 10 percent level with the exception of the effects of "Expect to be in SURS job longer time" and "View stock market as more risky" for the "Want Different Plan" outcome and "Found people picked the same plan" for the "Strongly Want Different Plan" outcome.

Table 1: Summary Statistics for Sample, Percent of Respondents Reported

ACTUAL PLAN ENROLLMENT		**DEMOGRAPHIC CHARCTERISTICS**	
Traditional (defined benefit), by DEFAULT	26.9%	Age (when joined SURS, in years) – mean	48
Active Choice of:		Age (when joined SURS, in years) – 25th %	35
Traditional Plan (defined benefit)	19.0%	Age (when joined SURS, in years) – 75th %	60
Portable Plan (hybrid)	33.6%	Female?	56.8%
Self-Managed Plan (defined contribution)	20.5%	Married?	72.2%
CORRECTLY IDENTIFIED PLAN IN SURVEY		Have children?	67.7%
Full Sample	91.9%	Ranking of health relative to others	
Traditional (defined benefit), by DEFAULT	96.4%	Very poor or poor	2.9%
Active Choice of:		Average	21.4%
Traditional Plan (defined benefit)	97.8%	Good	46.4%
Portable Plan (hybrid)	84.6%	Excellent	29.3%
Self-Managed Plan (defined contribution)	92.8%	**ECONOMIC CHARACTERISTICS**	
INFORMATION-BASED PROBLEM		Occupation	
Unaware of default provision?	23.2%	Support Staff (secretary)	17.7%
RISK PREFERENCE & INVEST SKILL		Executive	1.9%
Risk-Return Tradeoff Preference		Academic professional	23.3%
Below average risk and return	15.1%	Faculty (tenured)	3.5%
Average risk and return	65.4%	Faculty (tenure-track, not tenured)	9.5%
Above average risk and return	19.5%	Faculty (non-tenure track)	25.0%
Take Gamble (50/50, 100% ↑ or 33% ↓)?		Police, fire, and public safety personnel	1.5%
No	62.1%	Maintenance and facilities personnel	3.6%
Yes	18.8%	Other	14.1%
Don't know	19.1%	SURS-covered job income	
Self-assessment of investment skill		Less than $20,000	18.3%
Much or slightly worse than others	31.7%	$20,000 to $39,999	23.0%
Same as others	38.5%	$40,000 to $59,999	25.1%
Slightly or much better than others	29.8%	$60,000 to $79,999	17.8%
BELIEF OF HOW LONG STAY IN SURS		$80,000 to $99,999	6.8%
Expected to stay rest of career when joined		$100,000 to $119,999	3.9%
Not at all or slightly likely	50.7%	$120,000 or more	5.0%
Moderately likely	12.5%	Share of family income in SURS-covered job	
Very or extremely likely	36.8%	0-24%	21.5%
BELIEF OF POLITICAL RISK		25-49%	20.5%
Not at all confident in Illinois legislature	71.8%	50-74%	21.7%
Slight or more confidence in Illinois	28.2%	75-100%	36.3%
GENERAL KNOWLEDGE		Household net worth	
Correctly answered both questions on:		Less than $20,000	13.7%
Basic financial literacy	43.2%	$20,000 to $49,999	11.5%
Education		$50,000 to $99,999	19.9%
Less than Associate's degree	10.2%	$100,000 to $249,999	25.3%
Associate's degree	6.2%	$250,000 to $499,999	14.1%
Bachelor's degree	21.3%	$500,000 or more	15.4%
Master's or professional degree	42.6%	**FOR SAMPLE OF DEFAULTERS: Pick a Different Plan if Can Re-do Today?**	
Ph.D.	19.7%	Would stay with Traditional Plan (DB)?	40.2%
College degree in finance or business?	18.5%	Would switch to a diff. plan or don't know?	59.8%
Work experience in finance?	35.8%	Would switch to a different plan?	28.2%
SURS-SPECIFIC KNOWLEDGE		Have a strong desire to switch plans?	16.6%
Correctly answered both questions on:			
Basic SURS knowledge	59.6%	*Sample Size of All Respondents*	*6,065*
Specific SURS knowledge	6.2%	*Sample Size of Defaulters*	*1,630*

Table 2: Regression of Whether Defaulted into Retirement Plan Choice, Coefficients from OLS Regression Reported (continued on next page)

INFORMATION-BASED PROBLEM		**GENERAL KNOWLEDGE (continued)**	
Unaware of default provision?	12.4*** (1.6)	College degree in finance or business?	-2.1 (1.7)
RISK PREFERENCE & INVEST SKILL		Work experience in finance?	1.9 (1.4)
Risk-Return Tradeoff Preference		**SURS-SPECIFIC KNOWLEDGE**	
Average risk and return	-4.5*** (1.8)	Correctly answered both questions on:	
Above average risk and return	-8.8*** (2.1)	Basic SURS knowledge	-3.5*** (1.3)
Take Gamble (50/50, 100% ↑ or 33% ↓)?		Specific SURS knowledge	-6.9*** (2.2)
Yes	3.5** (1.6)	**DEMOGRAPHIC CHARCTERISTICS**	
Don't know	-0.3 (1.6)	Age (when joined SURS, in years)	-0.08 (0.06)
Self-assessment of investment skill		Female?	-3.4*** (1.2)
Same as others	-3.5** (1.4)	Married?	-1.0 (1.5)
Slightly or much better than others	-5.0*** (1.6)	Have children?	1.9 (1.3)
BELIEF OF HOW LONG STAY IN SURS		Ranking of health relative to others	
Expected to stay rest of career when joined		Average	2.4 (3.6)
Moderately likely	0.5 (1.7)	Good	-1.6 (3.5)
Very or extremely likely	6.0*** (1.4)	Excellent	-2.0 (3.5)
BELIEF OF POLITICAL RISK		**ECONOMIC CHARACTERISTICS**	
Not at all confident in Illinois legislature	-2.9** (1.3)	Occupation	
GENERAL KNOWLEDGE		Executive	1.1 (4.4)
Correctly answered both questions on:		Academic professional	-2.4 (2.1)
Basic financial literacy	0.3 (1.2)	Faculty (tenured)	-0.6 (3.7)
Education		Faculty (tenure-track, not tenured)	-5.8** (2.7)
Associate's degree	-3.7 (3.0)	Faculty (non-tenure track)	4.2* (2.3)
Bachelor's degree	-2.6 (2.4)	Police, fire, and public safety personnel	-2.6 (4.8)
Master's or professional degree	-3.7 (2.5)	Maintenance and facilities personnel	1.7 (3.5)
Ph.D.	-7.5*** (2.9)	Other	-1.3 (2.1)

Table 2: Regression of Whether Defaulted into Retirement Plan Choice, Coefficients from OLS Regression Reported (continued from prior page)

ECONOMIC CHARACTERISTICS (continued)		Household net worth	
SURS-covered job income		$20,000 to $49,999	-1.3 (2.6)
$20,000 to $39,999	-2.2 (2.6)	$50,000 to $99,999	-3.6 (2.3)
$40,000 to $59,999	-1.6 (2.6)	$100,000 to $249,999	-6.0*** (2.2)
$60,000 to $79,999	-0.1 (2.9)	$250,000 to $499,999	-9.4*** (2.5)
$80,000 to $99,999	-1.6 (3.4)	$500,000 or more	-11.6*** (2.6)
$100,000 to $119,999	-6.3* (3.7)		
$120,000 or more	-5.2 (3.7)		
Share of family income in SURS-covered job			
25-49%	-2.8 (2.4)	*Fixed effects for year of enrollment?*	*Yes*
50-74%	-1.2 (2.6)	*R-Squared of Regression*	*0.118*
75-100%	-0.4 (2.5)	*Sample Size*	*6,065*

The specification is a linear probability model (OLS) in which the binary dependent variable takes on the value 100 if the respondent defaulted into the Traditional Plan and 0 otherwise. Thus, the coefficients on the explanatory variables are expressed in percentage points.

Standard errors, shown in parentheses, allow for heteroskedasticity.

***, **, * indicates significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table 3: Regression of Whether Those Defaulted into Traditional Plan Would Switch Pension Plans Today, Coefficients from OLS Regression Reported (continued on next page)

INFORMATION-BASED PROBLEM		**GENERAL KNOWLEDGE (continued)**	
Unaware of default provision?	9.7*** (2.7)	College degree in finance or business?	-1.5 (3.9)
RISK PREFERENCE & INVEST SKILL		Work experience in finance?	-0.8 (2.9)
Risk-Return Tradeoff Preference		**SURS-SPECIFIC KNOWLEDGE**	
Average risk and return	1.4 (3.2)	Correctly answered both questions on:	
Above average risk and return	16.0*** (4.5)	Basic SURS knowledge	1.1 (2.8)
Take Gamble (50/50, 100% ↑ or 33% ↓)?		Specific SURS knowledge	23.4*** (7.2)
Yes	2.8 (3.2)	**DEMOGRAPHIC CHARCTERISTICS**	
Don't know	-3.8 (3.3)	Age (when joined SURS, in years)	-0.62*** (0.12)
Self-assessment of investment skill		Female?	4.3 (2.7)
Same as others	7.0** (2.9)	Married?	0.3 (2.9)
Slightly or much better than others	8.1** (3.6)	Have children?	2.9 (2.8)
BELIEF OF HOW LONG STAY IN SURS		Ranking of health relative to others	
Expected to stay rest of career when joined		Average	1.4 (7.0)
Moderately likely	-2.0 (4.4)	Good	-3.1 (6.8)
Very or extremely likely	-11.1*** (3.0)	Excellent	1.3 (7.0)
BELIEF OF POLITICAL RISK		**ECONOMIC CHARACTERISTICS**	
Not at all confident in Illinois legislature	9.0*** (2.7)	Occupation	
GENERAL KNOWLEDGE		Executive	-2.2 (10.4)
Correctly answered both questions on:		Academic professional	-7.4 (4.7)
Basic financial literacy	0.7 (2.7)	Faculty (tenured)	2.9 (8.3)
Education		Faculty (tenure-track, not tenured)	-7.1 (6.6)
Associate's degree	12.1** (5.4)	Faculty (non-tenure track)	-5.6 (4.8)
Bachelor's degree	8.8** (4.4)	Police, fire, and public safety personnel	-6.2 (7.7)
Master's or professional degree	4.8 (4.7)	Maintenance and facilities personnel	0.5 (6.6)
Ph.D.	6.3 (5.6)	Other	0.6 (4.6)

Table 3: Regression of Whether Those Defaulted into Traditional Plan Would Switch Pension Plans Today, Coefficients from OLS Regression Reported (continued from prior page)

ECONOMIC CHARACTERISTICS (continued)		Household net worth	
SURS-covered job income		$20,000 to $49,999	-8.4* (4.9)
$20,000 to $39,999	1.6 (4.4)	$50,000 to $99,999	-8.8* (4.7)
$40,000 to $59,999	2.6 (4.9)	$100,000 to $249,999	-5.0 (4.7)
$60,000 to $79,999	5.6 (5.4)	$250,000 to $499,999	-5.9 (5.3)
$80,000 to $99,999	1.6 (7.3)	$500,000 or more	-13.8** (5.7)
$100,000 to $119,999	10.8 (9.7)		
$120,000 or more	-16.9** (8.0)		
Share of family income in SURS-covered job			
25-49%	5.1 (4.5)	*Fixed effects for year of enrollment?*	*Yes*
50-74%	6.9 (4.7)	*R-Squared of Regression*	*0.145*
75-100%	9.5** (4.5)	*Sample Size of Defaulters*	*1,402*

The specification is a linear probability model (OLS) in which the binary dependent variable takes on the value 100 if the respondent would switch to a different plan today and 0 otherwise. Thus, the coefficients on the explanatory variables are expressed in percentage points.

The sample is all respondents that were defaulted into the Traditional Plan.

Standard errors, shown in parentheses, allow for heteroskedasticity.

***, **, * indicates significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table 4: Regression of Whether Those Defaulted into Traditional Plan Would Switch Pension Plans Today, Reasons for Default and Changes in Circumstances Added to Specification (continued on next page)

INFORMATION-BASED PROBLEM		**GENERAL KNOWLEDGE (continued)**	
Unaware of default provision?	-1.2 (2.7)	College degree in finance or business?	-0.6 (3.5)
RISK PREFERENCE & INVEST SKILL		Work experience in finance?	-1.1 (2.7)
Risk-Return Tradeoff Preference		**SURS-SPECIFIC KNOWLEDGE**	
Average risk and return	0.6 (2.8)	Correctly answered both questions on:	
Above average risk and return	10.2** (4.2)	Basic SURS knowledge	1.4 (2.6)
Take Gamble (50/50, 100% ↑ or 33% ↓)?		Specific SURS knowledge	10.3* (6.2)
Yes	-3.4 (3.0)	**DEMOGRAPHIC CHARCTERISTICS**	
Don't know	-4.3 (2.9)	Age (when joined SURS, in years)	-0.46*** (0.11)
Self-assessment of investment skill		Female?	1.4 (2.6)
Same as others	7.6*** (2.7)	Married?	0.8 (2.7)
Slightly or much better than others	8.0** (3.4)	Have children?	2.7 (2.6)
BELIEF OF HOW LONG STAY IN SURS		Ranking of health relative to others	
Expected to stay rest of career when joined		Average	2.6 (6.3)
Moderately likely	-4.2 (4.4)	Good	-1.6 (6.1)
Very or extremely likely	-7.7*** (2.9)	Excellent	1.7 (6.3)
BELIEF OF POLITICAL RISK		**ECONOMIC CHARACTERISTICS**	
Not at all confident in Illinois legislature	4.7* (2.6)	Occupation	
GENERAL KNOWLEDGE		Executive	1.6 (9.7)
Correctly answered both questions on:		Academic professional	-7.1 (4.4)
Basic financial literacy	0.3 (2.4)	Faculty (tenured)	3.4 (8.1)
Education		Faculty (tenure-track, not tenured)	-8.5 (6.0)
Associate's degree	12.6** (5.1)	Faculty (non-tenure track)	-5.6 (4.5)
Bachelor's degree	6.3 (4.3)	Police, fire, and public safety personnel	-5.1 (7.2)
Master's or professional degree	5.0 (4.4)	Maintenance and facilities personnel	1.4 (6.4)
Ph.D.	4.4 (5.3)	Other	-0.7 (4.2)

Table 4: Regression of Whether Those Defaulted into Traditional Plan Would Switch Pension Plans Today, Reasons for Default and Changes in Circumstances Added to Specification (continued from prior page)

ECONOMIC CHARACTERISTICS (continued)		**REASONS FOR DEFAULT (cited as very important), Continued**	
SURS-covered job income		Decision was too complex	-10.3*** (3.4)
$20,000 to $39,999	0.8 (4.0)	Being the default means is best plan (endorsement effect)	-0.9 (2.8)
$40,000 to $59,999	1.2 (4.4)	Would have picked Traditional Plan anyway (deliberate default)	-18.7*** (2.5)
$60,000 to $79,999	2.2 (4.9)	Decision not important because options are similar	0.3 (4.2)
$80,000 to $99,999	-0.8 (6.6)	Decision not important because will not work in SURS job for long	-2.3 (3.6)
$100,000 to $119,999	1.3 (8.9)	Decision not important because SURS retirement will be small share of income	0.3 (3.6)
$120,000 or more	-13.9** (7.1)	**CHANGES IN CIRCUMSTANCES SINCE JOINED SURS**	
Share of family income in SURS-covered job		Expect to be in SURS job longer time?	-3.5 (2.7)
25-49%	-0.4 (4.2)	Expect to be in SURS job shorter time?	3.6 (3.4)
50-74%	1.9 (4.3)	Confidence in State of Illinois increased?	-2.0 (7.1)
75-100%	4.3 (4.2)	Confidence in State of Illinois decreased?	4.3 (3.4)
Household net worth		View stock market as more risky?	-4.1 (2.5)
$20,000 to $49,999	-8.0* (4.6)	View stock market as less risky?	6.1 (5.9)
$50,000 to $99,999	-8.4* (4.4)	Found similar people picked a different plan?	17.3*** (4.0)
$100,000 to $249,999	-4.9 (4.4)	Found similar people picked the same plan?	-5.7* (3.5)
$250,000 to $499,999	-6.0 (4.9)	Learned new information about SURS plans?	6.0** (3.0)
$500,000 or more	-11.2** (5.4)	Learned prior information was incorrect?	17.9*** (4.1)
REASONS FOR DEFAULT (cited as very important)			
Never got around to it (too busy, forgot)	9.0*** (3.1)		
I needed more time to make a decision	13.9*** (3.7)	*R-Squared of Regression*	0.303
Not aware I could make choice	1.3 (3.1)	*Fixed effects for year of enrollment?*	*Yes*
I did not have enough information	3.2 (3.2)	*Sample Size of Defaulters*	*1,402*

The specification is a linear probability model (OLS) in which the binary dependent variable takes on the value 100 if the respondent would switch to a different plan today and 0 otherwise. Thus, the coefficients on the explanatory variables are expressed in percentage points. The sample is all respondents who defaulted into the Traditional Plan. Standard errors, shown in parentheses, allow for heteroskedasticity.
***, **, * indicates significance at the 1 percent, 5 percent, and 10 percent levels, respectively.