The Downside of Defaults

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Abstract:

The use of default options to influence behavior in the retirement savings arena has expanded significantly in recent years. While the use of defaults is sometimes portrayed as a Pareto improvement because it guides behavior without constraining individual choice, the welfare implications of defaults depends critically on why people default and whether the default is well-suited to those affected. In this paper, we use survey and administrative data on participants in a large public retirement system to explore who defaults on an important economic decision, why they default, and whether they subsequently regret their decision (or lack of decision). We find that information problems are an important contributor to the likelihood of default. We show that the likelihood of default increases with information problems, and that this holds true even after controlling for general and decision-specific knowledge, preferences and beliefs, and a variety of socioeconomic characteristics. We also find significant heterogeneity in the self-reported reasons for default, with sizable numbers of participants attributing their default to each of the commonly hypothesized reasons (e.g., endorsement effects, complexity, and procrastination), as well as to "deliberate defaulting" by those who believe the default option represented the best choice, and to beliefs that the decision was not important. We also find that individuals who are passively defaulted are substantially more likely to regret their decision (as measured by whether they would make the same choice today) than individuals who make an active choice. In total, our results suggest that there are potentially important negative welfare consequences when default options are used for complex, high-stakes welfare decisions.

I. Introduction

Perhaps the single most influential contribution 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). This subsequently encouraged policy makers to rethink defaults for escalation of contributions, portfolio allocation and rebalancing, and automatic annuitization (e.g., Brown 2009; Gale et al. 2008).

Several papers, however, have begun to explore conditions under which defaults are more or less likely to improve social welfare. For example, while automatic enrollment defaults can increase participation in employer-sponsored savings plans, 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). Similarly, several studies find 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 the existing literature helps establish the conditions under which well-designed defaults may be optimal, there is little evidence on the factors associated with the likelihood of default or the prevalence of reasons individuals default, and on whether those who default are made better or worse off as a result. Yet the answers to these questions are essential to choosing whether to implement a default option, as opposed, for example, to finding ways of actively forcing choice.

This paper uses a unique data set on default versus active choice in a large public retirement system to provide empirical evidence on two issues, both of which have implications for the design of defaults and social welfare. First, we provide evidence of factors associated with the likelihood of default and of the prevalence of reasons individuals cite for defaulting. Second, we provide evidence of a potential downside of defaulting – subsequent regret of that choice (or lack thereof). The data is from the State Universities Retirement System (SURS) for the state of Illinois, a system that provides individuals with a choice of three pension plans. One of the three plans – a traditional defined benefit plan – is defined as the default option for those who fail to

make an active choice within six months of the start of employment.

Our setting shares characteristics of those 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; and the financial stakes are large because the plan choice/default decision is a one-time, irrevocable choice that must be made in a relatively short time period, even though the pension is likely to be one of the most significant financial assets that most participants will ever own. The large financial stake is magnified because the SURS pension serves both as a pension *and* as a substitute for Social Security, because SURS-covered earnings are not taxed by Social Security and Social Security benefits are not provided on these earnings. Given this setting, even financially-sophisticated plan participants may have difficulty obtaining and properly weighting all the information about plan alternatives and their own personal financial needs to make the optimal choice, and the time pressure to make such a choice when starting new jobs and perhaps relocating only adds to the complexity (Payne et al. 1993; Benartzi and Thaler 2007).

This study makes three major 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 and lower financial and decision-specific literacy. Importantly, though, we find that even after controlling for participant sophistication and a variety of beliefs, preferences, and socioeconomic characteristics, a lack of adequate information about decision alternatives is a significant driver of the likelihood of default, suggesting that well-designed decision-specific information is as important as general education in influencing default behavior.

Second, we find that the underlying reasons participants cite for defaulting varies widely across the defaulting population. We find some 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 default option, and procrastination (Beshears et al. 2008). However, we also find that in our decision setting, information problems are especially important. Notably, more than 50 percent of participants who defaulted cited at least one form of information problem as a reason behind their default. Importantly, this is one reason that policy

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and organizations can potentially influence. In addition, we also find evidence of two other reasons for default that have not been widely proposed in prior literature. First, some individuals make an active decision to choose the default option, and then default to minimize transactions costs; we refer to this as "deliberate default." Second, defaulting may also be optimal for individuals for whom the choice in question is not likely to be economically consequential.

Finally, we provide what is to our knowledge the first evidence that individuals who default are substantially more likely to regret their choice. Specifically, when asked what plan individuals would choose if they were permitted to re-choose today, we find that 35 percent of those who defaulted would choose a different plan, whereas only 15 percent of those who made an active choice or deliberately defaulted would do so. This pattern holds even among more sophisticated plan participants and after controlling for the beliefs, preferences, and socioeconomic characteristics of those who default. Importantly, we show that for those who defaulted, the likelihood that they will regret their choice is significantly associated with the decision-specific information problems identified earlier.

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 individuals default, and the impact of default on regret. We summarize and conclude in Section VI.

II. Prior Literature on Defaults

Early research on default options for 401(k) savings plans did much to propel 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 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

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

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. The idea has also spread to proposals for 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 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

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[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.

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 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, at least in some contexts, some individuals may make an active decision to chose 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". Finally, a fifth possibility is that defaulting may be optimal for individuals for whom the choice in question is not consequential (e.g., individuals who plan to leave an employer before being vested in a retirement plan).

Unfortunately, there is little empirical evidence to help determine which of these reasons, if any, are important in practice. Yet each possible reasons has different implications for the welfare of those affected by defaults, and thus for the optimal design of policy. 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

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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).

III. Background on the SURS Retirement System[3]

III.A. SURS System and Participants

Over 180,000 current and former employees of over 70 Illinois universities, community colleges, and state agencies participate in retirement plans administered by the State Universities Retirement System of Illinois, or SURS. Participants include university and college administrators, faculty members, clerical and support staff, campus police, and others. SURS withholds 8 percent of a participant's salary as a contribution to his/her retirement plan (State Universities Retirement System of Illinois, 2010); 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.

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.

III.B. Retirement Plan Choices

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

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[3] This section draws from prior work using SURS data (e.g., Brown and Weisbenner 2007); a more detailed description of the SURS retirement plan options can be found there.

months of the date that SURS receives certification of their employment. Participants contribute 8 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. SURS notes that the state's share averages about 9.1 percent of the total earnings of all SURS participants in the plan, although the Illinois legislature has a long history of under-funding the plan. Benefits are paid as joint and survivor life annuities; single participants can take 1/8 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 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 individuals must accept an actuarial reduction to convert it to a joint and survivor annuity (State Universities Retirement System of Illinois 2009a). 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 a total of 14.6 percent of salary – 8 percent from the employee and 6.6 percent from the employer[6] – into an individual account. Participants are able to choose

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

[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 has been in effect since the plan's inception. Technically, this rate could rise, although not above 7.6 percent, if SURS decides that the cost of providing disability benefits to Self-Managed Plan participants is less than 1 percent.

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 (State Universities Retirement System of Illinois 2007).

III.C. Enrollment Process

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 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. A few examples illustrate the complexity:

- For a participant who may leave SURS service and take a lump-sum refund, the difference between the Portable and Self-Managed Plans is small prior to being vested (i.e., less than 5 years) but is much larger after vesting.
- If a participant retires 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.
- Employer matching contributions begin as of the employment date for the Traditional and Portable Plans, but only as of the date of formal enrollment in the Self-Managed Plan (so delays in choice for that plan are costly).[7]

These are just a few of the numerous complexities involved in making the optimal choice of plan. To do so, an individual must first obtain information about the attributes of each plan and their own short- and long-term needs and preferences, and consider relationships between plan attributes and these needs and preferences. Next, the individual must decide how to weight this information and combine it to form a choice of plan. Further, they must do so within six months

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[7] See Brown and Weisbenner (2007) for further details of these examples.

of employment, typically an already-hectic time for an individual new to a job who has perhaps also relocated.

This process clearly fits the definition of a "complex task" found in prior 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). Prior literature suggests these simplifying strategies can take a number of forms. First, information acquisition may be selective – in other words, 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. Second, information processing may be "speeded up" in response to the time pressure, which can introduce error into the choice process. Third, a simpler processing strategy may be adopted, which at the extreme may be random choice or avoiding the choice all together – i.e., default (Payne et al. 1993; Benartzi and Thaler 2007; Beshears et al. 2008).

In sum, information acquisition and processing is critical to employees' optimal plan choice, and government and organizational policies can influence these factors. As such, we focus on how plan participants' information problems impact their default behavior and later regret of their plan enrollment.

IV. Survey Design and Sample Descriptives

IV.A. Survey Design and Administration

In cooperation with administrators at SURS and the University of Illinois Survey Research Lab, we administered a web-based survey of SURS participants. The target population was the 26,293 SURS participants with an active email on file who joined the system after 1998, to ensure that the participants made their SURS plan choice as new employees.

We sent these participants an e-mail in July 2007 inviting them to participate in the survey and directing them to click on a link to the on-line survey if they wished to do so. Participants who did not respond to the initial e-mail received two subsequent invitations in approximately two-week intervals. A few months later, we sent another round of reminders. In total, we received 4,951 usable responses. SURS states that the population it serves is diverse in terms of occupation and income (State Universities Retirement System of Illinois 2010), which is reflected in the variation in respondents' characteristics reported in Table I.

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The 56-question survey included questions about respondents' employment status and reasoning behind plan choices at the time they entered the SURS system, the importance of different plan features to their plan choice, self-reported investment knowledge and skill, risk preferences, perceptions of political risk, knowledge of the SURS system, and demographic details. To supplement these self-report measures, the Survey Research Lab merged survey responses with SURS administrative records, so our data also includes participants' actual plan choices as well as other administrative data such as age and earnings.[8]

IV.B. Sample Descriptives

According to SURS administrative records, of the 4,951 respondents, 1,089 (22.0 percent) defaulted into the Traditional Plan (the defined benefit plan) and 3,862 respondents (78.0 percent) made an active choice of plan. Of those who made an active choice, 871 (17.6 percent) chose the Traditional Plan, 1,640 (33.1 percent) chose the Portable Plan (the hybrid plan), and 1,351 (27.3 percent) chose the Self-Managed Plan (the defined contribution plan).[9] Hereafter, we refer to the plans in which respondents are enrolled per SURS administrative records, and whether respondents defaulted or made an active choice of plan per SURS records, as the "actual" plan enrollment and the "actual" default.

Of the 4,951 respondents, 4,588 (92.7 percent) correctly identified the plan in which they are actually enrolled when they responded to the survey. Of those actually enrolled in the Traditional Plan, 96.4 percent correctly reported their enrollment (94.6 percent of those who defaulted into the plan and 98.6 percent of those who made an active choice of it). Of those actually enrolled in the Portable and Self-Managed Plans, 86.2 percent and 95.2 percent correctly reported their enrollment.[10] Our rates of correct plan reporting are substantially higher than the

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[8] Consistent with IRB protocols and the requirements of SURS, all data was stripped of participants' identifying information before being provided to the researchers. Among other things, this means that some data (e.g., income, net worth) were provided only in categorical, rather than continuous, form.

[9] Relative to the full universe of SURS participants who have joined the system since 1999, this sample under-represents defaulters and over-represents active choosers. This is not surprising because those who default into the system are less likely to have an email address on file with SURS, and thus were less likely to be solicited by the survey. In the sub-population of SURS participants who joined the system since 1999 and did have an email address on file, 24.1 percent defaulted into the Traditional Plan, 17.5 percent actively chose the Traditional Plan, 32.5 percent chose the Portable Plan, and 26.0 percent chose the Self-Managed Plan, numbers that are much closer to our sample distribution. We thank SURS and the Survey Research Lab for providing us with these tabulations.

[10] We note that a lower percentage of respondents in the Portable Plan correctly reported their plan enrollment, which is not surprising given that this plan is similar to the Traditional Plan. Of those actually enrolled in the Portable Plan who misreported their enrollment, 91.2 percent reported enrollment in the Traditional Plan.

77.1 percent found in Gustman and Steinmeier (2005, Table 2), providing some evidence that our survey respondents are knowledgeable about their retirement plans.

V. Results

V.A. Factors Associated with the Likelihood of Default

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

We include five categories of independent variables in the models – information-based problems, investment preferences and skill, beliefs about job tenure and political risk, general and decision-specific knowledge, and socioeconomic characteristics (Table II, left column).[11] Tabulations of these variables are presented in Table I.

V.A.1. Information-Based Problems: As noted earlier, choosing the optimal plan in which to enroll is a complex process involving the acquisition, weighting, and combination of a large number of information items. As such, we first explore the extent to which information problems affect default likelihoods. We asked respondents if they were aware of the default provisions of the retirement plan at the time of entry into SURS (10.2 percent indicated they were not), and to rate the helpfulness of the information received from SURS (34.0 percent said the information was not helpful).

We include these two measures alone in a linear probability model like those in Table II without any other controls. In this simple model, a lack of awareness of the default provisions is associated with an 18.8 percent increase in the likelihood of default, and a perception that SURS information was not helpful is associated with a 20.0 percent increase in the likelihood of default (p-value < 0.01 for both coefficients).

We then estimate the full models in Table II. The coefficients on the two measures of information problems are of a similar magnitude to those in the simple model and remain highly

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[11] In analyses, we also include fixed effects for the year in which the respondent made their plan election. In addition, we include controls for "don't know" responses to various survey questions; in general, coefficients for these controls are not significant. For conciseness, results for these variables are not reported.

statistically significant. Specifically, a lack of awareness of the default provisions is associated with a 14.9 percent increase in the likelihood of default in the regression displayed in Table II with all of the controls, and a perception that SURS information was not helpful is associated with a 16.0 percent increase in the likelihood of default. Considering that these coefficients are conditioned on investment preferences and skill, beliefs about job tenure and political risk, general and decision-specific knowledge, and socioeconomic characteristics, this result highlights the importance of providing quality decision-specific information to participants if lowering default rates is a goal.

To ensure the effects of information-based problems are robust to participants' year of enrollment in SURS, we re-estimate the model in Table II but also include interactions between a trend measure of the year of enrollment and awareness of default provisions, and between the trend measure and perceptions of poor information. Coefficients on the two main effects are 15.4 percent and 16.4 percent, respectively (compared to 14.9 percent and 16.0 percent in Table II) and statistically significant (both p-values < 0.01), while the interaction terms are both negligible in magnitude (-0.1 for both) and not significant (both p-values > 0.80).

V.A.2. Investment Preferences and Skill: We asked respondents to report their risk-return preferences. Those who are willing to take average risks expecting to earn average returns are 7.4 percent less likely to default, while those who are willing to take above-average risks expecting to earn above-average returns are 10.0 percent less likely to default (both relative to below-average risk takers). These results may reflect the possibility that as willingness to take financial risk increases, participants may either prefer the Self-Managed Plan or are less willing to cede control of plan choice to others.

We also examine respondents' self-reported level of investment skill relative to others. We find no significant association between this measure and the likelihood of default.

V.A.3. Beliefs about Job Tenure and Political Risk: We asked respondents to answer questions about preferences and beliefs that could reflect a preference for the Traditional Plan (and thus increase the likelihood of default) or in other types of plans (and thus decrease the likelihood of default). First, respondents reported how long they expected to stay in their SURS-eligible jobs. We find no association between this measure and the likelihood of default.

Second, respondents rated their confidence in the Illinois state legislature; those with no confidence are 3.8 percent less likely to default. Assuming these individuals are opting into the Self-Managed Plan, which is fully funded each year, this could be considered a rational response to the funding uncertainty generated by the Illinois legislature's history of under-funding SURS.

V.A.4. General and Decision-Specific Knowledge: We use two types of measures of general and decision-specific knowledge – a "quiz" format and self-reported education.

First, survey respondents responded to two questions to measure their basic financial literacy, two to measure their basic knowledge of the SURS system, and two to measure their advanced knowledge of SURS. For each, respondents who answered two (one or zero) questions correctly were coded 1 (0).[12] There is a significant decrease in the likelihood of default for respondents with basic financial literacy (3.4 percent decrease), basic SURS knowledge (2.4 percent decrease), and advanced SURS knowledge (6.4 percent decrease).

Second, respondents reported their education level, and whether they had a degree in business or economics. Those with a master's or doctoral degree are 6.7 percent and 11.3 percent less likely to default, respectively, but there is no significant change in the likelihood of default for those with a bachelor's degree or a business or economics degree.

V.A.5. Socioeconomic Characteristics: In the survey, we asked respondents to provide information about their position at time of entry into SURS, income, net worth, marital status, parental status, and health; we also obtained respondent gender and age from the SURS administrative data. Of these characteristics, gender stands out as the significant predictor of the likelihood of default – females are 5.6 percent less likely to default than males.[13] Overall, the lack of significance of most of the remaining socioeconomic characteristics provides some evidence that these are not reliable predictors of default in our setting.

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[12] The basic financial literacy questions asked respondents to compute compound interest for a given set of facts (ten percent interest rate over two-year period), and to rank the riskiness of four types of investment (individual stocks, a stock mutual fund, a bond mutual fund, and a money market fund); 30.3 percent of respondents got both answers correct. The basic SURS knowledge questions asked the percent of pay withheld as a SURS contribution, and whether Social Security taxes are withheld for SURS participants; 51.0 percent of respondents got both answers correct. The advanced SURS knowledge questions asked what contributions each plan pays out if a participant leaves the system after three years, and which plan pays out the highest amount of employer contributions if a participant leaves the system after ten years; 7.0 percent of respondents got both answers correct.

[13] In contrast, Goda and Manchester (2010) find no significant effect of gender on default rates, and Choi et al. (2004a) find no significant effect in one of three companies examined and a slightly positive effect in two.

V.A.6. Summary: In summary, our results indicate that unawareness of the default provisions and a perception of poor decision-specific information are the dominant factors that increase the likelihood that plan participants default. The effect is significant after controlling for investment preferences and skill, beliefs about job tenure and political risk, general and decision-specific knowledge, and socioeconomic characteristics of participants. Thus, information problems have a powerful impact on the likelihood of default.

V.B. Why Do Participants Default?

The welfare implications – and by extension, the policy implications – of default behavior depend critically on *why* individuals default. As noted earlier, 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. To the extent that these are the reasons for default behavior, there are policy implications related to the extent of information provision, the structure of the default, and/or the effort extended by the plan sponsor to engage individuals in making an active choice. In contrast, defaults would be unambiguously efficient if individuals who default are doing so rationally and deliberately (e.g., if the decision is not economically consequential, or if after analyzing the options an individual concludes that the default is the optimal choice and thus s/he economizes by allowing default rather than incurring the time and effort to actively choose, which we call "deliberate defaulting").

To provide insights into the reasons that individuals default, in the survey we directly asked participants who reported that they defaulted, "*Which of the following reasons explain why you were automatically enrolled in the Traditional Benefit Package?*" We provided eight possible reasons, and respondents were permitted to select multiple reasons (although 80.6 percent chose only one or two reasons). We tabulate responses in Figure I for the 620 responses we received.

The first notable finding from Figure I is that there is tremendous heterogeneity in the self-reported reason that individuals defaulted. Indeed, essentially all of the reasons proposed by Beshears et al. (2008) as reasons for default behavior appear to be relevant for at least a subset of the defaulting population.

Second, we find that a lack of sufficient information to make an informed plan choice is very important. Notably, 19.0 percent of respondents reported that they defaulted because they

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did not know they could make a choice at all. Further, about one-fourth of respondents reported that they defaulted either because of a lack of information about the choices or a lack of help with decision complexity – in other words, information provided by SURS was perceived to be uninformative. In total, 51.3 percent of the defaulters chose at least one information-related problem as an explanation for their default behavior; of those who chose only one reason for default, 43.0 percent cited an information problem. Coupled with the finding of the importance of information problems from our analysis of the factors associated with the likelihood of default, these results suggest that the quality and salience of the information provided by plan administrators about plan choices may have potentially important effects on default behavior.

Third, we find evidence of an "endorsement effect" in part of the population. Specifically, 20 percent of respondents who defaulted reported that they did so because they perceived that the Traditional Plan was the best choice due to the fact that SURS chose it as the default, although only 9.1 percent of those who chose only one reason for default cited the endorsement effect. A significant positive correlation (0.19) between defaulting because the decision is too complex and defaulting because of the endorsement effect suggest that the endorsement effect could work in combination with decision complexity to prompt default. Given the heterogeneity of the affected population (see Table I) and the large differences across the three plan choices, it is certainly not the case that there is a single "best choice" in the SURS system. Thus, this finding has potentially important implications for the welfare of plan participants.

Fourth, about one out of every six defaulters (a comparable rate for those who chose multiple reasons or a single reason for default) is what we call a "deliberate defaulter," in that they indicate that they defaulted because they would have chosen the Traditional Plan had they made an active choice. Significant negative correlations between deliberate default as a reason and both information problems (-0.30) and procrastination (-0.19) as reasons suggest that for these participants, defaulting into the Traditional Plan can be considered rational.

Fifth, 13.4 percent of participants defaulted because they did not plan to work in the SURS system for very long, and as such they may have rationally saved time by not devoting effort to making a choice. Likewise, 2.6 percent of respondents defaulted because they thought all three plan choices were very similar, a response that could be rational (if it is related to their belief that they would not stay in the SURS system very long), but could also be indicative of the lack of information noted earlier, given that the plans are actually quite different. Of those who selected

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only one reason for defaulting, 7.4 percent chose decision irrelevance.

Finally, 37.9 percent of respondents (and 24.2 percent of respondents who chose only one reason for defaulting) reported that they defaulted because they never got around to making a choice, evidence that procrastination matters to default behavior. Further, there is a significant positive correlation (0.19) between procrastination and decision complexity as reasons for default. To the extent that procrastination is driven by decision complexity or a lack of information (rather than by an innate personality characteristic[14]), efforts of plan administrators to inform participants about their choices in a clear, timely manner could reduce the prevalence of this default reason.

In sum, we find evidence that the reasons for defaulting proposed by Beshears et al. (2008) – decision complexity, endorsement effects, and procrastination – as well as other, possibly rational, reasons for default are all prevalent in practice. Notably, information-based reasons for defaulting – a lack of knowledge that a choice *could* be made, and information that is perceived to be uninformative – are the most prevalent, and could be influenced by policies that take steps to improve communication with and information provided to plan participants. This finding is very much consistent with the importance of information problems in predicting defaults in the regression of Table II.

V.C. *The Downside of Defaults – The Impact of Default on Regret*

Ultimately, whether default options contribute positively or negatively to social welfare depends largely on how they affect the utility of individuals who do default. While we are unable to directly observe the utility consequences in our population, we are able to gain some insights by asking in the survey, "*If you were making your pension plan choice today, which plan would you choose?*" and observing the extent to which respondents regret their initial plan election. We define a plan participant as experiencing regret if today's plan choice differs from their actual plan enrollment (coded 100 for regret, 0 otherwise).[15]

First, we compare the proportion of those who regret their plan choice for the 1,089 respondents who defaulted into the Traditional Plan (22.0 percent of the sample) to the

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[14] Some research suggests that 20 percent of normal adults can be classified as chronic procrastinators (Harriott and Ferrari 1996).

[15] This is a conservative measure of regret, since we code respondents who responded that they don't know what choice they would make today as not regretting.

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proportion for the 3,862 respondents who made an active choice of plan (78.0 percent of the sample). As shown in Figure II, 35.2 percent of respondents who defaulted regret that they are enrolled in the Traditional Plan, while only 15.5 percent of those who made an active choice regret their enrollment.

Second, the proportions of active choosers who regret is substantially lower than the proportions for defaulters: 14.0 percent of those who actively chose the Traditional Plan, 19.4 percent of those who chose the Portable Plan, and 11.8 percent of those who chose the Self-Managed Plan (Figure II). Particularly noteworthy is that, focusing on those who are in the Traditional Plan, those who defaulted into that plan are over 20 percentage points more likely to wish they were in a different plan today than those who actively chose to be in the Traditional Plan.

V.D. Factors Associated with Regret Among Those Who Default

We next provide evidence of factors associated with higher or lower likelihoods of plan choice regret among those who defaulted. Table III provides the results of linear probability models (OLS) with the dependent variable coded 100 if the respondent's choice of plan today (i.e., the Portable or Self-Managed Plan) is different than the plan in which s/he is actually enrolled (i.e., the Traditional Plan) and 0 otherwise. Thus, the coefficients reported represent percentage-point changes in the likelihood of regret. The five categories of independent variables are the same as those used in the model of default in Table II – information-based problems, investment preferences and skill, beliefs about job tenure and political risk, general and decision-specific knowledge, and socioeconomic characteristics.

V.D.1. Information-Based Problems: We noted in earlier analyses that decision-specific information problems were associated with a greater likelihood of defaulting for all respondents (Table II). We also find a similar pattern for the likelihood of regret among those who default. First, those who were not aware of the SURS default provision are 18.6 percent more likely to regret their enrollment in the Traditional Plan than are those who were aware of it. Second, those who perceived that the SURS information was not helpful are 14.9 percent more likely to regret their plan enrollment. Thus, by themselves, information-based problems are important predictors of the likelihood of regret.

We also examine the extent to which the likelihood of regret is associated with information problems for respondents in the Traditional Plan who were enrolled in that plan via different mechanisms – via default or an active choice. We re-estimate the full model in Table III for all respondents in the Traditional Plan (not just the defaulters), including measures of the mechanism through which respondents were enrolled in the plan (with default as the omitted category), and interactions between whether the respondent defaulted or made an active choice and the two measures of information-based problems (see Table IV).

Consistent with the results in Figure II, the baseline likelihood of regret is significantly lower for respondents who actively chose to enroll in the Traditional Plan (8.5 percent) than for those who defaulted (Table IV, second column). This provides evidence that regret is not simply driven by differences in the economic performance of alternative plans; these participants are all enrolled in the Traditional Plan and thus should similarly experience any regret due to performance differences of alternative plans.

With respect to the interactions between a lack of awareness of the default provision and enrollment mechanisms (Table IV, third column), the likelihood of regret is significantly positive for those who defaulted (19.2 percent) but insignificant for those who made an active choice, with this effect significantly stronger for those who were defaulted into the traditional plan than those who made an active choice ($p < 0.01$). This result makes perfect sense, for those who made an active choice to be in the Traditional Plan, being unaware of the default provision should play no role in any regret they may have over their choice since they did not default in the first place. Being unaware of default provisions only leads to regret among those who defaulted into the Traditional Plan.

On the other hand, information provided by SURS being rated not helpful should lead to regret among respondents regardless of the enrollment mechanism, and this is precisely what we find (Table IV, fourth column). Poor information quality contributes to the likelihood of regret similarly for all respondents in the Traditional Plan, regardless of the mechanism through which they were enrolled in that plan – those who defaulted and rate the information they received as not helpful are 14.7 percentage points more likely to regret being in the Traditional Plan while those who actively chose the Traditional Plan and rate the information they received as not helpful are 12.7 percentage points more likely to regret that choice.

Taken as a whole, these results highlight the impact that plan administrators' communication

and education efforts can have not only on participants' choices, but also on later regret of those choices. Further, it is important to note that the provision of quality, decision-relevant information can reduce both default rates and the extent of regret for all plan participants, those who default and those who actively choose alike.

V.D.2. Investment Preferences and Skill: Results for these measures tell a story consistent with the results from the regression model for the likelihood of default. First, we would expect regret to be higher for respondents who defaulted but prefer to take more risks with their investments to earn higher returns, which they would be better able to do in the Self-Managed Plan than the Traditional Plan. Indeed, respondents who reported they are willing to take average risks expecting to earn average returns are 7.4 percent less likely to default (Table II), but if they did default, they are 10.3 percent more likely to regret enrollment in the Traditional Plan (Table III). Similarly, while those who are willing to take above-average risks expecting to earn above-average returns are 10.0 percent less likely to default (Table II), but, again, if they did default, they are 24.4 percent more likely to regret their plan enrollment (Table III). This finding is consistent with these participants being less comfortable with ceding control of their financial decisions to others.

Second, we turn to self-assessed investing skill. We would expect regret to be higher for respondents who defaulted but rate their investing skill as relatively good, since they may perceive they could earn higher returns if they managed their own investments in the Self-Managed Plan rather than ceding control to others as in the Traditional Plan. In fact, those with medium or high investing skill are no more or less likely to default than those with lower skill (Table II), but if they did default, they are 10.2 percent and 13.3 percent more likely to regret their enrollment in the Traditional Plan (Table III). This is consistent with the idea that those who believe they are unskilled investors may feel content to leave their financial decisions in the hands of others, while those who believe they are more skilled are not.

V.D.3. Beliefs about Job Tenure and Political Risk: Results for these measures tell a story consistent with the results for the default regression model. First, respondents who expect to stay in their SURS-eligible jobs for a long time are 8.3 percent less likely to regret enrollment in the Traditional Plan. This is consistent with default being a rational, deliberate decision for long-

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term SURS participants. Second, as expected, those with no confidence in the Illinois state legislature are 5.5 percent more likely to regret enrollment in the Traditional Plan if they did default.

V.D.4. General and Decision-Specific Knowledge: While measures of basic financial literacy, basic SURS knowledge, advanced SURS knowledge, and education level are significant predictors of the likelihood of default (Table II), in general we find little or no clear pattern of association with the likelihood of regret for those who defaulted (Table III). Likewise, and consistent with results of the default regression model, there is no association between holding a business or economics degree and regret.

V.D.5. Socioeconomic Characteristics: As with the default model, socioeconomic factors have little impact on the likelihood of plan choice regret for those who defaulted. Taken together, the results for the default and regret models suggest that socioeconomic factors have little explanatory power for the likelihood of default or of regret.

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 plan participants default, and the factors that affect the extent of later regretting that outcome.

We find that the likelihood of default is significantly lower for those with higher levels of general and decision-specific knowledge. However, even after controlling for these characteristics as well as investment preferences and skill, beliefs, and socioeconomic characteristics, the effect of information problems on an increased likelihood of default are significant. Thus, it seems unlikely that general or even decision-specific knowledge is a substitute for quality communications and information from the plan administrator.

We also provide the first direct evidence that we know of on why people default. We find that there is a surprising degree of heterogeneity, with no more than about one-third of employees citing any one particular reason for defaulting. However, the most widely-cited category of reasons relate to a lack of information – a factor that can be influenced by employers.

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Finally, we show that significantly more plan participants who default regret their plan enrollment than do those who make an active plan choice. This pattern holds even among those who actively chose the same plan as the default. Further, we provide evidence that the same information problems that are positively associated with default are also positively associated with regret. Notably, poor information increases the likelihood of plan choice regret for all participants, regardless of whether they defaulted or made an active choice.

These findings provide several opportunities for future research. First, taken as a whole, these findings have important implications for policy makers and organizations. Providing individuals with quality decision-specific information has the potential to do much to improve employee savings outcomes. However, a greater *quantity* of information may not improve outcomes if it is not accompanied by timely assistance in evaluating whether and how that information is relevant to individuals' needs and preferences. Determining the nature and extent of effective communications is a fruitful avenue for future research.

Second, we do not investigate the mechanism through which individuals who regret came to believe that there was a better alternative for their needs. It is possible that they obtained information on their own, from coworkers, from the plan administrator, or from sources external to the employer (e.g., the media) that led them to believe they had made a poor choice. Further research could benefit from examining the mechanisms through which employees obtain information subsequent to a choice that then affects their perceptions of their welfare, extending work by Duflo and Saez (2003).

Third, because of confidentiality constraints and data limitations, we are unable to measure the extent to which regret of plan choice is associated with participants' economic welfare. Future research could usefully focus on providing empirical evidence on the later, longer-term economic implications of defaults. For example, are employees who default and regret that outcome less motivated and more likely to leave the organization? At a minimum, it is reasonable to believe that if employees are dissatisfied with such a significant component of their overall compensation, this could translate into negative implications for employers.

Fourth, it is possible that some of our findings related to the associations between the likelihood of default and individuals' preferences, knowledge and skill, beliefs, and socioeconomic characteristics may be driven by the fact that the default option in our setting is a defined benefit pension plan. Further research could examine the extent to which our findings

apply if the default option is a defined contribution pension plan, or for other variations of default options in other settings.
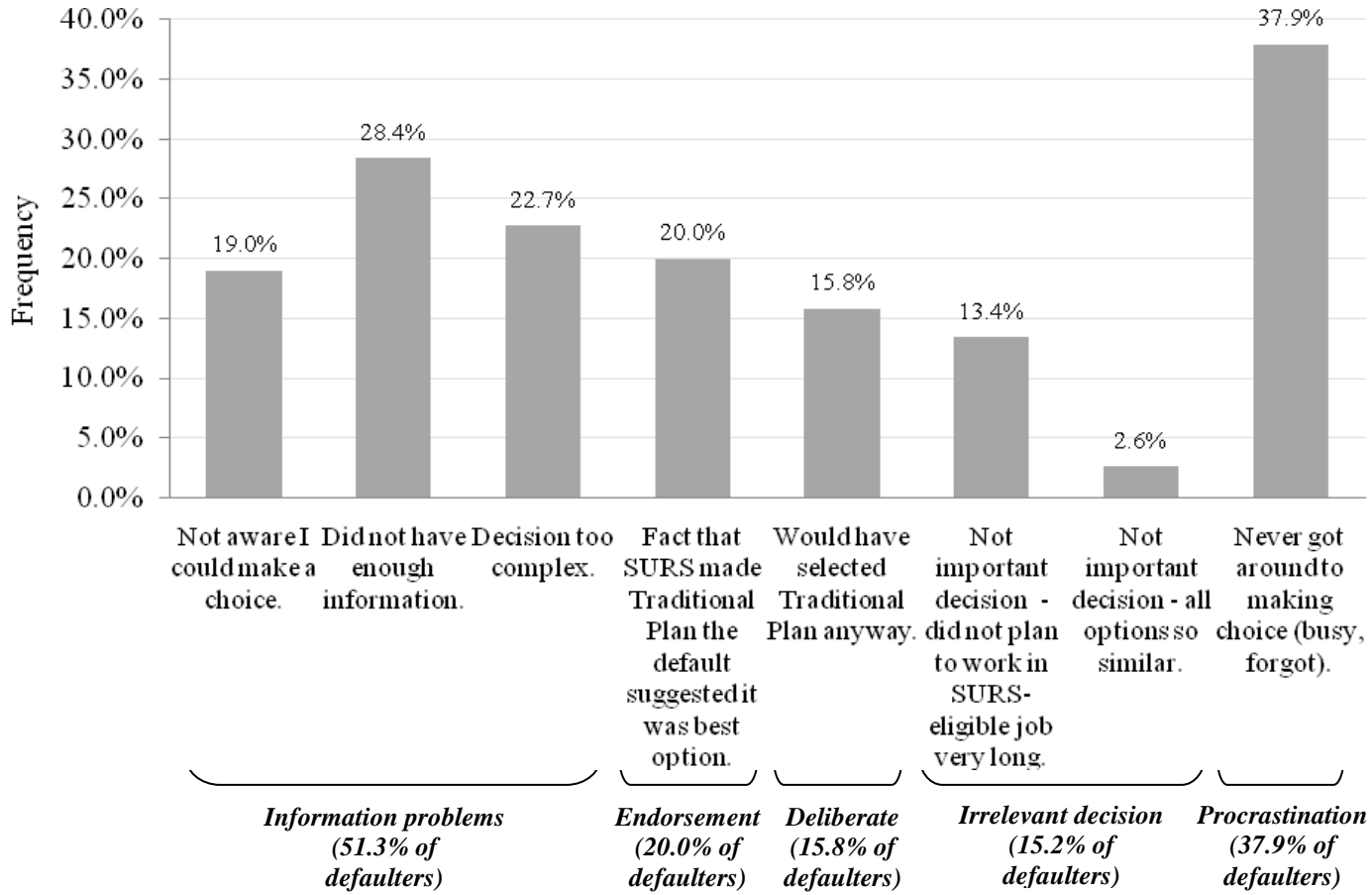
Overall, these finding suggest that there can be important downsides to default options. Many of those who default appear to have done so as the result of poor information, which is particularly troubling given the complexity and high stakes of the choice in our setting. These same individuals are substantially more likely to subsequently wish that they had made a different choice, suggesting that there indeed could be welfare effects of defaulting, not just for plan participants but also for employers.

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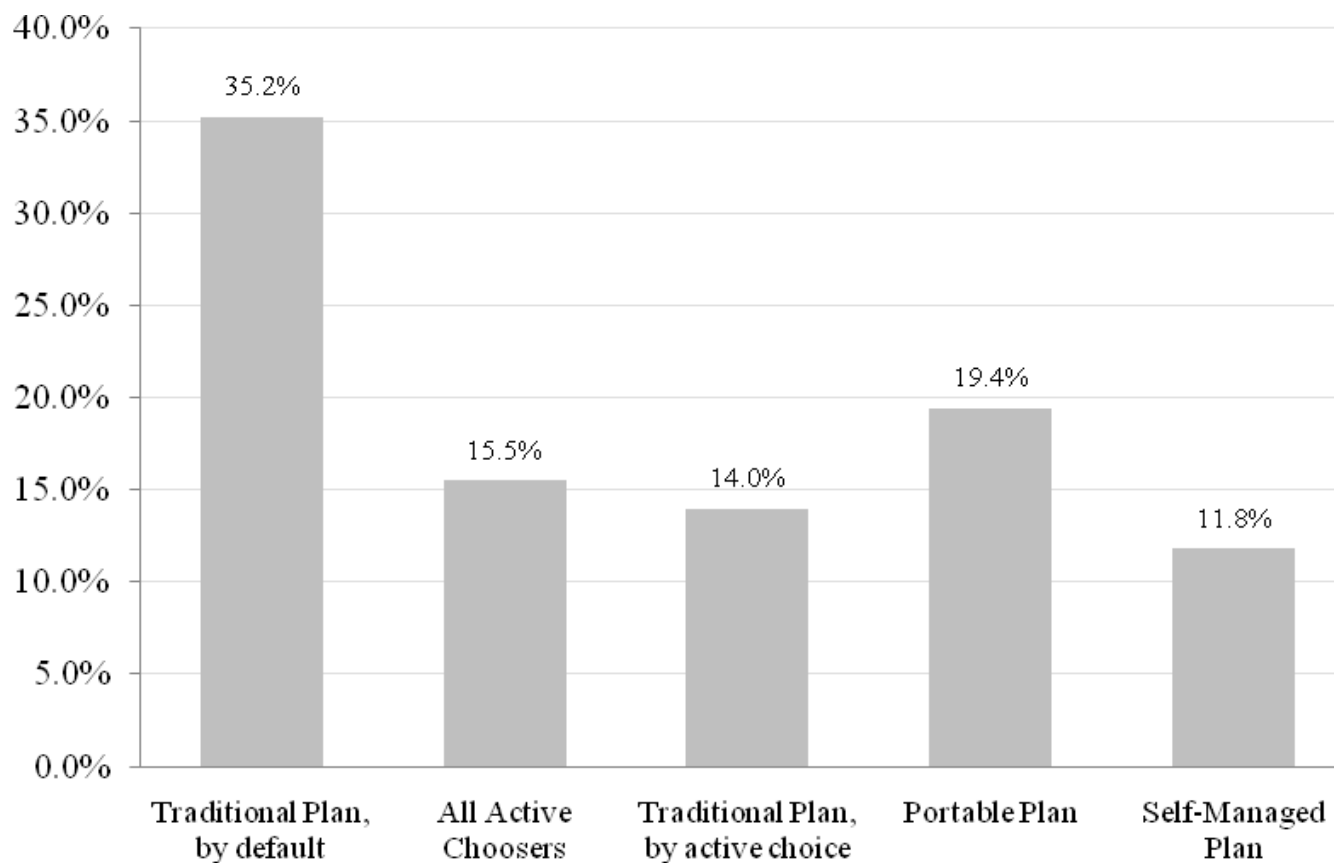
Figure I
Frequency of Reasons Cited for Defaulting [1]

Figure II
Percent of Respondents Who Regret Original Plan Choice, by Plan Enrollment [1]

Notes:
[1] In the survey we asked plan participants, "*If you were making your pension plan choice today, which plan would you choose?*". We classify a plan participant as experiencing regret if the plan selected in response to this question differs from their actual plan enrollment according to SURS administrative data (coded 100 for regret, 0 otherwise).

Table I
Survey Respondent Descriptive Statistics

	Percent of Respondents		Percent of Respondents
Actual plan enrollment per SURS		**Socioeconomic characteristics**	
Traditional (defined benefit) by default	22.0 %	Position when entered SURS:	
Active choice of:		support staff	22.7 %
Traditional (defined benefit)	17.6 %	executive	1.7 %
Portable (hybrid)	33.1 %	academic professional	29.6 %
Self-Managed (defined contribution)	27.3 %	tenured faculty	2.1 %
Correctly identified plan enrollment in survey		untenured faculty	9.1 %
Traditional (defined benefit) by default	94.6 %	non-tenure track faculty	21.0 %
Active choice of:		other	13.9 %
Traditional (defined benefit)	98.6 %	Income:	
Portable (hybrid)	86.2 %	<$20,000	19.9 %
Self-Managed (defined contribution)	95.2 %	$20,000-$39,999	27.4 %
Information-based problems		$40,000-$59,999	27.0 %
Unaware of default provision	10.2 %	$60,000-$79,999	12.4 %
Information from SURS rated not helpful	34.0 %	$80,000-$99,999	4.9 %
Investment preferences and skill		$100,000-$119,999	2.5 %
Prefer to take investment risks that are:		>$119,999	3.6 %
average	62.3%	Net worth:	
above average	29.4%	<$20,000	13.0 %
Self-assessed investment skill:		$20,000-$49,999	12.1 %
medium skill level	38.4 %	$50,000-$99,999	17.4 %
high skill level	32.4 %	$100,000-$249,999	21.9 %
Beliefs about job tenure and political risk		$250,000-$499,999	11.6 %
Plan to stay in SURS job for a long time	29.8 %	>$499,999	12.5 %
No confidence in Illinois legislature	72.1 %	Female	59.7 %
General and decision-specific knowledge		Married	71.1 %
Correctly answered both questions on:		Has children	63.4 %
basic financial literacy	30.3 %	Below-average health	2.0 %
basic SURS knowledge	51.0 %	Age:	
advanced SURS knowledge	7.0 %	25 or younger	17.8 %
Education level:		26-35	29.6 %
bachelor's degree	23.2 %	36-45	23.2 %
masters' degree	40.5 %	46-55	22.7 %
doctoral degree	19.2 %	56-65	6.2 %
Holds business or economics degree	16.6 %	older than 65	0.6 %

Table II
Linear Regression of Likelihood of Defaulting into Pension Choice (in percentage points) [1]

Independent Variable	Coefficient (Robust Std. Error) [2]
Information-based problems	
Unaware of default provision	14.9 (2.3) ***
Information from SURS rated not helpful	16.0 (1.4) ***
Investment preferences and skill	
Prefer to take investment risks that are:	
average	-7.4 (2.4) ***
above average	-10.0 (2.6) ***
Self-assessed investment skill:	
medium skill level	-0.8 (1.5)
high skill level	-1.0 (1.7)
Beliefs about job tenure and political risk	
Plan to stay in SURS job for a long time	2.1 (1.4)
No confidence in Illinois legislature	-3.8 (1.3) ***
General and decision-specific knowledge	
Correctly answered both questions on:	
basic financial literacy	-3.4 (1.2) ***
basic SURS knowledge	-2.4 (1.2) **
advanced SURS knowledge	-6.4 (2.0) ***
Education level:	
bachelor's degree	-3.5 (2.8)
masters' degree	-6.7 (2.9) **
doctoral degree	-11.3 (3.1) ***
Holds business or economics degree	1.7 (1.5)
Socioeconomic characteristics	
Position when entered SURS:	
executive	1.1 (4.7)
academic professional	1.3 (1.9)
tenured faculty	1.2 (4.3)
untenured faculty	-0.6 (2.6)
non-tenure track faculty	3.1 (2.2)
other	2.3 (2.1)
Income:	
$20,000-$39,999	2.5 (1.9)
$40,000-$59,999	1.0 (1.9)
$60,000-$79,999	1.8 (2.3)
$80,000-$99,999	2.1 (3.1)
$100,000-$119,999	5.0 (3.6)
>$119,999	-1.2 (3.3)
Net worth:	
$20,000-$49,999	1.5 (2.3)
$50,000-$99,999	-1.6 (2.1)
$100,000-$249,999	-3.7 (2.0) *
$250,000-$499,999	-3.0 (2.5)
>$499,999	-7.2 (2.5) ***
Female	-5.6 (1.2) ***
Married	-0.5 (1.4)
Has children	0.5 (1.4)
Below-average health	-3.3 (3.9)
Age	0.0 (0.4)
Age^2	0.0 (0.0)
Model statistics	
N	4,502
Adjusted R^2	19.3%

Table II (continued)

Table III
Linear Regression of Likelihood of Regret for Those Who Defaulted (in percentage points)[1]

Independent Variable	Coefficient (Robust Std. Error) [2]
Information-based problems	
Unaware of default provision	18.6 (4.0) ***
Information from SURS rated not helpful	14.9 (3.2) ***
Investment preferences and skill	
Prefer to take investment risks that are:	
average	10.3 (4.1) **
above average	24.4 (5.2) ***
Self-assessed investment skill:	
medium skill level	10.2 (3.4) ***
high skill level	13.3 (4.2) ***
Beliefs about job tenure and political risk	
Plan to stay in SURS job for a long time	-8.3 (3.4) **
No confidence in Illinois legislature	5.5 (3.2) *
General and decision-specific knowledge	
Correctly answered both questions on:	
basic financial literacy	-3.3 (3.6)
basic SURS knowledge	2.9 (3.2)
advanced SURS knowledge	0.5 (7.3)
Education level:	
bachelor's degree	8.0 (5.7)
masters' degree	7.6 (5.9)
doctoral degree	12.3 (7.2) *
Holds business or economics degree	2.3 (4.3)
Socioeconomic characteristics	
Position when entered SURS:	
executive	-15.3 (11.8)
academic professional	1.1 (4.9)
tenured faculty	-11.0 (12.6)
untenured faculty	-5.7 (7.7)
non-tenure track faculty	-3.0 (5.3)
other	4.1 (4.8)
Income:	
$20,000-$39,999	3.2 (4.6)
$40,000-$59,999	8.1 (5.0)
$60,000-$79,999	6.1 (5.8)
$80,000-$99,999	0.7 (7.6)
$100,000-$119,999	-4.1 (10.2)
>$119,999	13.7 (12.5)
Net worth:	
$20,000-$49,999	4.4 (5.7)
$50,000-$99,999	5.6 (5.5)
$100,000-$249,999	9.6 (5.7) *
$250,000-$499,999	-2.2 (6.5)
>$499,999	9.0 (7.1)
Female	3.4 (3.1)
Married	-5.1 (3.7)
Has children	-0.6 (3.5)
Below-average health	-7.5 (9.5)
Age	0.2 (0.9)
Age^2	0.0 (0.1)
Model statistics	
N	982
Adjusted R^2	17.4%

Table III (continued)

[1] Results are from a linear probability model (OLS) with the dependent variable coded 100 if a respondent said s/he would choose a different plan today (i.e., the Portable or Self-Managed Plan) than the one in which s/he is enrolled (i.e., the Traditional Plan), and 0 otherwise. Controls for respondents' year of entry into SURS and "don't know" responses to various survey questions are also included as independent variables in the model but are not reported.

[2] Statistical significance at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

Table IV
Effects of Measures of Information-Based Problems on Likelihood of Regret,
by Traditional Plan Enrollment Mechanism (in percentage points) [1]

	Baseline Likelihood of Regret	Effect of Being Unaware of Default Provision on Likelihood of Regret	Effect of Information from SURS Rated Not Helpful on Likelihood of Regret
Coefficient (robust std. error) [2] for respondents enrolled via:			
Default	[omitted category]	19.2 (3.9) ***	14.7 (3.1) ***
Active choice	-8.5 (2.6) ***	-8.2 (5.2)	12.7 (3.2) ***
Comparison of coefficients across:			
Default and Active choice mechanisms	p-value = 0.001 ***	p-value = 0.000 ***	p-value = 0.645

Notes:

[1]   Reported coefficients are from a linear probability model (OLS) estimated with the subsample of all respondents enrolled in the Traditional plan either by default or an active choice (N = 1,763). The dependent variable is coded 100 if a respondent said s/he would choose a different plan today (i.e., the Portable or Self-Managed Plan), and 0 otherwise. Independent variables include all those reported in Table III, as well as variables for the mechanism through which a respondent enrolled in the Traditional Plan – via default (the omitted category) or an active choice; interactions between the enrollment mechanism variables and reporting a lack of awareness of the default provisions of the retirement plan; and interactions between the enrollment mechanism variables and rating the information provided by SURS as not helpful. The adjusted R^2 of the model is 18.3%.

[2]   Statistical significance at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.