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Testimony of
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Chairman Harkin, Ranking Member Enzi and Members of the Committee:

Thank you for inviting me to testify. It is an honor to appear before this committee. Today, the goal of my testimony is to share with you the findings of recent academic research that demonstrates the clear role investor psychology and financial literacy plays in retirement decision making, as well highlight for you ways, in light of these results, that we might improve the way people make decisions.

As the committee is well aware, research has proven that automatic features in retirement plans work. The success of these features is also proof that investor psychology matters or else these design changes would be ineffective. Unfortunately, as 'automation' in plans becomes more widespread, plan sponsors and policymakers may come to view plan communications and financial literacy programs generally as superfluous, and that those who opt-out of the automated features opt-out because they are simply informed individuals making calculated choices about their future. In my testimony today, I will highlight research that suggests just the opposite and I will argue for the need for more effective financial education programs that begin early and continue through life, as well as the need for simple communication materials that by design are easy to understand and accessible to individuals who have limited interest in finance, insufficient financial knowledge and/or time to devote to investment decisions.

Speaking to financial education, the research suggests that Americans today have limited financial knowledge. Numerous academic studies have shown that individuals do not understand basic financial concepts. Even more worrisome is that research suggests that those with the most limited knowledge may be unaware of their deficiencies and therefore may not seek or even realize they need assistance. Furthermore, additional studies show that vulnerable groups, such as those with low incomes, limited education, and women, are most likely to fall into this category and those in this category are more likely to succumb to behavioral biases. This is a concern as the pension landscape in the U.S. continues to shift towards a defined contribution world and the responsibility to make financial decisions is increasingly placed on the individual. How can we expect individuals to make sound decisions when they do not understand their investment choices nor appreciate the need to save?

Yet it is not just general literacy that is important, participants may be failing to participate because they do not understand the features offered in their plan. We were curious about why individuals might quit an automatic enrollment plan, and so we surveyed employees in two different plans. Interestingly, we found that 18 percent of those who had quit did not realize that they were not participating despite making this active choice and 8 percent were not sure of their status. Moreover, we also found that those who quit were more likely not to know that their plan offered a match. Thus, plan sponsors must clearly explain the benefits of their plan to both non-participants and participants and must periodically remind all employees of the personal choices they have made.

When communicating with individuals or designing the choices offered in plans, materials from plan sponsors and government agencies must be kept simple and engaging and the set of choices limited. Through my work with the Center for Interdisciplinary Behavioral Finance Research at the Mason School of Business, it is clear from the focus groups we have run that making retirement related decisions and understanding financial products is overwhelming for many and is often associated with high levels of stress and anxiety. When individuals become overwhelmed or lack sufficient knowledge to make a decision, they can easily experience what we call 'information overload.' When individuals experience

information overload, it can impair their judgment by causing them to limit their research related to the decision, rely on simple rules of thumb or resign themselves to passively accept the default as it represents for them 'the path of least resistance.' We have found individuals with low financial literacy typically are more likely to experience information overload. More about this can be found in my written testimony but I would like to highlight two additional benefits of limiting information overload beyond helping people make more informed decisions. First, we find that those experiencing less information overload are more confident with their decisions when they are made and, second, regardless of the financial outcome they tend to be more satisfied with their choice. This is a worthy outcome in itself.

Finally, while automatic enrollment is a success, we should not believe that those who quit are always individuals making fully informed decisions. As mentioned earlier, these individuals might not understand the features of the plan. We have also found that those who quit tend not to trust financial institutions. Given recent market events, this is certainly not irrational, but perhaps a better understanding of how their plans work and their asset choices would reduce the mistrust attributable to simple lack of financial literacy.

In closing, recognizing the psychology of investing has led to useful changes in plan design. This research is important and must be continued. However, I also believe that more needs to be done to better integrate financial education into the daily lives of Americans starting at an early age and at points where important financial decisions are being made. Financial experts should be used to make sure that the correct lessons are being taught and marketing experts should be involved so that people actually listen and are engaged in the message. We also must test to make sure these methods are effective, because we have too many examples today of programs that do not work.

The remainder of my testimony elaborates further on these comments.

Investor Psychology and Retirement Decisions[2]

Over the past ten years, administrative data from 401(k) plans have provided academics a rich and fruitful context for investigating behavioral finance theories. This growing area of research has enhanced our understanding of the psychology of investing, provided substantial support for various theories, and led to significant changes in retirement plan design that have improved overall savings outcomes.

This section provides a high level overview of some of the research findings in the area. I highlight several studies that relate to four important retirement decisions. Those decisions are whether or not to participate in a plan, how much to contribute to a plan, how to allocate and trade assets and what to do during the distribution phase. While this summary is *not* at all comprehensive, the intent is to convince the reader by the end of this section that investor psychology should not be ignored when discussing retirement decision-making or making policy. For those interested in more details, the appendix includes a recently published book chapter with a more complete overview.

Participation

Brigitte Madrian and David Shea's (2001) seminal study on 401(k) participation led to widespread changes in plan design and is one of the best examples of how applying behavioral finance research can improve financial outcomes.[3] These authors analyze one 401(k) plan transitioning from a voluntary (opt-in) enrollment arrangement to an automatic (opt-out) enrollment arrangement. According to rational-choice, this change in enrollment method should not affect participation levels if individuals have well-defined preferences because a person will always optimize and select the best option (Johnson and Goldstein, 2003). Contrary to this expectation, the authors find participation levels for employees at similar points in job tenure increase significantly when automatic enrollment is introduced, from 37 percent to 86 percent. In addition, participation rates between demographic groups equalize.[4] This dramatic increase in participation may be due to, among other things, the tendency for individuals to procrastinate or because employees view the default choice as an implicit endorsement from the company.

Additional research finds other behavioral factors affecting participation rates. For example, Esther Duflo and Emmanuel Saez (2002, 2003) find that peers influence individuals' choices. Furthermore, the number of investment choices offered in a plan may influence participation. Too many choices may overwhelm individuals and make them less likely to make a decision. In a voluntary plan, the absence of a decision translates into non-participation. Sheena Sethi-Iyengar, Gur Huberman and Wei Jiang (2004) find evidence that this type of 'choice overload' discourages plan participation. Their analysis suggests that

[2] A more comprehensive overview of this growing research area can be found in the book Behavioral Finance: Investors, Corporations and Markets (2010). The full citation can be found in the reference section. This section summarizes and provides direct excerpts from one chapter in the book. Please refer to this chapter in the appendix for more details.

[3] For those plans not willing to switch to automatic enrollment, researchers understanding behavioral finance have devised new approaches that work with voluntary schemes. They include active choice (Carroll, Choi, Laibson, Madrian and Metrick (2009)), social marketing (Lusardi, Keller and Keller (2008)) and Quick Enrollment ™ (Choi, Laibson, and Madrian (2009))

[4] These findings have been supported by several other studies including Choi, Laibson, Madrian and Metrick (2002).

for every ten funds added to an investment menu, the probability of participation decreases by 1.5 to 2 percent.

Less is known regarding why individuals may opt-out of an automatic enrollment plan. However, we do find in a study that combines survey evidence with 401(k) administrative data that trust in financial institutions matters.[5] Those who distrust financial institutions are more likely to opt-out of automatic enrollment. This is consistent with previous research that has shown that distrust of financial institutions influences general financial behavior, particularly among households in the lower socio-economic strata.[6] It is important to note that distrust is not necessarily irrational and that we gathered the data prior to the recent financial crisis.

Contribution Levels

Determining how much to contribute to a plan is another important decision individuals face when enrolling in their 401(k) plan. Highlighting the influence of the default bias, James Choi, David Laibson, Brigitte Madrian, and Andrew Metrick (2004) report that 80 percent of automatically enrolled participants in their study accept both the default contribution rate and the default investment fund. Consistent with the status quo bias and inertia, they find that three years later, over half of these participants maintain these default options. Given that plan providers often set the default contribution rate very low, this has become one of the few downsides of the trend towards automatic enrollment.[7]

In an effort to increase contribution levels, especially as automatic enrollment has caused many to anchor at low rates, some plans have implemented an auto escalation feature that takes advantage of information learned about investor psychology. First engineered by Thaler and Bernatzi (2004), their auto escalation scheme called Save More Tomorrow™ allows participants to 'lock-in' to future increases in savings which helps them overcome self-control issues. In addition, the program minimizes regret by timing future contribution increases with pay raises. The plan also relies on inertia, the tendency for participants to not change their options. In their study, they find that after the fourth pay raise SMarT participants contribute on average 13.6 percent to the plan compared to an 8.8 percent contribution rate for those who instead consult with an advisor. The contrast is even more dramatic when comparing contribution rates with those who opt not to see a financial consultant (6.2 percent) or decline participation in the SMarT plan (5.9 percent).

[5] See Agnew, Szykman, Utkus and Young (forthcoming).

[6] Research suggests that poorer individuals have a culture of distrust of financial institutions (Bertrand et al., 2006; Szykman, et al., 2005). In a focus group conducted by Szykman et. al. (2005) respondents expressed feelings of alienation as well as an underlying belief that banks cannot be trusted to do the right thing. The respondents also stated that they avoided doing business with banks because of these perceptions. Finally, Guiso et al. (2007) found that lack of trust can explain why some people do not invest in the stock market. Additionally, they find that countries with low stock participation rates have low trust levels.

[7] See Nessmith, Utkus, and Young (2007).

Asset Allocations and Trading

Another challenging decision that investors face is how to allocate their savings among assets and when, if at all, they should trade their positions. Selecting a portfolio is a complicated decision that can be overwhelming to many. As a result it is not surprising that the research shows that many individuals exhibit behavioral biases when making these choices and often rely on simple rules of thumb. For example, owning a portfolio with a high concentration of company stock (that is, the stock of your employer) is not consistent with the diversification recommendations of financial experts because company stock performance is correlated with employment. It became clear following the WorldCom and Enron debacles that overinvestment in company stock was a frequent practice and led to financial ruin for many employees. Researchers suggest that one reason participants invest in company stock is a familiarity bias.[8] They buy what they know. In addition, other research, including my own, finds that the allocation to company stock is higher when the the past performance of that stock is higher.[9] Individuals investing in this manner are most likely practicing what is called "excessive extrapolation" which can be a poor way to choose allocations.

As a cautionary example against excessive extrapolation, investors in Sweden's pension scheme may have been using historically high 5-year fund returns to aid in their fund selection. During the first year of the program, a technology and health-care fund recorded the best 5-year fund performance out of all 456 funds. An information booklet given to all the participants reported these returns. Interestingly, this fund received the largest percent of the contribution pool (4.2 percent) when the default fund is excluded (Cronqvist and Thaler, 2004). Unfortunately for those who selected this fund, by 2003 the internet bubble had burst and this fund had lost 69.5 percent of its value.

Regarding trading, unlike retail brokerage accounts, trading in 401(k) plans is characterized by extreme inactivity, or inertia.[10] Although this behavior in certain cases could be consistent with the implications of models for optimal portfolio choice, it could also be the result of procrastination. In this case, if a participant is defaulted into a fund that is inappropriate for his or her risk characteristics, the optimal action would be to trade out of the funds.

Distribution Phase

While many researchers have devoted time to studying how behavioral factors influence decisions in the accumulation phase, it is not until recently that academics have turned their attention to understanding the psychology behind how individuals make investment and consumption decisions upon retirement. Recent research has addressed one such decision, the decision to buy an annuity, and suggests that framing plays an important role in this choice.[11] In an experimental study I conducted with Lisa Anderson, Jeff Gerlach and Lisa Szykman (2008), we find a significant influence of negative message framing on whether our experimental participants chose an annuity option or an investment option. Brown, Kling, Mullainathan

[8] For example, see Huberman (2001).

[9] See Benartzi (2001), Choi et. al. (2004), Huberman and Sengmueller (2004), Agnew (2006) and Brown et al. (2007).

[10] For example, see Odean (1999), Ameriks and Zeldes (2001), Madrian and Shea (2001), Agnew, Balduzzi and Sunden (2003), Mitchell, Mottola, Utkus and Yamaguchi (2006).

[11] For an overview of the research in this area, please see Brown (2008).

and Wrobel (2008) also find significant results related to the influence of framing on the attractiveness of annuities. They use an internet survey to demonstrate that the demand for annuities can be influenced by whether the consumer is viewing the annuity from a narrow investment frame or a broader consumption frame. The authors find that individuals in the consumption frame prefer annuities to other non-annuitized products and the reverse holds for the investment frame.

Research using administrative data and experimental data shows that excessive extrapolation may also come into play in the annuity decision.[12] Both types of research show that individuals are more inclined to avoid annuities when markets have exhibited higher returns in the past.

Financial Literacy, Financial Capability and Plan Knowledge

The research presented in the previous section should make clear that behavioral biases influence all types of retirement related investment decisions. In some cases, a behavioral bias may actually result in a favorable outcome. For example, the default bias results in more people saving when automatic enrollment is used. However, the default bias can also lead to lower savings rates and the wrong portfolio allocation if those defaults are not carefully chosen for the participants in the plan. Moreover, the Swedish pension example mentioned earlier demonstrates the downside of choosing allocations based on prior returns. There is some evidence that those with lower financial literacy may be more susceptible to behavioral biases. Supporting this we find, in an experimental study examining portfolio choice, that individuals with lower financial literacy are more likely to choose the default option versus those in the high literacy category (20% vs 2%).[13]

Unfortunately, the evidence related to financial literacy in the U.S. is grim. In a paper prepared for the Financial Crisis Inquiry Commission, Annamaria Lusardi (2010) provides an overview of research in this area. The results are disappointing but perhaps not surprising given recent economic events. Many Americans lack basic financial knowledge. A large number cannot carry out simple interest-rate calculations, let alone correctly answer questions about asset types. Lusardi cites several studies that suggest that those with less literacy are less likely to plan for retirement, accumulate wealth and participate in the stock market among other things. She also describes the results of a National Financial Capability Study funded by FINRA Investor Education Foundation. In the study, financial capability is measured in terms of "how well people make ends meet, plan ahead, choose and manage financial products, and possess the skills and knowledge to make financial decisions." The results from this study are equally troubling and suggest more needs to be done to improve American's ability to make informed and sound financial decisions.

In my research, we find similar evidence of low financial literacy. In one study, we find that only 37 percent of the participants understood that high yield bonds funds were not invested in bonds with strong credit ratings. In addition, while 84 percent of respondents knew they could lose money in a stock fund, only 43 percent realized there was also that risk in a bond fund.[14] We also find that individuals'

[12] See Agnew, Anderson and Szykman (2008), Chalmers and Reuter (2009) and Previtero (2010).
[13] See Agnew and Szykman (2005).
[14] See Agnew and Szykman (2005).

perception of their own relative knowledge and their actual financial literacy score are often different. This suggests that some people may not know how little they know. This could be an issue if they do not realize that they need to improve their education. Unfortunately, we find those with the least education show the weakest correlation between their tested ability and their own perception.[15] This result is also supported by the nationally representative data sample in the National Financial Capability Study.

In addition to low financial literacy, we find that many individuals are unaware of their own plan's features. We find that the probability of participating in an automatic enrollment plan decreases if the participant is not aware that they have a match.[16] It is logical that individuals will not react properly to economic incentives when they do not understand what incentives they are offered. As a result, more needs to be done to explain the benefits in plans clearly to employees.

Also disturbing is the evidence of a lack of basic awareness regarding individuals' personal financial decisions. For example, in the two automatic enrollment plans we studied, 18% thought they were participating even though they opted out of the plan and 8% of the non-participants were unsure of their status. This lack of basic awareness regarding personal financial decisions is also reflected in the National Financial Capability Study where 12 percent of those surveyed could not recall how much they had paid down on their house and 10 percent did not know the mortgage interest rate they were paying.[17] Thus, plan sponsors cannot assume that individuals are aware of the choices they have made in their plans and periodic reminders of their decisions and the possible consequences could be helpful. Finally, there is an alternative explanation for why individuals who are in automatic enrollment plans are more aware they have a match than those who opt-out. It could be that they become aware after they participate through the quarterly statements they receive. Thus, they are learning because they are participating. If this alternative theory holds, then it supports adding additional features to plan designs, such as periodic re-enrollment of those who opt-out.

Financial Literacy and Information Overload

Beyond not being able to make an informed decision, low financial literacy may make individuals overwhelmed by financial information and by the presence of too many choices.[18] This leads to what we call 'information overload.' When individuals experience information overload, it can impair their judgment by causing them to limit their research related to the decision, rely on simple rules of thumb or resign themselves to passively accept the default as it represents for them 'the path of least resistance.' We find in an experiment that the percentage of those reporting information overload decreases with tested financial knowledge. Thus, those with lower financial literacy may be more susceptible to information overload.[19]

[15] See Agnew and Szykman (2005).
[16] See Agnew, Szykman, Utkus and Young (forthcoming).
[17] Summary of these results can be found in Lusardi (2010).
[18] See Agnew and Szykman (2010).
[19] See Agnew and Szykman (2011).

There are a number of variables that may contribute to overload. One source could be how information about choices is presented to investors. Effectively communicating choice information has long been a topic of interest for consumer researchers, and nutritional labeling provides a good example of how information can be presented in a simple and easily comparable format. [20] Another potential source of information overload is the number of investment options offered in the plan. Research shows that too many choices hamper decision making. As mentioned earlier, one study finds that 401(k) plans with more options tend to result in lower participation rates.

We conducted an experimental study to see if reducing the number of investment choices reduced reported information overload when making a portfolio allocation decision.[21] In the experiment, individuals were asked to make a portfolio allocation from either a large number of funds (60) or a small number of funds (6). The number of fund choices impacted the reported overload of the high-knowledge individuals in the sample. This group experienced statistically greater feelings of overload with more choices. However, low-knowledge individuals were overwhelmed regardless of the number of choices offered. This indicates that changes in plan design, such as decreasing the number of choices may be effective in reducing information overload, but not for all participants. In this case, it only helped those with above average knowledge. For the low-knowledge, a very vulnerable group, it did nothing. Thus these results provide justification for continued financial literacy efforts alongside behaviorally motivated plan design changes.

In a separate study of participants' choice between an annuity vehicle and an investment option, we also found that those who reported less information overload when making their decision were also more confident at the time they made the decision.[22] In addition, after the experiment was completed and participants knew the final financial outcome, those with less information overload were still more satisfied regardless of how well they did financially. One way to interpret this finding is that when individuals understand their decision, they are less likely to regret it because they understood the consequences when they made it. Thus by empowering investors through financial education, simplified plan design and effective communication, we help investors make more thoughtful and confident decisions. In addition, it may also benefit plan sponsors and the entire industry by producing more satisfied consumers.

Anecdotally, participant remarks in recent focus groups conducted in conjunction with projects affiliated with the Center for Interdisciplinary Behavioral Finance Research and funded by the new Financial Literacy Research Consortium suggest that individuals are often overwhelmed. Many individuals in the groups expressed great anxiety related to retirement decision making. In one set of focus groups, participants were asked to choose two or three pictures that represented how they felt emotionally about

[20] The economics of information literature suggests that consumers tend to use information more extensively if it costs less in time and/or money to acquire (Stigler, 1961, Nelson, 1970, 1974). These findings suggest that when information is easier to obtain and evaluate, consumers are more likely to use it when making decisions or choices. For example, in the nutritional labeling literature, it has been shown that as dependable information becomes easier to utilize (such as information presented in a standardized format), consumers use the information more to determine food quality, acquire more nutrition information prior to purchase, and improve their overall decision quality.
[21] See Agnew and Szykman (2005).
[22] See Agnew and Szykman (2011).

retirement. They were asked to draw them from a sample of several hundred pictures cut out of various magazines and acquired from different sources. The moderator encouraged them to choose pictures that represented their hopes and dreams, as well as their anxieties. The pictures chosen were varied. Some images depicted idyllic scenes, such as a loving couple relaxing in a hammock or a man peacefully fishing in the glow of a sunset. However, many images were disturbing and chosen because they demonstrated participants' feelings of being stressed and trapped. Several participants chose the picture below.

It should be noted that these selections occurred just a year following the 2008-2009 financial crisis and one of the worst economic recessions in U.S. history. Thus it is hard to know whether these images are accurate images of respondents long-term retirement prospects, or simply an emotional reaction to recent experience.

In the end, it is clear that many Americans are feeling overwhelmed at the present time, and that more can be done to help them make more informed decisions. That said, given evidence suggesting that most Americans are not interested in finance, the financial lessons must be taught in an engaging manner that recognizes that people have limited time and interest. To do this effectively, we must use an interactive approach and include financial experts, educators and marketers. One approach that I support is to begin financial education early on in elementary school and to repeat the important themes with age-appropriate lessons on through the college years. In addition, making instruction and information easily available to Americans when they experience important life events, such as a marriage or a death in the family, could capture people when they are most interested and motivated to learn. In this regard, several interesting projects designed to engage Americans are currently being developed by the three Centers affiliated with the Financial Literacy Research Consortium funded by the Social Security Administration. I believe efforts like these and others have a great deal of merit.

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