In May of 2015, the Pension Research Council of The Wharton School of the University of Pennsylvania and the TIAA-CREF Institute co-hosted a Research Forum on Innovations in Retirement Policy and Practice, in Washington, DC. Speakers included two policymakers, Ohio Senator Rob Portman and Georgia Senator Johnny Isakson, along with the President and CEO of TIAA-CREF, Roger Ferguson, and Director of the Pension Research Council, Olivia S. Mitchell. Attendees comprised thought leaders from across North America, including academics, policy staffers, plan sponsors, and the media.

In what follows, we summarize the key research takeaways and policy findings from this event. Additional detail on the research presentations appears in the second portion of this document.

**Session One**

The first session of the meeting was entitled “Retirement Plan Design: The Roles of Choice and Behavior,” and it included three presentations by top-level academics from across the country.

John Beshears described his work with co-authors Hengchen Dai, Katherine L. Milkman, and Shlomo Benartzi, in a paper entitled “Save More Later and Particularly after Your Next Birthday: The Effect of Procrastination on Retirement Savings.” This research tested whether an option to enroll “later” increases savings by leveraging individuals’ tendency to prefer putting off virtuous behaviors. It also evaluated whether a salient “later” can be particularly motivating. Accordingly, in this study, the team examined how to design plan choice architecture to best create an environment that promotes increased retirement savings and security.

Beshears argued that the so-called “fresh start effect,” or tying a promotion of a retirement plan into a life milestone such as a birthday, can be a powerful motivator to induce participation into a retirement plan. Therefore, he concluded that plan sponsors should consider contacting people close to those milestones and not simply telegraphing them in a less individualized way. They also should consider directly contacting participants by email, letter, phone call, or even via an in-person conversation, to remind them of their opportunities to break with their past bad behavior.
A second study by Gopi Shah Goda and her co-authors Matthew R. Levy, Colleen F. Manchester, Aaron J. Sojourner, and Joshua Tasoff, was entitled “The Role of Exponential-Growth Bias and Present Bias in Retirement Savings Decisions.” The goal of this analysis was to describe cognitive and motivational biases, their relationships with retirement saving decisions, and interventions designed to mitigate their impacts on retirement wealth accumulation. Goda discussed both cognitive barriers to saving (termed ‘exponential-growth bias’) and motivational barriers (termed ‘present-growth bias’).

The researchers carried out several surveys via the American Life Panel, a nationally representative, probability-based panel of more than 6,000 adults who are regularly interviewed over the Internet for research purposes. They adopted a two-phase survey design, where the first phase allowed them to measure exponential growth and present biases and collect information on household savings and other financial behavior. The second phase distributed randomized intervention options across participants, allowing the team to understand the impact of the interventions and how they mitigated the biases, if at all. They found that respondents lacking both biases had retirement savings that were 50% to 60% higher than individuals with either the exponential-growth bias or the present bias. Successful methods to mitigate the biases included giving plan participants deadlines tied to a reward and providing projections about annual income in retirement.

To close the session, Olivia S. Mitchell presented work with her co-author Donald Keim, entitled “Complexity of Choice and Defined Contribution Plan Design.” In most defined contribution retirement plans, participants are presented with multiple investment options in an employer-designed plan menu. Participants then decide how to allocate their investments among those funds, spreading their contributions across multiple options or concentrating them in a handful of funds. Recent research in social psychology has concluded that providing too many choices can create confusion and result in poorly informed consumer decisions. Accordingly, this analysis examined what happened when a plan sponsor simplified a complex menu of investment options.

Using administrative data from a large, nonprofit institution with about 5,000 participants who went through a fund streamlining process, the team explored how “streamlined” participants – that is, those individuals who held one of the deleted funds – responded to the realignment. They found that participants shifted to safer, target-date funds. Moreover, streamlined participants also had fewer funds overall, leading to lower turnover rates, lower expense ratios,
and an overall decrease in systemic risk in their portfolios.

Session Two

The second session was devoted to “Exploring Implications for Workforce Financial Literacy and Plan Cost,” and it included two presentations by top-level researchers.

Irina Stefanescu gave a talk on her work with Veronika K. Pool and Clemens Sialm entitled “Defined Contributions Provider Networks.” This research explored how various aspects of a retirement plan’s design can influence plan costs. The team found that mutual fund families which also serve as trustees for 401(k) plans tend to favor their own funds when helping to develop the investment menu. This, they argued, tended to result in some funds remaining ‘in the mix’ longer even when performance faltered. Nevertheless, they concluded that participants were often unable to note those biases. On average, these funds underperformed by about 4% per year.

Pierre-Claud Michaud spoke on research with Annamaria Lusardi and Olivia S. Mitchell, on a paper entitled “Optimal Saving Behavior: Implications for Financial Education and Policy.” This research showed how employers can be actively involved in enhancing financial literacy and retirement saving.

Michaud discussed how the model developed and calibrated in this study may be used to compare alternative scenarios. The team conceives of financial literacy as a form of human capital that comes at a cost – a sometimes-unpleasant few hours stuck in a room hearing about 401(k) plans, for example. Yet there is a benefit as well, in that more financially savvy individuals can access higher expected return investments. As a result, for some, their decision will be counterintuitive to the conventional wisdom: given a flat income stream and a high retirement replacement rate, it may be optimal not to invest much in financial knowledge. By contrast, better educated individuals will have higher savings goals and a higher potential reward from investing and increasing the return on their savings, goals...
that can be achieved with the help of increased financial literacy.

According to this model, the ideal time to introduce retirement savings literacy is around age 40, when saving peaks; earlier attempts at education tend not to have a lasting effect. But the interventions must be accompanied by follow-ups to ensure the highest impact.

**Policymakers’ Comments**

Keynote addresses were also offered at the Forum, by Senators Rob Portman (R-OH) and Johnny Isakson (R-GA). In their remarks, the senators offered thoughts on the nation’s retirement system, tax and Social Security reforms, and how to encourage smart savings and investing for American workers.

Sen. Portman opened by reflecting on his early work on the Ways and Means Committee, to which he was posted due to his background as a small-business lawyer in Cincinnati. His own father had set up a profit sharing plan before adding a 401(k) with a match, and this experience led him to recognize that employer-based saving plans work. In particular the Senator applauded the move to auto-enroll employees in their plans, and also the adoption of automatic escalation of contribution rates.

Nevertheless Portman recognized that the U.S. retirement system needs to be improved, in particular because many Americans still do not save enough, and many employers do not offer plans. He also identified as a challenge the prevalence of lump-sum payouts, which undermines lifelong retirement protection. Portman was also critical of the Department of Labor’s efforts to change fiduciary rules regarding retirement plan advice. On the plus side, he underscored the need for financial literacy and the importance of such knowledge for retirement peace of mind.

Sen. Isakson noted that his interest in benefits and retirement saving in particular stemmed from his experience running a real estate brokerage firm with 1,000 (mostly female) independent contractors. Early on, he set up a SEP-IRS, a simplified employee pension, to encourage retirement saving, and he emphasized that more private saving reduces the chance that someone will be on the public dole in old age.

Isakson also underscored the importance of a bill he is co-sponsoring, the Lifetime Income Disclosure Act. This would require benefit statements to include an illustration not only of wealth accumulation but also how that accumulation can translate into an income stream at retirement. Additionally, he shared Sen. Rob Portman’s criticism of the Department of Labor’s proposal to update fiduciary rules requiring brokers working with retirement accounts to act in clients’ best interest, particularly as he believes that the rule would drive small plans with fewer than 100 participants to cut out investment advice all together. And finally he emphasized the need to reform Social Security to return the program to solvency, via means-testing benefits and pushing eligibility dates beyond age 70. He is optimistic that Social Security reform will happen, in view of the bipartisan backing for a recent change in the Medicare reimbursement rate formula including means-testing benefits for higher income recipients.

**Closing Remarks**

Roger Ferguson closed the meeting by acknowledging that some of our extended lifetimes must be devoted to additional years of work. He also underscored the importance of financial literacy for retirement security, noting that fewer than half of the U.S. states require any financial training in high schools.
More on the Research Presentations

Session One: Retirement Plan Design: The Roles of Choice and Behavior

“Save More Later? The Effect of the Option to Choose Delayed Savings Rate Increases on Retirement Wealth,” by John Beshears of Harvard University, Hengchen Dai, and Katherine L. Milkman, both of The Wharton School of the University of Pennsylvania, and Shlomo Benartzi of the University of California, Los Angeles.

Beshears and his team studied how to design “choice architecture,” or how to design an environment in which decisions are made that promote increased retirement savings and, ultimately, greater retirement security. He noted that it is important to think about the details of communications strategies – a “toolbox of nudges,” as he called it – that can be deployed to help increase retirement savings.

The authors used present bias, or the tendency of individuals to place higher weight on costs and benefits that accrue in the present, as the cornerstone of their work. Viewed through the lens of retirement savings, present bias means people’s desire for immediate gratification will tend to cause them to spend now and save later, leading them to make retirement plan choices that increase savings at some point in the future.

For example, according to other research in the field, if employees are allowed to precommit to have their average contributions increase when they get a pay raise, their savings increase from 3 1/2% to 13.6% over the time they were followed. Such a program takes advantage of psychological mechanisms that lead people to believe that their current spending habits won’t need to be curtailed because the bump in savings will take place when they get a pay increase.

The authors also used the concept of a “fresh start,” or moments in time – a holiday, a birthday, the first day of a month or year – when people sense that they might be able to break with their bad, past habits and start afresh. In a field experiment with four U.S. universities, the team contacted 8,000 employees who either were not in the defined-contribution savings plan or who were saving too little. (Of the four institutions studied, three had a mandatory component of their plan and data relating to the supplemental plan contributions were studied. The fourth institution had employer contributions to which the experiment was trying to induce additional contributions.) Three versions of a letter describing the benefits of retirement savings were sent out, all giving recipients a chance to take action. In one, no delay was offered; in other words, recipients could sign a reply card, stick it in a preaddressed, pre-stamped envelope, and mail it back to become enrolled. The second version was the “standard delay” mailing, offering the choice to save more now or wait for as long as six months to increase savings. The third option included the same delays but wrapped a psychological time frame around it tied to the fresh start concept: their increased savings would kick in after a holiday or their next birthday.

Using administrative data from their university partners, Beshears and co-authors tracked the savings outcomes of all the individuals who received a mailing and were able to compare the outcomes of individuals receiving specific versions of the letter. The fresh start framing boosted employee’s average contribution rates over the next eight months relative to the letters which framed the delay as two months, three months, four months. Nevertheless, the most effective motivation was the birthday-linked messages, which yielded a statistically significant improvement over the holiday-linked messages. Interestingly, however, when looking at the mailings that offered simply a delay not tied to a birthday or holiday, the average contribution rate dropped in comparison to the control group. This could tie back to the present bias effect, which holds that it feels ‘easier’ to commit now to saving later, as opposed to committing now to save now. Perhaps the communication inadvertently indicated to employees that it’s not as urgent that they increase their retirement savings by offering a delay.

The researchers then contacted participants via an online survey and asked them to imagine that the firm’s human resources department was
choosing between two mailing strategies. The options were either a pair similar to the study’s no-delay and standard-delay alternatives; or a standard delay versus a two-stage delay, where recipients of the first mailing (which offered no option for delayed savings) were contacted again and offered the opportunity to enroll in six months. They then asked the participants about what they believed the messaging strategy said about what the firm believed employees should do. Survey respondents said the standard delay mailing – one mailing offering options of enrolling now or waiting up to six months – conveyed a lesser degree of urgency than one without a delay option. Furthermore, the two-stage delay created greater urgency than the standard-delay option.

The paper has some policy implications in terms of how the plan sponsor designs the choice architecture. For instance, the fresh start effect mailings could be sent to coincide with salient times like birthdays or right after the New Year. Nevertheless Beshears warns that the effectiveness could be due to the surprise element, so choosing different fresh starts – a birthday, a child’s birthday – may prove more useful.

“The Role of Exponential-Growth Bias and Present Bias in Retirement Saving Decisions,” by Gopi Shah Goda of Stanford University, Matthew R. Levy of the London School of Economics, Colleen F. Manchester of the University of Minnesota, Aaron J. Sojourner of the University of Minnesota and the Institute for the Study of Labor, and Joshua Tasoff of Claremont Graduate University.

This presentation discussed several impediments to retirement planning. One type of problem discussed in detail was cognitive barriers leading people to be unable to predict how their current contributions can support a given standard of living in retirement. A second was motivational barriers keeping people from carrying out a retirement plan despite their intentions and knowing how much they want to save.

The cognitive barrier they study was the ‘exponential-growth bias,’ as it refers to the psychological tendency for people to underestimate the rate of compound interest on an asset, leading them to perceive that an asset grows more slowly than actual. People suffering from this bias might look at an asset that starts off at $1, for example, and think that it grows linearly, instead of growing at a compounded rate. The motivational bias examined is ‘present bias,’ defined as a tilt toward present gratification and against actions that benefit one over the long term.

The research questions taken up in this research asked: to what extent are there biases present among households and how much overlap is there in the biases; how much of the variation in savings can be explained by the biases; and what options are available to help mitigate the biases and help people make better retirement savings decisions. Their authors ran several surveys using the American Life Panel, a nationally representative, probability-based panel of more than 6,000 adults who are regularly interviewed over the Internet for research purposes. The researchers used a two-phase survey design. The first phase allowed them to measure exponential growth, and present biases and collect information on household savings and other financial behavior. The second phase distributed randomized intervention options across participants, allowing the team to understand the impact of the interventions and how they mitigated the biases, if at all.

Responses were used to classify people into two present bias groups (biased or not) and three exponential-growth bias categories (mostly biased, somewhat biased, or not biased). Very few, 8%, had neither present bias nor exponential-growth bias, and the authors also found that the two biases were slightly negatively correlated with each other. They also ascertained that the people who had neither bias had a much higher level of predicted retirement savings, and having one bias is just as bad as having both. Differences in retirement savings were also economically important: the group without biases had asset balances 50% to 60% higher than the others.

The authors also investigated potential bias mitigation strategies by examining how people responded to a new, hypothetical employer match with different types of information and choice architecture. The exponential-growth bias dimension showed people the value of the
match in different ways. The control group got the annual value of the match; another group was shown the projected balance of the match at a particular retirement age; the third was shown the projected annual income in retirement that would be supported by the match. Results showed that those who got information about their projected annual retirement incomes bumped up their annual contributions by $811, a statistically significant result.

Three scenarios were also used to examine the present bias outcomes. One group received a hypothetical incentive for completing the paperwork within a one-week period; another group got the financial incentive without a deadline; and the control group got no extra incentive to complete the paperwork needed to change retirement contributions. (Respondents also had the option to make no change to their hypothetical plans.) Compared to the control group, those given a deadline had a 9% higher probability that they increased contributions in response to a match in the one-week window. The no-deadline group had no significant change.

The implications of the findings are that both exponential-growth bias and present bias are impediments to making informed retirement savings decisions, and retirement income disclosures and setting deadlines may help mitigate those biases. Since the research used hypothetical scenarios, the team hopes to implement the interventions with field partners to look at real-life effects in the future.


In most defined contribution plans, participants are presented with multiple investment options in a menu designed by the plan sponsor. Participants then elect how to allocate their investments among those funds, either diversifying contributions across multiple funds or concentrating them into one or a few funds. Employers can also automatically enroll participants into “default” investments, usually target-date funds, if no choice is made. Yet over time many plans have increased the number of funds offered, which recent research has found can be overwhelming. Accordingly, this research examined how changing the fund lineups can shape employee investment choices in DC plans.

Using administrative data from a large, nonprofit institution with about 5,000 participants that went through a fund streamlining process, the authors studied how “streamlined” participants - that is, those individuals who held one of the deleted funds - responded to the realignment. Before the streamlining, the institution offered its employees a choice of about 90 funds, presented alphabetically on a menu and with some overlap between the fund options. The goal of the streamlining was to eliminate redundant funds and to cluster options. To achieve that, the employer cut the fund listing nearly in half (40 funds were ultimately deleted, affecting less than 20% of the plan assets) and created a four-tiered structure: one with 13 target-date funds; one with four passive funds; one with 32 passive and active funds; and a brokerage account option. The funds to be deleted were chosen based on the number of participants holding the fund, the aggregate amount invested in each fund and the expense ratio. Those with deleted funds could buy them through the brokerage account option or move their money elsewhere; if no action was taken in the three-month window, the funds defaulted to an age-appropriate target-date fund.

The team found that streamlined participants had a significantly higher probability of being older, male and higher income. They also had significantly higher contributions and balances overall; they also held more of their balances in riskier funds and less in safer, balanced or target-date funds. After the plan change, the non-streamlined participants, i.e., those who held none of the deleted funds, showed little change in the aggregate. Streamlined participants, however, cut their overall contributions to stock, sector, international and bond funds (as a percent of their total) by 27.5% and substituted with contributions primarily to safer, target-date funds. Very few brokerage accounts were opened. Post-streamlining, participants ended up with fewer funds overall, significantly lower turnover rates and lower expense ratios. The bottom line here is that the people who were streamlined had a decline in systematic risk in their portfolios and also less tilt towards market factors. The systematic, nondiversifiable risk was reduced as well as the idiosyncratic risk for the people who were streamlined.
Since this was only a single case study, the team would like to replicate it and extend it to other plan sponsors doing similar streamlining. Nevertheless it does show that complexity can be an impediment to retirement saving. Of course, plan menu design must also take into account the financial sophistication of the employees.

Session Two: Exploring Implications for Workforce Financial Literacy and Plan Cost

“Plan Architecture and Fees,” by Irina Stefanescu of the Federal Reserve Board of Governors, Veronika K. Pool of Indiana University, Bloomington, and Clemens Sialm of the University of Texas at Austin.

Defined contribution plans have become the dominant vehicle for employer-sponsored retirement savings in the United States, hitting $4.5 trillion in 2015 and covering more than half of the retirement assets in the private sector. Generally the plan sponsor chooses a service provider to administer and manage the plan, and this service provider is paid directly by the plan sponsor. Yet this fee is typically only about $1 a month, and most of the provider’s income comes via a percentage of the plan assets. The sponsor then chooses the investment menu from which participants are able to make active choices within the set of options offered to them by the service provider. Plan sponsors are also required to appoint a trustee for the fund; occasionally a commercial bank or consulting company serves that role, but more often the trustee is a mutual fund family that can also offer its own funds as part of the investment menu. The team’s research examined whether this can present a conflict of interest.

The main research questions driving the work were whether these conflicting incentives left a “footprint” on the menu; if participants could ‘see through’ this bias; and what the costs and benefits of the conflicts were for plan participants. The team used data provided to the Securities and Exchange Commission and established a sample of nine million participants across 2,500 plans (with 146 mutual fund options in total) and 1,800 sponsors between 1998 and 2009. The average plan in their sample held $328 million. The sample included about 135,000 fund-year observations that stayed on the investment menu for at least two consecutive years, 18,000 fund-years that were deleted, and more than 30,000 additions.

To examine whether competing incentives of mutual fund providers leave a footprint on the menu, the authors looked at fund deletions in the sample over time. Since the same funds appeared simultaneously on affiliated menus and nonaffiliated menus, they were able to calculate deletion rates while implicitly controlling for fund characteristics. Results showed that unaffiliated funds were more likely to be deleted across the board, and the sensitivity of fund deletions to performance was higher for unaffiliated funds than for affiliated funds. In other words, a poorly performing fund was more likely to get kicked off a menu if it was not affiliated with the trustee. Moreover, by calculating the ratio of additions of affiliated funds to the number of funds added through the year, they found the mirror image of the deletion results.

Next they investigated whether plan participants understood this effect and undid them through their menu allocations. To address this topic, the team focused on flows and calculated them in three ways: sponsored flows, additions or deletions or participant-driven flows. They found that participants were unlikely to differentiate between affiliated and nonaffiliated funds, and they were less sensitive to overall performance.

They then measured the cost to participants by forming equally weighted portfolios of the added and deleted funds that were both affiliated and unaffiliated. They concluded that affiliated funds retained on the menus underperformed by 33 basis points despite their best past performance, translating to an underperformance of about 4% per year. But the favoritism had some benefits for participants as well, in that fees were much lower when mutual fund families were in charge. Affiliated funds generally had lower expense ratios than unaffiliated funds across the board, even after controlling for investment style. The differences are sizeable and significant: 22 basis points if not adjusted for style; 14 basis points after the adjustment. This was explained by noting that the affiliated funds were ‘plain vanilla’ funds: equity funds, domestic equity, or target-date funds which had lower expense ratios to begin with.

It is well known that financial knowledge helps people generate higher returns on their investment. But what’s less settled is whether employer-based financial education programs can lead to long-lasting effects on retirement saving. The authors conceive of investing in financial literacy as a way to build human capital: it comes at a cost but it has future potential payoffs.

Firms with defined contribution plans will often offer employees the option to build financial knowledge, and then employees decide when and how to invest based on their motives to save, which differ over their life cycles. What this means is that some will, but others will not, elect to invest. For instance someone having a low and flat earnings stream and aware that retirement benefits offer a high replacement rate will optimally not invest much in financial knowledge. By contrast, a college-educated individual with a steep income profile and a low retirement replacement rate from Social Security has the incentive to save more and do better investing if he boosts his financial literacy.

For plan sponsors, the issue becomes one of timing: when do you offer a financial literacy program, and what might one expect it will do for employees over their life cycles? The team emphasized that this is a difficult question since there is a major problem raised by self-selection: few workers enroll in the courses, and those who do enroll differ markedly from those who do not. This makes it difficult to estimate program impacts.

Accordingly the team used a life cycle model calibrated to reasonable real-world values and uses it to simulate the impact of a workplace financial education program. The great advantage of this approach is that, for each person, the researchers have a counterfactual – that is they see what would have happened had that person not participated in the program and thus can estimate the degree of selection bias.

With those variables in place, the authors showed that an optimal financial knowledge program would be offered when employees were around age 40, and it would include follow-ups to help participants recall what was taught. The seemingly late age for the program was not surprising, given that precautionary saving was concentrated earlier in life, and retirement saving in middle age. The research also showed that one could substantially overestimate the program’s effectiveness if one incorrectly took those who did not participate in the program as the comparison group.

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