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A NUDGE ISN'T ALWAYS ENOUGH

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Introduction

Over the past decade, researchers have focused attention on a new approach for encouraging Americans to adopt beneficial behaviors. This approach relies on making the desired behavior occur automatically unless an individual chooses to opt out. A prominent example is automatic enrollment in 401(k) plans, in which employees are signed up for the plan at a default contribution rate if they do not take any action. This policy has proven to be a potent way to boost participation rates.

While such default design strategies can improve some saving decisions, researchers have begun exploring their potential limitations. For example, one recent study found that setting a very high default contribution rate for a workplace saving plan caused many workers to choose a different rate.[1] This *brief* is based on a new study that also tests the limits to default design through an experiment to encourage low-income individuals to save about 10 percent of their tax refund.

The discussion is organized as follows. The first section describes the behavioral theory behind default design. The second section explains how defaults were used to nudge some low-income tax-filers to buy U.S. Savings Bonds with a portion of their tax refund. The third section discusses the results: the tax filers who were "nudged" to invest in the bonds were no more likely than other low-income filers to participate, apparently because they already had plans to spend their refunds. The final section concludes that policies that rely on default design may not work when they clash sharply with individuals' intentions.

The Nudge: Default Design Explained

Default design principles have been used to influence a range of behaviors, from organ donation to online marketing.[2] In the area of financial decisions, default design in 401(k) plans has shown great potential. For example, an early study found that after switching to auto-enrollment, one large company saw participation rates rise by 50 percentage points for new hires.[3] Some companies with auto-enrollment also increase the default contribution rate gradually over time, which boosts saving levels among participants.[4] Buoyed by such evidence, policymakers explicitly encouraged the spread of auto-enrollment in the Pension Protection Act of 2006.[5] Today, about 45 percent of 401(k) plans are using auto-enrollment for new hires.[6]

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While default design techniques clearly can influence behavior, the reasons for their success are less clear. Researchers have offered several potential explanations.[7] In the 401(k) example, workers may accept a nudge to save for retirement, because it pushes them to carry out what they intended to do anyway. Auto-enrollment may also benefit from an "endorsement" effect, with workers interpreting the employer's guidance as an expert recommendation. Further, workers may feel that actively opting out of a 401(k) could cause more regret than simply staying where they are put. Finally, workers may be comfortable with auto-enrollment because they feel they have the ability to alter the default contribution rate at any time, meaning it is not a "one-shot" decision.[8] In short, the design of defaults and the environment in which they operate may determine their effectiveness.

A recent study in which one U.K. employer set a default rate of 12 percent exposed a potential limitation in the auto-enrollment approach.[9] In this case, about three out of four employees opted out of the default contribution rate, choosing a different rate.[10]

Building on this notion of testing the limitations to default design, the experiment described below chose a different type of environment – tax preparation centers that help low-income individuals file income taxes. Because many low-income filers receive sizable refunds, tax time seems an opportune moment to encourage saving.[11] And boosting saving among low-income individuals is a policy priority because they are less likely to save voluntarily.[12]

Defaults appear far less effective when they clash with individuals' intentions.

Experiment Design and Methodology

Previous experiments to boost saving among low-income tax filers have shown some effects. In a 2005 experiment, H&R Block agreed to match either 20 percent or 50 percent of tax refunds invested in an IRA, with a maximum match of $500. This approach increased participation from 3 percent for the control group to 14 percent for the group receiving the 50 percent match. And, conditional on participation, those in the treatment group saved larger amounts than their control group counterparts.[13] However, a 2009 pilot savings program allowing individuals to direct part of their refund to U.S. Savings Bonds resulted in a take-up rate of only 6 percent.[14]

The Experiment

The experiment was conducted between February and April 15, 2010 at eight IRS-sponsored Volunteer Income Tax Assistance (VITA) offices in the Pennsylvania counties of Delaware and Montgomery, near Philadelphia.[15] VITA provides free tax-preparation services to filers with annual household incomes below $50,000. To motivate general interest in savings bonds and provide VITA clients with information on the features of the bonds, the waiting areas were decorated with savings bond posters.[16]

The test randomly selected half of eligible VITA clients to have a small portion – approximately 10 percent – of their tax refunds automatically invested in the bonds.[17] The remaining half of clients could voluntarily sign up to buy savings bonds. The study had 259 research subjects, with an average age of 37; 68 percent were women; and their average adjusted gross income was $18,000. The tax filers in the study received an average federal refund of $1,900.

Design and Methodology

Each tax preparer was given a pad of forms that either automatically assigned VITA clients to the savings bond purchase program or simply asked whether they would like to purchase a savings bond with their tax refund. To randomize the sample, the forms in each pad alternated between the treatment group – those automatically signed up – and the control group – those who needed to actively choose to sign up.

Much of the text in the two forms was identical: both were titled "Your Refund/Savings Bond Worksheet" and provided tax filers with the dollar amount of their adjusted gross income and the size of their anticipated refunds. After providing this information, however, the forms used different wording to introduce the savings bond program to the control and treatment groups.

The tax filers assigned to the control group received simple instructions to fill out how much – *if any* – of their refund they would like to invest in savings bonds (see Box 1).

Box 1. Instructions for Control Group: Voluntary Purchases

U.S. Savings Bonds are a safe and easy way to build savings for the future. You can choose to receive $0 to $5,000 of your refund (in multiples of $50) as U.S. Savings Bonds.

Indicate the amount of U.S. Savings Bonds you want here.
(Enter 0 if no bonds purchased; your amount must be a multiple of $50) $ _____.00

In contrast, the treatment group's form did not ask whether the individuals wanted to participate – it assumed they would. The form, shown in Box 2, simply asked them to review the amount of their refund that would be automatically diverted to the savings bond program.

Box 2. Instructions for Treatment Group: Automatic Purchases

U.S. Savings Bonds are a safe and easy way to build savings for the future. You can choose to receive $0 to $5,000 of your refund (in multiples of $50) as U.S. Savings Bonds.

The **circled** amount below – approximately 10 percent of your refund – will be automatically directed to U.S. Series I Savings Bonds in your name unless you decide to change that amount.

Tax refund	U.S. Savings Bonds	Tax refund	U.S. Savings Bonds
$0-$500	$0	$2,500-$2,999	$250
$500-$999	$50	$3,000-$3,499	$300
$1,000-$1,499	$100	$3,500-$3,999	$350
$1,500-$1,999	$150	$4,000-$4,499	$400
$2,000-$2,499	$200	$4,500-$4,999	$450
$2,500-$2,999	$250	$5,000+	$500

(Optional)
If you would want a different amount of U.S. Savings Bonds, indicate the amount here.
(Enter 0 if no bonds purchased; your amount must be a multiple of $50) $ _____.00

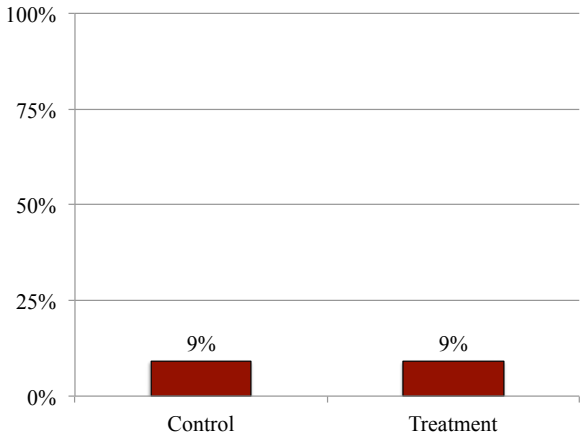
Results

To assess the results of this experiment, a regression analysis was used with savings bond purchase as the dependent variable. The primary independent variable was inclusion in the treatment group. The model also controlled for demographic characteristics such as age, income, and race, and for such external effects as having a tax preparer who was more in favor of savings bonds.[18] A separate regression analysis assessed whether, conditional on purchasing savings bonds, the treatment group purchased a higher dollar value of savings bonds than the treatment group.

The results found that the default strategy had no effect on low-income tax filers' participation rates: only 9 percent of individuals in both the experimental and control groups agreed to buy savings bonds (see Figure 1). And, for those individuals who did buy savings bonds, the treatment did not affect the amount of bonds that they purchased.

The regression results clearly do not support the default approach, but they also do not explain why it failed. One plausible explanation is found in surveys

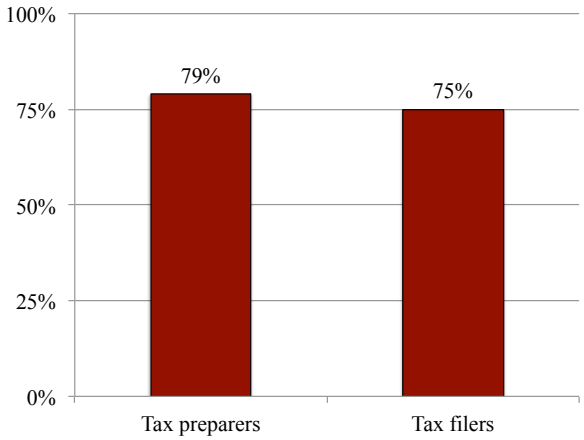
Figure 1. Percentage of Participants Purchasing Savings Bonds, Control and Treatment Groups



Source: Bronchetti et al. (2011).

of both the VITA tax preparers and the tax filers. When the tax preparers were asked why they thought tax filers resisted the savings bond program, 79 percent said it was because their clients had already made plans to spend the refunds. An intake survey of the tax filers themselves corroborated this view: 75 percent said they expected to spend their refunds (see Figure 2), and only 17 percent said they planned to save some of their refunds.

Figure 2. Percentage of Survey Respondents Indicating That Tax Filers Had Plans to Spend Their Refunds, by Type of Respondent



Source: Bronchetti et al. (2011).

Since most tax filers had plans to spend the refunds, they were less likely to purchase savings bonds even though, if they were in the treatment group, it required them to reject the default. In contrast, 401(k) auto enrollment may be powerful precisely because it coincides with employees' pre-existing intentions to save for retirement. Another possible explanation is the lack of flexibility involved in the savings bond experiment. Unlike with 401(k) plans, a case in which people feel like they can change their contribution rate at any time, the savings bonds purchase was a one-shot decision – participants would have to wait a year before having the option to redeem their bonds.[19] Finally, the different financial circumstances and demographic characteristics of the low-income filers compared to workers who are offered 401(k)s could also influence the results.

Conclusion

In contrast to the success of 401(k) auto enrollment, the default design of the savings bond experiment did not increase either the likelihood of purchasing bonds or the amount of bonds purchased for those participating. A likely reason is that the low-income individuals targeted by the experiment had already planned to spend their refund checks and, when faced with a one-shot decision, these prior intentions outweighed any pro-saving effects from a perceived recommendation by the tax preparers or from regret that overriding the default might be a mistake.

These findings raise important questions for policymakers interested in default design techniques. Specifically, default mechanisms to promote saving may not easily translate to all target groups and all environments. In circumstances in which workers have a strong preference for an action that is contrary to the default, these mechanisms appear far less effective. In short, a nudge is just that – a nudge and not a shove.

Endnotes

1 Beshears et al. (2010).

2 See Abadie and Gay (2000) for organ donation and Johnson, Bellman, and Lohse (2002) for Internet marketing.

3 Madrian and Shea (2001). For other examples, see Beshears et al. (2008) and Choi et al. (2002, 2004).

4 For an experiment that helped demonstrate the potential of the auto-escalation approach, see Thaler and Benartzi (2004).

5 The Act's provisions included fiduciary relief for plan sponsors with auto enrollment provided under the Qualified Default Investment Alternative provisions, a new design-based safe harbor for meeting certain nondiscrimination tests, and exemption from state laws prohibiting garnishment of wages.

6 Plan Sponsor Council of America (2012).

7 See Bronchetti et al. (2011) for a review of the literature.

8 While workers can stop contributing or can alter their contribution rate freely, they cannot easily get at the money that they have already saved, as it is designed to be held until retirement. Thus, with respect to their prior contributions, 401(k) participants have less flexibility in "undoing" the outcome than the low-income tax filers in the experiment described in this *brief*.

9 Beshears et al. (2010).

10 After one year, only 25 percent of employees continued at the default contribution rate in the U.K. plan, compared with 60 percent retention in auto-enrollment plans with more modest employee contribution rates. See Beshears et al. (2010).

11 The Earned Income Tax Credit is one reason that low-income filers tend to receive large refunds relative to their incomes.

12 For example, according to the 2010 *Survey of Consumer Finances*, less than 60 percent of employees earning under $20,000 per year enroll in their employers' 401(k) plan. Participation rates steadily increase with income, reaching up to 90 percent among workers earning $60,000 or more.

13 Duflo et al. (2006).

14 D2D Fund (2009).

15 Bronchetti et al. (2011).

16 Tax preparers had been trained in the features of U.S. Savings Bonds but were coached to stick to a limited script that did not suggest any course of action.

17 The program allowing individuals to direct part of their refund into savings bonds was introduced by the federal government for the 2010 tax filing season. To be eligible, filers had to be slated to receive refunds of at least $50 and had to use direct deposit.

18 For more details on the quantitative analysis and the results, see Bronchetti et al. (2011).

19 The Series I Savings Bonds used in the experiment are subject to the following redemption restrictions: no redemption in the first year of ownership, except under certain extreme conditions (e.g., natural disasters); a penalty of three months of interest for redemptions within one to five years of purchase; and no penalty for redemptions after five years.

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