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DO INCOME PROJECTIONS AFFECT RETIREMENT SAVING?

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Introduction

Americans' retirement security increasingly depends on how much they save during their working years. One impediment to making good saving decisions may be a lack of knowledge on how saving translates into income in retirement. To address this issue, the U.S. Congress has considered whether to require 401(k) plans to project the value of a lifetime annuity that the participant could purchase at retirement given his current savings.[1] By explicitly showing the connection between saving and income in retirement, the hope is that workers will generally make better saving decisions.

This *brief* is based on a recent field experiment, conducted with employees of the University of Minnesota, which tested the effect of retirement income projections on saving decisions.[2] The *brief* proceeds as follows. The first section describes the experimental treatments and the methodology used to analyze the results. The second section presents the results, which address three specific questions: 1) Did subjects receiving the treatments change their saving and by how much? 2) Was any change random or did the treatments improve subjects' knowledge and confidence? and 3) Did personal characteristics influence the saving decisions? The final section concludes that providing individuals with retirement income projections, along with related information on retirement planning, could modestly increase saving at low marginal cost.

Data and Methodology

The field experiment involved nearly 17,000 employees of the University of Minnesota. Compared to the national population, these workers are more highly educated and they have more retirement savings because they are covered by Social Security and one of two generous employer plans.[3] In addition, they can also contribute to a tax-deferred Voluntary Retirement Plan (VRP). The experiment tested the effect of providing employees with age-specific projections of the additional retirement income they could get if they were to make additional contributions to a VRP.[4]

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The experiment divided the sample population into four groups – a control group and three treatment groups, with each treatment group receiving one of three brochures (see Table 1).[5] The "planning treatment" brochure provided general information on saving for retirement and a step-by-step guide for signing up or changing contributions to a VRP. The "balance treatment" brochure added age-specific projections of how hypothetical additional contributions would translate into additional balances at retirement. The "income treatment" brochure added age-specific projections of how the additional contributions would increase retirement income.[6]

Table 1. Content of Brochures by Treatment Group

Information provided	Treatment			
	Control	Planning	Balance	Income
General information	–	X	X	X
Balance projections	–	–	X	X
Income projections	–	–	–	X

Source: Goda, Manchester, and Sojourner (2012).

To measure the effect on saving, the project used two main outcome measures: 1) whether an employee made any change in his VRP contribution within six months of receiving the brochure; and 2) the change in the amount of the contribution for all employees.

Given this approach, the project estimated the effect of the treatments with the following equation:

$$S_i = \alpha + T_i\delta + X_i\beta + \eta_q + \epsilon_{i,d}$$

where S_i is one of the two outcome measures; T_i is a vector of treatment group variables; X_i is a vector of controls for age, tenure, salary, gender, faculty status, changes in salary, and campus location; and η_q are randomization-quad fixed effects. The error term ($\epsilon_{i,d}$) is clustered at the department-level (d), the unit of primary randomization.

The project also included a supplemental survey conducted after the six-month period to better understand *how* the treatments affected saving behavior. The supplemental survey included questions on subjects' knowledge and confidence about retirement planning and saving. The analysis used the same equation as above to test whether knowledge and confidence were related to the treatments.

The survey also collected information on personal characteristics identified in the research literature as either limiting or enhancing retirement saving – economic factors such as an individual's ability to cover his expenses, behavioral factors such as procrastination, and cognitive factors such as level of financial literacy.[7] The analysis then interacted these personal characteristics with the treatment indicators to estimate whether the treatments had a different effect on one of the main outcome measures – changes in the amount of saving contributions – across these characteristics.

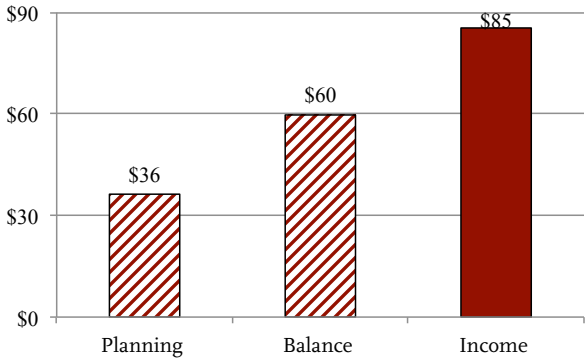
Experiment Results

As indicated above, the experiment was designed to assess three main effects of the treatments: 1) whether, and by how much, subjects changed their saving; 2) whether the treatments increased subjects' knowledge and confidence; and 3) whether subjects' personal characteristics affected their response to the treatments in terms of saving decisions.[8]

How Did the Treatments Affect Saving?

The results show that the "income treatment" had a statistically significant effect on the likelihood that workers would change their contributions and on the amount of their contributions. Compared to the control group, individuals in the income group were 1.2 percentage points more likely to change their contributions during the six-month period following receipt of the brochures – 5.3 percent vs. 4.1 percent. The income group as a whole (including both those who changed contributions and those who did not) increased its retirement saving, on average, by $85 more than the control group (see Figure 1 on the next page).[9] However, considering only the individuals who made a change, those in the "income group" increased their saving by a much larger amount – $1,150 more per year than those in the control group. Relative to the control group, individuals in the other two treatment groups – the "planning group" and "balance group" – were also more likely to change their VRP contributions but did not show a statistically significant increase in the amount of saving.

Figure 1. Effect of Treatments on Change in Average Annual Retirement Saving for All Subjects



Note: The solid bar indicates the change in annual retirement saving is statistically different from that of the control group at the 5-percent level.
Source: Goda, Manchester, and Sojourner (2012).

Using the planning group instead of the control group as the point of comparison, the balance and income treatments did have a positive effect on saving but the differences were not statistically significant. This finding suggests that it was not the income projections alone, but the *combined* effect of providing retirement planning information along with the balance and income projections that encouraged the increase in saving for those in the income group.

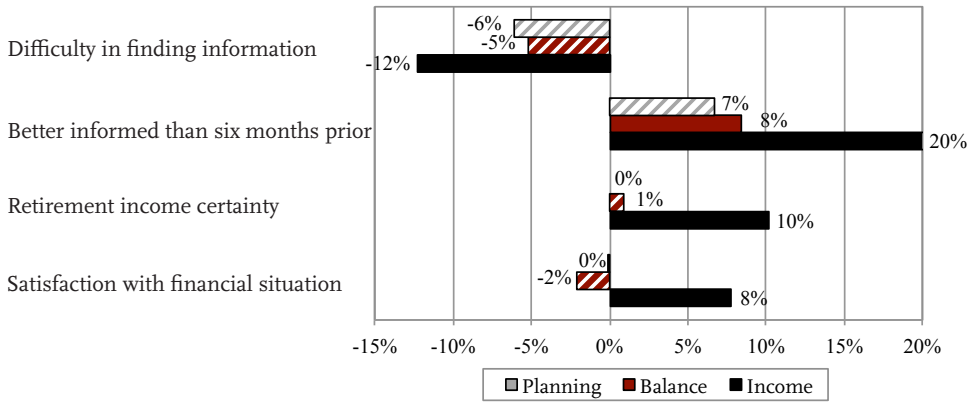
How Did the Treatments Affect the Saving Decision-Making Process?

To help determine whether the saving responses to the income treatment were connected to improved knowledge and confidence, the supplemental survey asked several questions connected to the saving decision-making process.

The survey response rate was 22 percent, and respondents were somewhat different from the overall group, which warrants caution when interpreting these results.[10] These findings nevertheless offer some useful insights into the saving decisions.

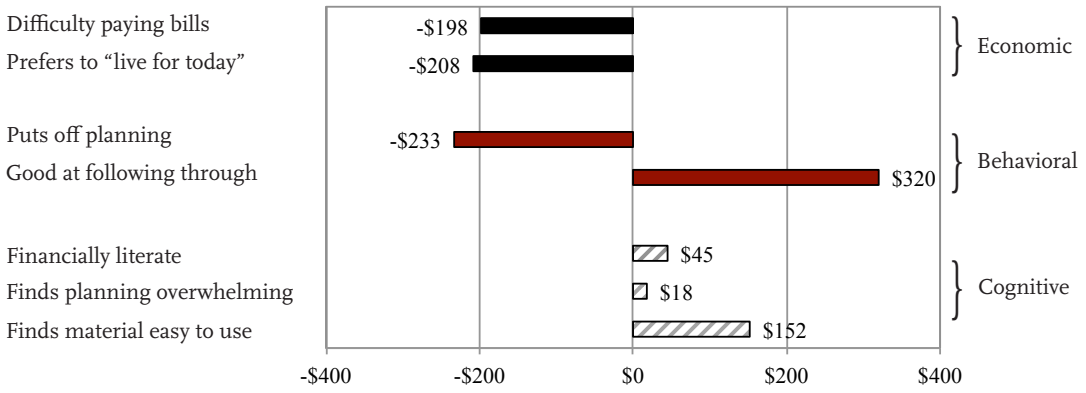
The responses show that the income treatment had a beneficial, and statistically significant, effect on knowledge and confidence. Compared to the control group, the income group reported less difficulty finding information about how much to save for retirement and being better informed about retirement planning than they were six months prior. They also reported being more certain about their expected retirement income and more satisfied with their financial condition (see Figure 2).[11] Responses of

Figure 2. Effect of Treatments on Subjects' Retirement Saving Knowledge and Confidence



Note: The solid bars indicate the coefficient is statistically significant at least at the 10-percent level. All effects are measured relative to the control group.
Source: Goda, Manchester, and Sojourner (2012).

Figure 3. Effect of Personal Characteristics on Changes in Annual Retirement Saving for Income Treatment Group, Dollars



Note: The size of the bars represent how the treatment effect varies with a one-standard-deviation change in the listed characteristic. The solid bars indicate the coefficient is statistically significant at least at the 5-percent level.
Source: Goda, Manchester, and Sojourner (2012).

individuals in the planning and balance groups were generally not statistically different from those of the control group.

What Factors Limited or Enhanced the Income Treatment's Effect?

The survey also asked subjects about their personal characteristics – economic, behavioral, and cognitive – to see if these factors influenced the magnitude of the intervention's effect on saving decisions. The results show that the effect of the income treatment on retirement saving was significantly reduced by a difficulty in paying bills, a strong preference for living "pretty much for today," and a tendency to procrastinate, and was significantly enhanced if the respondent was good at following through. Interestingly, cognitive ability and financial literacy generally had little effect, and in no case a statistically significant effect (see Figure 3).[12]

Conclusion

It should come as no surprise that educational initiatives, such as the treatments used in the field experiment, are not a silver bullet that could solve the nation's retirement saving problem. Only a small percentage of individuals respond to the treatments, so the overall effect on saving is modest, though those who do respond boost their saving by a sizable amount. The income treatment generates the most significant response, likely due to the combined effect of providing balance and income projections in tandem with general information on retirement planning. The income treatment works, in part, by boosting individuals' knowledge and confidence. But its effect on saving is limited among those with personal characteristics known to reduce retirement saving. It should be noted that a limited saving response is rational to the extent that increased saving may not be feasible or desirable for everyone depending on individuals' personal circumstances. For such individuals, educational initiatives that allow such limited responses could be preferable to other policies designed to promote saving, such as mandates or defaults.

Endnotes

1 The Lifetime Income Disclosure Act (S. 267 and H.R. 677) and the SAVE Act of 2011 (H.R. 1534) were introduced in 2011 during the 112th Congress. Both of these proposals would require the provision of retirement income projections to participants in retirement saving plans.

2 Goda, Manchester, and Sojourner (2012).

3 Faculty and administrative staff must contribute 2.5 percent of covered earnings, matched by a 13-percent contribution from the University, to a 401(k)-type defined contribution plan. Other employees are covered by a contributory defined benefit pension plan: workers must contribute 5 percent of earnings and at age 65 get a pension equal to 1.7 percent of the average of their highest five years' earnings, for each year of service.

4 This study is the first field experiment of its sort in the United States. Song (2012) examined the effects of an educational intervention in China designed to encourage saving by improving financial literacy concerning the benefits of compound interest.

5 Individuals in the balance and income groups were also provided access to an online customization tool designed to mimic the information provided in the printed materials and offer additional features. Such tools are readily available via investment companies' websites and would complement any policy initiative on income disclosure by plan sponsors.

6 To reduce the likelihood of contamination across treatment groups, the project chose the department as the unit of randomization. Departments were sorted by size, income and age into four-group clusters. Each department in a quad was randomly assigned to one of the three treatment groups or the no-treatment control group. Every person in a department was either in the control group or the same treatment group. The procedure produced treatment groups balanced on observable characteristics.

7 For behavioral factors, see Thaler and Benartzi (2004). For cognitive factors, see Lusardi and Mitchell (2007).

8 The study also examined whether the choice of assumptions and other information used in the treatments for projecting saving balances at retirement and income in retirement, such as the rate of return on saving and the dollar amounts of hypothetical contributions, affected the subjects' decisions. For details on these findings, see Goda, Manchester, and Sojourner (2012).

9 The control group also increased its saving, so the effects presented here are the amounts over and above their increase. For example, the whole control group increased its saving by $83 annually, so the income group increased its saving by $169 annually.

10 Respondents were disproportionately female, faculty, and VRP participants. Nevertheless, the survey sample is balanced on observable demographics across treatment groups. Observed treatment effects were also substantially higher among survey respondents.

11 Dependent variables are Z-scores of responses, on a scale from 1 to 7, of self-assessments of the particular characteristic. The Z-score for a particular characteristic is the individual's response, less the sample mean, divided by the sample standard deviation.

12 For each measure, the individual's response on a scale from 1 to 7 is turned into a Z-score – the response, less the sample mean, divided by the sample standard deviation. The coefficients shown are the change in retirement saving, for those in the income group, resulting from a Z-score one standard deviation higher.

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The Center for Retirement Research at Boston College was established in 1998 through a grant from the Social Security Administration. The Center's mission is to produce first-class research and educational tools and forge a strong link between the academic community and decision-makers in the public and private sectors around an issue of critical importance to the nation's future. To achieve this mission, the Center sponsors a wide variety of research projects, transmits new findings to a broad audience, trains new scholars, and broadens access to valuable data sources. Since its inception, the Center has established a reputation as an authoritative source of information on all major aspects of the retirement income debate.

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