

# Behavioral Finance Symposium

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Michigan Center on Finance, Law, and Policy**

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**SYMPOSIUM SPEAKERS**

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**Michael S. Barr**, Joan and Sanford Weill Dean, Gerald R. Ford School of Public Policy, University of Michigan

**Phyllis Borzi**, former Assistant Secretary, U.S. Department of Labor

**Andrew Caplin**, Silver Professor of Economics, New York University

**James Choi**, Professor of Finance, Yale University School of Management

**Shawn Cole**, John G. McLean Professor of Business Administration, Harvard Business School

**Scott DeRue**, Edward J. Frey Dean of the Stephen M. Ross School of Business, University of Michigan

**Diana Farrell**, President and CEO, JPMorgan Chase Institute

**Claire Hill**, James L. Krusemark Chair in Law, University of Minnesota Law School

**Mary Ellen Iskenderian**, CEO, Women's World Banking

**John Leahy**, Allen Sinai Professor of Macroeconomics at the Gerald R. Ford School of Public Policy, University of Michigan

**Brayden McCarthy**, Vice President of Strategy, Fundera

**Jeroen Nieboer**, Technical Specialist, Behavioural Economics & Data Science Unit, Financial Conduct Authority

**Robert J. Shiller**, Sterling Professor of Economics, Yale University

**Tim Spence**, Chief Strategy Officer, Fifth Third Bank

**Joseph Tracy**, Executive Vice President and Senior Advisor to the President, Federal Reserve of Dallas

**Steve Wendel**, Head of Behavioral Science, Morningstar

**Justin Wolfers**, Professor of Economics, Gerald R. Ford School of Public Policy, University of Michigan

## I. EXECUTIVE SUMMARY

On September 14-15, 2017, the University of Michigan’s Center on Finance, Law, and Policy and behavioral science research and design lab ideas42 brought together influential leaders from academia, government, nonprofits and the financial sector for a two-day symposium on behavioral finance. Behavioral finance is the study of how behavioral biases and tendencies affect financial decisions, and in turn how those impact financial markets.

Nobel laureate, Yale University economics professor, and “father” of behavioral finance Dr. Robert Shiller and J.P. Morgan Chase Institute CEO and former White House advisor Diana Farrell served as the Symposium’s keynote speakers. They joined 16 experts from a wide variety of backgrounds to discuss behaviorally influenced research and innovations in financial products and financial services and the impact of these innovations on the entire financial system. Speakers included representatives from financial sector regulators (in the U.S. and abroad), non-governmental organizations committed to bolstering financial inclusion and health, private-sector financial services providers, and academic researchers. Panels covered macroeconomic issues and market stability, microenterprises and small businesses, and investor and consumer protection.

In welcoming attendees, University of Michigan Ross School of Business Dean Scott DeRue praised the interdisciplinary nature of behavioral finance across all fields and dimensions as part of the larger goal of increasing social impact. Shiller discussed his research on how peoples’ narratives of the economy—shaped by individual experiences and stories—collectively affect financial markets. Farrell discussed how the JPMorgan Chase Institute uses big data to develop financial models for household and small businesses that align more closely to individual behavior, and encouraged practitioners to use those findings to design policies and products that improve financial stability. University of Michigan’s Gerald R. Ford School of Public Policy Dean Michael Barr discussed *how* policy designers could incorporate those and other findings to drive healthier decision-making.

The following themes emerged from the keynote presentations, four panels, Q&As, and discussions throughout the Symposium:

- People make irrational financial decisions: Ideally, people would have infinite time and the necessary self-control to make the best financial decision possible – but they do not. Policy practitioners should consider the equity impacts of those types of decisions: for some, not being able to make the right financial choice means paying a small fee or penalty; for others, it means taking a catastrophic hit to their financial well-being. Farrell showed how an adjustable-rate mortgage can upend household spending patterns, often to the detriment of their financial health.
- Irrationality abounds in markets too: Behavioral biases reverberate beyond individual decision-making into the global economy. Shiller explained how perceptions drive investors to make irrational decisions, which causes “rational” markets to under or overvalue products.

Law Professor Claire Hill made the case for redesigning banker compensation to align incentives better in the private sector.

- What works for one group may not work for another: It is not enough to know people have certain biases—the magnitude and direction of those biases can differ across different kinds of customers and businesses. JP Morgan Chase Institute segmented small businesses by industry, and was able to highlight different financial needs within each group. Professor James Choi presented on how peer comparisons in retirement savings negatively influenced one group, while positively impacted another. Mary Ellen Iskenderian discussed how Women’s World Banking is helping financial service providers augment their products and services to reach unbanked and underbanked women.
- Test, Retest and Test Again: Behavioral economics is not an exact science; unintended consequences abound. Phylis Borzi, a former Assistant Secretary at the U.S. Department of Labor, discussed the downsides to disclosure, including how it may foster a false feeling of trust. Jeroen Niebor from the UK’s Financial Conduct Authority illustrated how a modification to investment advisors’ fee mechanisms led to an advice gap in the industry.

Unbeknownst to the attendees, the symposium also included three live audience experiments designed by ideas42 to test some of the most well-known psychological biases documented in behavioral economics.<sup>1</sup> Would an audience learning about inattentiveness find themselves subject to the bias? (Spoiler: overwhelmingly, the answer was yes.)

### *About this paper*

This summary paper is divided into two parts. Part I defines behavioral finance, explores how behaviorally minded economists and others seek to depart from assumptions that have traditionally played an important role in modeling human behavior, and discusses the underlying policy debate surrounding the use of “nudges.” Part II builds upon this understanding by analyzing: consumers’ and small businesses’ financial well-being; the innovative “nudges” and experiments undertaken by symposium speakers and the organizations they represent; the limits, unintended consequences, and externalities that have arisen from innovation in behavioral finance; and the ways in which these small nudges have ripple effects throughout the entire financial system, affecting macroeconomic financial stability.

Full videos of the two keynote addresses and four panel presentations are available at <http://financelawpolicy.umich.edu/behavioral-finance-symposium/>. To clarify and draw out the ideas interwoven among panel discussions over the two-day event, speakers’ comments are not presented here in the order they were discussed at the symposium, but are instead discussed by topic.

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<sup>1</sup> While the precise nature of the experiments was not revealed in advance, all conference advertising mentioned an “interactive audience experiment” and conference registrants were notified three times that they would be recorded throughout the event: once on the conference webpage, once in the email they received confirming their online registration, and once when they appeared at the conference and signed a waiver form at the registration check-in.

## II. BACKGROUND: WHAT IS BEHAVIORAL FINANCE?

In their groundbreaking 2008 book *Nudge*, economist Richard Thaler and legal scholar Cass Sunstein distinguished between two types of individuals: humans and Econs. Econs are “these strange creatures” found only in economics textbooks.<sup>2</sup> They are unemotional, logical, and self-controlled. Humans, by contrast, are the type of people we interact with every day. They make mistakes, act emotionally, and rarely act on full or perfect information. Behavioral science is the intersection of economic theory with psychology and neuroscience, which enables researchers to understand how we humans make decisions, interact with others, and respond to incentives.

### *Beginning of the Behavioral Revolution*

Economics traditionally relies on models that incorporate the “rational actor” and a “rational choice theory,” which assumes that we live in a world of Econs, not humans. These ideas essentially posit that people try to maximize their advantage in any given situation by making rational, logical decisions. Beginning just a few decades ago, researchers began to push back against this rational actor model.

In 1974, psychologists Daniel Kahneman and Amos Tversky published a paper, *Judgment Under Uncertainty: Heuristics and Biases*, which examined how people make less-than-rational decisions in situations involving uncertainty. The authors found that people rely on heuristics, or mental shortcuts, to make sense of complex problems. While many of these shortcuts can be useful, sometimes they lead to “severe and systematic errors.” Take the *availability heuristic*, or making decisions and predicting probabilities based on what information is available and what is easiest to recall. A harmless example is someone deciding whether to bring an umbrella to work—his probability of doing so is much higher if the past few days have been rainy, since his memories of getting soaked are so salient. A more consequential example lies with the stock market. The NASDAQ and S&P500 drop in early February 2018 came as such a shock to investors because the American economy had been in its longest period of recovery—the information most readily available was an ever-upward stock market, not a more realistic cyclical path.<sup>3</sup>

Many of the cognitive biases Kahneman, Tversky, and other researchers have identified have entered the popular lexicon, such as *confirmation bias* (the tendency to focus only on information that validates existing beliefs), or *recency bias* (the tendency for people to believe what has happened recently will continue to happen). Another is *mental accounting*, which occurs when a person views various sources of income as being different from others—think of how you would spend a birthday check versus wages from one additional hour of work. Other foundational behavioral research focuses on how visceral states (such as hunger or strong emotions) can distort decision-making. Behavioral finance builds on this new foundation known

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<sup>2</sup> Thaler, Richard H., and Cass R. Sunstein. *Nudge: Improving Decisions about Health, Wealth, and Happiness*. Yale University Press, 2008.

<sup>3</sup> Thakor, A. [Lending booms, smart bankers, and financial crises](#). *The American Economic Review*, 105(5), 2015, pp. 305-309.

as *behavioral economics* by broadening the scope behind individual decision-making to macro level system decision-making. These concepts are merely a handful of the identified biases and tendencies people exhibit—there are far more that affect decision-making that financial stakeholders aim to harness, as discussed throughout the conference and this paper.

### *Applying Behavioral Economics to the Financial Sector*

Understanding how humans make financial decisions is only one piece of a complicated puzzle. Researchers and policymakers are also interested in how to use findings from behavioral economics to improve consumer financial decisions or design a financial system that better protects people from cyclical economic shocks. Researchers often try to understand where market incentives may be aligned—or misaligned—to help consumers overcome their own biases. In cases where financial institutions have an incentive to take advantage of consumers' irrationality, policymakers could level the playing field with interventions that enhance consumer welfare.

To address the ethical concerns of attempting to influence human behavior, Thaler and Sunstein introduce the concept of *libertarian paternalism*: libertarian, as people must be free to make the choice they want, and paternalism, as institutions should design systems that encourage healthier choices.<sup>4</sup> The idea is that people do not have time to make rationally consider every option available to them at the grocery store, cafeteria, or bank. They rely on those heuristics, which allow them to make faster decisions—and choices they would not otherwise make if they were Econs, with an ability to always make rational decisions.

Behavioral finance is redesigning systems so that people are more likely to make a healthier financial decision. Importantly, it does not force a choice. It does not affect someone's ability to choose what she truly prefers, even if it is irrational. Rather, it makes it easier for her make a better choice just as quickly—a better choice meaning what she would eventually make, given infinite time and self-control.

To illustrate the point, think about one area where consumers consistently make irrational choices: credit card monthly minimum payments. The minimum payment is the amount a cardholder must pay each month to keep her account current and avoid extra fees and penalties. Credit cards carry high interest rates, and companies calibrate minimum payment formulas to extend these high-interest repayment periods—but many Americans still only pay the minimum, even when they can afford more. Companies typically prominently feature the minimum on the credit card statement: researchers have shown the minimum acts as an *anchor* on which consumers use to decide how much to pay. One study demonstrated that when consumers had the amount hidden, they would make a payment up to an estimated 43 greater than the minimum.<sup>5</sup>

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<sup>4</sup> Thaler, Richard, H., and Cass R. Sunstein. "Libertarian Paternalism." *American Economic Review*, 93 (2), 2013, pp. 175-179.

<sup>5</sup> "A nudge in the wrong direction; Credit cards." *The Economist*, 13 Dec. 2008.

Redesigning a credit card statement does not restrict a consumer from paying whatever amount she likes. In this way, it maintains the libertarian principle of free choice. Changing that anchor she sees could result in a healthier financial decision by lessening the amount of interest she will need to pay. Thus, we endorse a paternalistic influence on the context in which she makes that decision.

Throughout the conference, researchers, policymakers, and practitioners emphasized program evaluation as key a tool when applying behavioral findings to interventions: without proper testing, policies and programs may produce unintended consequences. At issue in this example is just exactly how policymakers and researchers can use behavioral insights to incentivize better financial outcomes, or to decide if the harm caused to consumers warrants a legislative or other policy response at all. One example of action in this area is the Credit Card Accountability Responsibility and Disclosure Act of 2009, known as the CARD Act, which included several provisions designed to make credit card pricing more fair and transparent. The CARD act required changes to the minimum payment formula, as well as a redesign of the credit card bill to include a statement on how much a consumer would save in foregone interest by paying above the minimum.

Consumer payments increased by an average of \$19 per month in the years following implementation of the CARD act—but the number of consumers paying their credit card bill in full actually *decreased* as a result of the increased minimum—the opposite of the intended effect.<sup>6</sup>

### *Nudges*

A behavioral economics concept is the *nudge*—a gentle push to influence behavior in a way that is thought to generally benefit the individual. Thaler, Sunstein and other behaviorally minded researchers often seek to overcome psychological barriers and traps that undermine rational decision-making by tackling *choice architecture*, or the design of the environments in which people make choices. There is no such thing as a neutral design: any form or choice set must present one option first—and people are more likely to choose the first option regardless of content.<sup>7</sup> These findings have led to the rise of *choice architects*, or people or institutions that design these environments. Choice architects help decide how prominently to display certain features on your credit card statement, or default rules governing participation in retirement savings plans (*e.g.*, are employees automatically enrolled, or must they take affirmative steps to enroll themselves?)

Behavioral researchers are interested in how people interact with these environments and how certain interfaces, features, or options can influence consumers to make certain decisions. Researchers believe that, because people must choose *something* within a choice set,

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<sup>6</sup> Keys, B. J., and Jialan Wang. “[Minimum Payments and Debt Paydown in Consumer Credit Cards.](#)” *NBER Working Paper*, 22742, 2016.

<sup>7</sup> Thaler, Richard H., and Cass R. Sunstein. *Nudge*, Ibid.



policymakers can employ data-driven behavioral insights to nudge people towards healthier decisions.

A classic example of nudging is Thaler and behavioral economist Shlomo Benartzi's program to increase retirement savings called 'Save More Tomorrow' (or 'SMarT'). Thaler and Benartzi sought to address a well-known problem: a substantial proportion of employees contribute nothing, or very little, to their company's defined contribution retirement plan, even when that means they forego matching funds (i.e., 'free' money) from their employers.

SMarT also allowed employees to pre-commit to increase their savings rate, and their first increase in savings coincides with a pay raise. Thaler and Benartzi use this strategy so that take-home pay does not decrease with contributions—participants never see, and never miss, the income that goes directly into the retirement plan. This avoids triggering the mind's hypersensitivity to loss. The contribution rate increases with subsequent pay raises until it reaches a predetermined ceiling. Inertia works in employees' favor here, as employees do not have to take any further steps to continue to increase their contribution rates.

The program worked. SMarT's first pilot with at a midsize manufacturing company increased saw a rise of fund contributions from an average of 3.5 percent of salaries to 13.6 percent of salaries over a three-and-a-half-year period. More than half of the large employers in the United States now offers the program, and the Pension Protection Act of 2006 included similar to SMarT.

Nudges are not only a tool for academics and legislators. Financial institutions like banks have also employed behavioral findings to create new and useful programs for their customers. One such example is a program offered by Fifth Third Bank, called *Momentum*, which rounds up card purchases and puts the difference towards customers' student loans. As speaker Timothy Spence of Fifth Third noted, based on millennial debit card use patterns, the average millennial taking part in the program could take three years off their loan repayment by using Momentum. Other banking programs and even smartphone apps (like Acorns and Folio) help consumers overcome inertia and their own timidity to take the plunge into the stock market by investing their spare change.

### *The Symposium—Why Now?*

At the individual level, behavioral research has uncovered a host of cognitive biases that affect decision-making, which can help policymakers design programs and products (like retirement accounts) that are better aligned with how people actually interact with them, thereby creating more optimal outcomes for the individuals and for larger society. Economists have empirically demonstrated that institutions and people are capable of mispricing financial assets for long stretches of time, and that psychological factors can explain swings in markets more than fundamental factors can.

The housing and subsequent global financial crisis demonstrated the devastation crashing markets can have on the quality of life of individuals. At the individual and small business level,

the crisis and its resulting economic anxiety illuminated the important work policymakers and others have yet to do to help ordinary people manage their financial lives and absorb the occasional shocks from imperfect markets. At the macroeconomic, financial-system level, the crisis revealed that economists and regulators have a lot of work to do to understand and cool overheated markets. At its core, behavioral finance is about identifying and explaining inefficiencies and mispricing in financial markets. As Robert Shiller stated in his best seller *Irrational Exuberance*, “[h]ow we value the market now and in the future influences major economic and policy decisions that affect not only investors but also society at large.”

The University of Michigan and ideas42 designed the Symposium to bring together a diverse group of individuals to discuss the current research in the field of behavioral finance and to examine how practitioners have applied or can apply this research in the real world. What follows are their findings.

### III. BEHAVIORAL FINANCE AT THE MACROECONOMIC LEVEL

What causes prices in speculative assets, like stocks, to change? Despite the constant media attention, the question has remained notoriously difficult to answer. Traditional economists adhere to some version of the *efficient markets hypothesis*, which states that fundamental metrics can explain market prices. In the case of stocks, traditional economists focus on metrics like dividend payouts, forecasts of future earnings, and similar factors to understand prices. Prices change as information changes, and because genuine news is by nature unpredictable, price changes are therefore unpredictable. Adherents of the efficient markets worldview have come up with statistical models and observations purportedly proving the efficiency and rationality of markets.

In the 1980s, Yale economics professor Robert Shiller and other academics began to challenge the assumptions of rationality that formed the basis of traditional economic models. Shiller was an undergraduate at the University of Michigan, where he studied under professors from the economics, history, and psychology departments.<sup>8</sup> These professors exposed Shiller to the idea that the efficient markets hypothesis might be good for “bird economies,” in that birds present rational behavior, but an inaccurate model for human behavior. Humans do not use advanced mathematical techniques to optimize their utility function before making every decision. They have tastes and preferences, and those can change over time. People’s tastes are instead driven by ideas, or narratives.

Shiller credited a senior seminar at Michigan on *Individualism versus Collectivism* with instilling in him the idea that people “invent [economic assumptions] on the spot.” Most people do not maintain expectations for inflation over the next year based on complex mathematical formulas incorporating the latest economic indicators—instead, their environment, stories, and own

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<sup>8</sup> Professors Kenneth Boulding, Shaw Livermore, and George Katona, respectively. Shiller still had his class notes from all professors, as well as the required texts, and used direct quotes from a February 17, 1966 lecture to help explain his work. Said Shiller, “Those of you who are teachers have to reflect that people will remember *exactly* what you say 50 years later.”

narratives shape their idea of the economy. Shiller's research focuses on the cumulative consequences of peoples' reliance on narratives. How do individual stories and experiences create market trends? How do non-economic forces shape the economy?

In 1981, Shiller published a highly influential paper, *Do Stock Prices Move Too Much to Be Justified by Subsequent Changes in Dividends?*, where he argued that stock prices changed more than could be explained by fluctuations in dividends, indicating a less-than-rational market. Shiller attributed the larger-than-expected market variance to psychological factors. The paper challenged some of the existing research in favor of efficient markets. Called by one scholar "the first serious behavioral finance paper of the modern era," Shiller's paper bolstered behavioral finance as a serious challenger to the efficient markets hypothesis that took a more realistic view of human behavior.<sup>9</sup>

Shiller's subsequent work expanded on the idea that forces other than rational, fundamental features drive markets.

### *Narrative Economics*

In discussing his newest research about the role of narratives in economics, Shiller spoke about the need for economists to study narratives and their impact on market fluctuations. Just as economists like Shiller used psychology and other disciplines to develop the field of behavioral economics, economists also need to add the study of *narrative economics* to their analysis. This sociological element examines the narratives that people carry and transmit about the overall economy, based on information from news, from friends, and from social media.

Humans have always engaged with narratives, Shiller notes. The human brain is wired for conversation and for storytelling. Some narratives die out quickly, while others can last much longer as they spread from person to person like a contagion—and this element, contagion, is a key factor in driving how financial systems work.

Shiller asserted that the market would crash, and he was right. To explain how irrational exuberance had driven the market to such a high, Shiller pointed to several cultural and psychological factors that could lead to speculative bubbles. Consider the excitement people must have felt about investing in companies using brand new, exciting technology. Or how the news media can "amplify stories that have resonance with investors, often regardless of their validity." Shiller also analyzed psychological factors that can drive market behavior, including anchors, such as investors' misguided reliance on past prices in judging the appropriate level of current stock prices. A more pervasive anchor is the tendency for humans to rely on storytelling and justification, rather than quantitative measures, to determine appropriate values.

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<sup>9</sup> "[Shiller paper cited as one of the century's top economic articles.](#)" *Yale University Department of Economics*, 17 February 2011.

The rapid rise in bitcoin, one of the most well-known cryptocurrencies, is another example of the importance of narrative to markets. As of writing, the price of a bitcoin has risen over 600 percent in one year.<sup>10</sup> Shiller tied bitcoin's surging price in 2017 to a narrative: "...we have a new form of money that...sounds extremely revolutionary and involves a very clever use of cryptography that you can spend all afternoon trying to figure out," Shiller said during a September 2017 CNBC interview. "So the story has inspired young people and active people, and that's what's driving the market. It's not like this is a fundamentally important thing, this bitcoin."

Shiller believes that economists are among the worst at appreciating narratives. He noted that those who *do* study narratives, like historians, do not often appreciate or understand the stories of the people who lived through historical events. When economists want to understand recessions or depressions, they must first understand why people took certain actions—like why they stopped spending money.

To understand prior downturns, and the narratives that surrounded them, Shiller analyzed newspaper articles around economic shocks. Events can shape the mood of the public, and sentiments and narratives can drive people to act in certain ways. Having a better grasp on these sentiments can help economists better understand how contagious stories can move markets.

Ultimately, Shiller argued that economists who fail to grasp the cultural feeling about the economy simply miss the narratives that drive economic fluctuations. Like other disciplines, economics has a tool kit. Understanding narratives has not traditionally been included; Shiller believes doing so will better equip economists to understand economic fluctuations.

#### **IV. WHAT DOES BIG DATA SAY ABOUT CONSUMER FINANCIAL BEHAVIOR? WHERE SHOULD WE CONSIDER NUDGES?**

As behavioral finance has become more prominent, governments and organizations are trying to understand how people make decisions in economic environments, and how to deploy these insights to help people achieve their own goals while also creating a more stable economic environment. The field has exploded over the last seven years on subjects ranging from payday lending to subprime mortgage lending to gambling. Yet, large gaps remain in our understanding. Keynote speaker Diana Farrell is working to fill that gap.

Farrell is the Founding President and CEO of the J.P. Morgan Chase Institute, a global think tank launched by J.P. Morgan Chase & Co. in 2015. The Institute's mission is "to help decision makers—policymakers, businesses, and nonprofit leaders—appreciate the scale, granularity, diversity, and interconnectedness of the global economic system and use better facts, timely data and thoughtful analysis to make smarter decisions to advance global prosperity."

The Institute uses J.P. Morgan Chase's proprietary data and \$2.4 trillion balance sheet to conduct in-depth studies that help researchers construct patterns and glean insights about how

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<sup>10</sup> Author's calculations, based on prices as of March 14, 2018, via [CoinDesk](#)

individuals, households and small businesses manage their financial lives. Using anonymized datasets of the bank's small business and retail customers, the Institute is able to conduct robust, in-depth analyses not previously available at that scale. What results are new insights into the needs of different businesses and people—and different *types* of businesses and people. The Institute also investigates how monetary policy plays out at a microeconomic level, specifically how changes in the federal funds target rate impacts personal consumption for individual households.

### *Nudges for Small Businesses*

Drawing on Chase's extensive account information, the Institute constructed a sample of about 600,000 small businesses who hold Chase Business Banking deposit accounts to explore the financial lives of small businesses.<sup>11</sup> The Institute's 2016 *Cash is King* study looked at cash inflows, outflows and account balances over time to get a sense of the financial health of small businesses. Farrell expressed that thus far, data on small business is simply not very good, due to their heterogeneity and dispersion—the size of this dataset allowed analysts to create synthetic control groups, further supporting findings.

The *Cash is King* study's main finding was that the median small business holds only a cash buffer of 27 days in reserve. Cash buffer days are the number of days a business could survive without new revenue with their cash on hand. Anything from a hurricane to unexpected maintenance could cause a disruption in revenue. The study found a substantial variation in cash buffer days for small businesses across and within industries. Small businesses in labor-intensive or low-wage industries average lower days in reserve, like restaurants (a median of 16 days), repair and maintenance (18 days), and retail (19 days). Twenty-five percent of small businesses had fewer than 13 cash buffer days in reserve. Importantly, the data shows that many small businesses may not have enough of a buffer to continue their operations during an economic downturn.

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<sup>11</sup> JP Morgan Chase Institute, [Cash is King: Flows, Balances, and Buffer Days](#). September 2016.

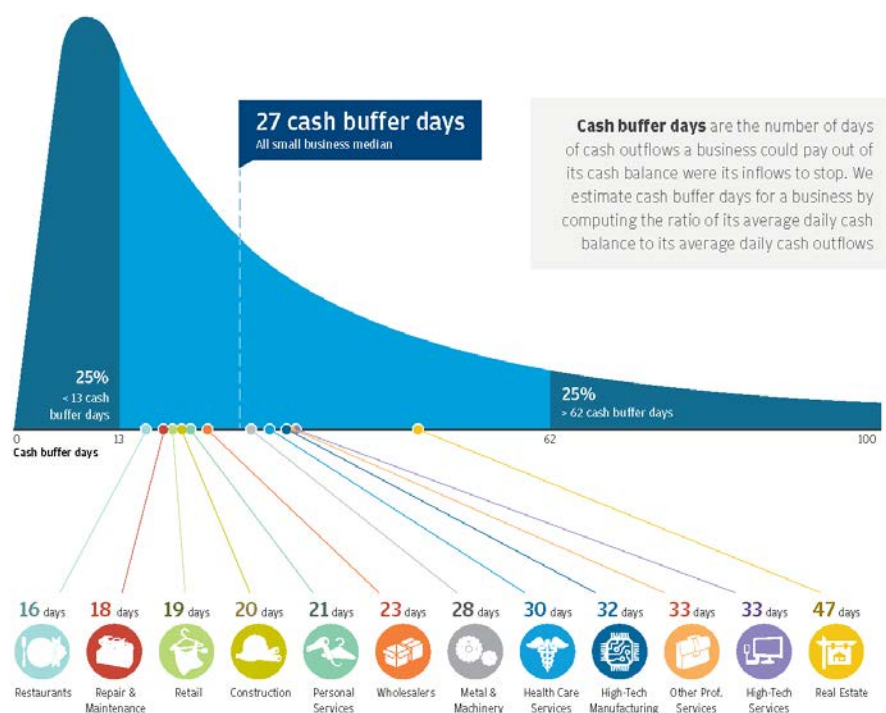


Figure 1: Cash Buffer Days by Industry, via the JP Morgan Chase Institute

According to Farrell, the detailed data used by the Institute and the research findings on cash buffer days can help policymakers create interventions that help small businesses better understand and manage cash. The Institute's industry segmentation data in particular can guide policymakers to create tailored policies for industries to serve their particular needs more effectively. The most effective interventions would treat labor-intensive and low-wage industries differently than capital-intensive and high-wage, as they have different liquidity needs. More generally, the importance of cash buffer days drawn out from the *Cash is King* study can focus policymakers and other interested parties on the importance of liquidity.

#### *Weathering Volatility: Big Data on the Financial Ups and Downs of U.S. Individuals*

The Institute also analyzed proprietary data from JPMorgan Chase to determine how household income and consumption fluctuate on a monthly and yearly basis. The Institute used anonymized consumer information and account data to analyze income and spending behaviors at a granular view over time to observe the timing, magnitude and sources of income and consumption changes.

Farrell reported three main findings: (1) individuals across the income spectrum experienced high levels of income and consumption volatility; (2) income and consumption changes did not move in tandem—there was only a slightly positive correlation between changes in income and changes in consumption; and (3) the typical household did not have a sufficient financial buffer to weather the magnitude of income and consumption volatility observed.

One takeaway from this research is the untapped opportunity for service providers, employers, and policymakers to construct tools that help small business owners better understand and manage their bottom line. Such tools can also help individuals understand financial volatility and include analytical financial planning platforms that integrate multiple aspects of a household's financial picture.

### *Recovering from Job Loss: The Role of Unemployment Insurance*

The largest disruption in household income typically comes from job loss. In the wake of the Great Recession and the prolonged economic downturn, unemployment insurance (UI) has been crucial in helping families get by while dealing with an unemployment lapse. Every year, about one in four working adults experience a period of joblessness, and the debate surrounding the efficacy and extent of the UI program is often contentious. From a universe of 28 million Chase checking account holders, the Institute assembled an anonymized sample of 160,000 families who met certain criteria to evaluate the role that UI plays in mitigating the financial impacts of a job loss—a key source of income and expense volatility. The researchers noted that the *Recovering from Job Loss* report “is a first-ever look into comprehensive and high frequency measures of spending behavior among a large sample of the unemployed in the US.”

Perhaps the most important finding of the *Recovering from Job Loss* study is that UI is “remarkably effective at preventing large spending drops among the short-term unemployed.” According to the researchers, UI reduces the drop in monthly family income from a 46 percent drop to only a 16 percent drop.

Another important finding is that income and spending recover within 18 months for the short-term unemployed but remain depressed for the longer-term unemployed. When UI benefits are less generous, the long-term unemployed experience more economic hardship but go back to work sooner. As the researchers note, these “findings therefore point to a potential trade-off that policymakers must weigh when reforming UI benefits, namely whether to reduce the time to reemployment or alleviate more of the economic hardship experienced by the unemployed.”

Given the findings, one major takeaway is that UI is effective in softening the blow to families experiencing short-term unemployment—but UI is severely underutilized, as only 27 percent of those eligible for the program are enrolled. Increasing uptake of UI would improve the financial health of individuals. The first step policymakers could take is exploring why the enrollment levels are so low—possibly due to insufficient nudges.

### *The Consumer Spending Response to Mortgage Resets: Microdata on Monetary Policy*

Another area in which consumers could benefit from nudges is in mortgage resets, as studied by the Institute.<sup>12</sup> A mortgage is the single largest debt for most households, and represents one of

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<sup>12</sup> JP Morgan Chase Institute, [The Consumer Spending Response to Mortgage Resets: Microdata on Monetary Policy](#). April 2017.



the largest monthly expenditures. Owners with adjustable-rate mortgages (ARMs), which are often tied to the federal funds rate, saw a precipitous drop in monthly payments during the Fed’s quantitative easing after the most recent financial crisis. Creating a sample of Chase customers with hybrid ARMs and a Chase credit card, the Institute analyzed changes in spending and revolving credit card balances leading up to and after the mortgage rate reset.

The Institute found that 44 percent of homeowners in their sample experienced a large drop in their hybrid ARM payment once it reset, but that homeowners typically increased their spending 9 percent in advance of the anticipated drop in their mortgage payments and 15 percent after the reset. Importantly, these homeowners increased their spending despite a nearly \$84,000 decrease in their median home value. The *Microdata on Monetary Policy* study also found that homeowners used credit card borrowing to finance 21 percent of their anticipatory spending increase. After the reset, these homeowners further increased their revolving balances. In both the pre-reset and the post-reset periods, spending increased in every category and the discretionary spending increase exceeded the non-discretionary spending increase. Over the study’s time period, homeowners’ total spending increase exceeded their mortgage-related savings by 4 percent.

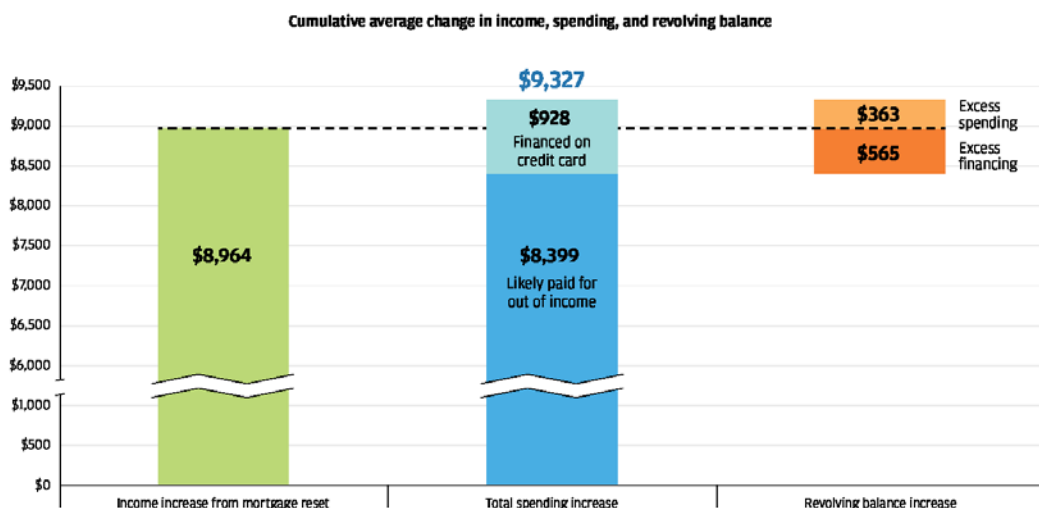


Figure 2: Cumulative average change in income, spending, & revolving balance, via [the JP Morgan Chase Institute](#)

*Microdata on Monetary Policy* has implications for policymakers, as they should consider the effects their policies have on personal consumption. Research studies like the ones Farrell described are important tools because they do not rely on surveying consumers about their behavior, which is oftentimes unreliable. Surveys and observations also cannot come close to aggregating the sophisticated, detailed and granular data the Institute can examine by leveraging Chase’s customer data. By examining this data, researchers can get a complete picture about how people behave in the real world and how they respond to various financial events. For policymakers, these insights illustrate where and why everyday Americans struggle and the kinds of interventions that may be able to provide relief. For financial institutions, these insights can



help them design financial resources and products that address important problems their customers face.

## **V. MACRO-MARKET STABILITY: SO WHAT IF CONSUMERS ARE MANIPULATED AND UNHEALTHY?**

The Symposium's final panel focused on improving stability of the financial system. Whereas the prior three panels examined the relationship between financial institutions and customers, small business owners and investors, the macro-market stability panel went inside the financial institution itself to explore what behavioral insights can tell us about how these organizations are organized, what incentives they have to take risks and what incentives they have to balance against that risk-taking.

### *A Behaviorally Informed Approach to Mortgages*

Economist Andrew Caplin examined the 2008 housing crisis and policymakers' response to it. "The crisis has been dealt with very badly," Caplin stated back in 2011. "Every single policy has pushed people further away from re-entering the U.S. lending market."<sup>13</sup> In Caplin's view, the United States housing market will face an "affordability" crisis induced by tightened lending standards. In this situation, homeownership rates will fall to levels not seen in decades, and this reduction in home ownership will create incentives to extend credit to marginal borrowers.

Caplin's response to the crisis is the development of "shared appreciation mortgage" (SAM) markets in the United States. These markets would moderate the impending decline in home ownership and dampen debt-driven housing crises. A SAM allows the purchaser to pay a given amount of the loan balance to the lender by passing along a portion of the gain in value of the property. In turn, the lender charges an interest rate that is below the prevailing market rate. SAMs allow the lender to recoup the balance of the interest charged when the property is sold.<sup>14</sup>

The first advantage of this mechanism relates to timing: a SAM replaces monthly payments over the life of the loan with a lump sum at its termination. This timing advantage is particularly useful to younger households. The second advantage, to Caplin, relates to risk sharing. Because the cost of SAM finance is low when the home's value decreases and high when it appreciates, it spreads the risk. Caplin thinks this situation is preferable because the combination of debt and equity spreads risk across the financial system, reducing the chance that individual homeowners suffer when home prices decline.

Caplin thinks the earlier availability of SAMs would have prevented the recent housing crisis from becoming as pervasive as it was. Still, development of SAM markets in the United States

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<sup>13</sup> Maag, Christopher. "[To save mortgages, should we share them?](#)" *Credit.com*, 18 July 2011.

<sup>14</sup> For a full exploration of the SAM and its potential, see: Caplin, Andrew, et al. *Facilitating Shared Appreciation Mortgages to Prevent Housing Crashes and Affordability Crises*. Brookings Institution Press, Washington, 2008.

remains unlikely due to obstacles like those imposed by current tax law. In light of the recent crisis, however, scholars like Caplin are interested in continuing to find ways to craft smarter regulations and products to protect individuals from the ups and downs of markets.

### *The Limits of Regulatory Reform*

Claire Hill focused on the limits of regulatory reform. Since the financial crisis, and after Congress passed major financial legislation aimed at curbing banks' excessive risk-taking, scandals involving banks continued to pile up. In Hill's view, regulatory reform aimed at improving banker behavior has had little on the root of the problem—banking culture, or ethos as Hill refers to it.

Hill identified three types of problematic banker behavior. The first is irresponsible risk-taking from both a financial and legal perspective, which has negative consequences on society if the risks do not pay off. The second is conflicted behavior, which occurs when banks sell products to customers they think will not figure out the product is bad or ill-suited for them. The third type of problematic behavior is what the authors call “financial maneuvering,” which involves banks searching for loopholes around regulations or contract provisions. Financial regulation must address this behavior to affect true change, “but changing behavior—as opposed, say, to imposing higher capital requirements—is a complex task.”<sup>15</sup>

Hill looks back at banking's history and argues for a bit of a return to the old days. Her response to a distorted ethos is *covenant banking*, which in her view would recreate in part the economic relationship and some of the psychological dispositions that bankers had when investment banks were general partnerships rather than corporations. Covenant banking would make financial executives personally liable for a portion of any fines and fraud-based judgments a bank enters into, including legal settlements. Hill's plan contains a no-fault element, requiring certain bankers to be liable for a fine whether or not they were engaged in the wrongdoing.

Hill said that such a provision would use psychology to change their behaviors, motivating bankers to behave ethically and legally and to watch out for misbehavior and wrongdoing among

### *Question for the speakers:*

What is the best instrument to drive culture change towards behaviorally-informed macroeconomies?

- Hill: Minimizing moral hazard, by **increasing the burden of risk** on top executives through a shareholder vote
- Leahy: we are a long way from incorporating narratives into formal models necessary for high-level financial policy decisions; it will take time to **amend and extend existing models** to capture behavioral failures
- Tracy: it is a **coordination game**; it will be much easier to drive change if all firms in the market commit to doing so
- Caplin: a behavioral flaw is one can sin by omission, without retribution; people and firms need to be **held accountable for not taking action**

<sup>15</sup> Morgenson, Gretchen, “[Fining Bankers, Not Shareholders, For Bankers' Misconduct.](#)” *The New York Times*, 6 February 2016.

other employees. In addition, such an agreement would work to eliminate the problem of *regulatory capture*, where banking regulators act in the interest of the entities they are supposed to watch over. Even if firms do not adopt such policies internally, Hill believes can regulators have mechanisms in place to enforce such a regime, for example by settling cases on the condition that banks pay out fines from their bonus pools.<sup>16</sup>

### *Restoring Trust in the Financial Sector*

Echoing some of the same sentiments as Claire Hill was Joseph Tracy of the Federal Reserve Bank of Dallas. Tracy kicked off his talk by noting the public's deep mistrust for and the lack of confidence in the financial sector. This deep mistrust largely stems from the well-documented misconduct by prominent financial institutions leading up to the financial crisis. Tracy noted that the post-crisis financial regulation has largely ensured that banks have more capital and adequate liquidity to make them more resilient to market shocks.

Similar to Hill, Tracy does not believe the regulations address a principal failing of some banks: their failure to take care of their customers. One can see how Hill's conception of the problematic banking ethos is also a concern for Tracy.

How to address such misconduct? The current responses do not deter the behavior nor cover the cost of it. Furthermore, *moral hazard*, or risk-taking by those who do not bear its consequences, has permeated the financial system. For instance, the fines levied on Wells Fargo for their misconduct with consumer accounts were borne by shareholders, not the people who caused or could have prevented the problem. And for many firms, fines are looked at as an accepted cost of doing business, not an effective deterrent against misconduct in the first place. While some former Wells Fargo executives agreed to compensation clawbacks, Tracy noted that these agreements often do not cover the full cost of fines. In addition, compensation can be difficult and costly for banks to recover, particularly to former employees. More regulation and legal enforcement, however, is not the answer and can in fact be counter-productive, as it may create the perception that what is not prohibited is in fact permitted.

Whereas Hill's response to the banking sector's problem is to enforce covenant banking, Tracy's argues that performance bonds can curb misbehavior for bankers (senior managers and "material risk takers," like traders).<sup>17</sup> The banks could structure performance bonds as incentive compensation, and design them to discourage banker misconduct and ultimately enhance financial stability by changing the culture in finance.

Currently, bankers' pay generally consists of salary and bonus in the form of current cash plus deferred equity compensation that typically vests over three years. A performance bond could split the deferred pay into deferred equity (that continues to vest over three years) and a

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<sup>16</sup> For an in-depth discussion of banker ethos and covenant banking, see Hill, Claire A. and Richard W. Painter. *Better bankers, better banks*. University of Chicago Press, 2015.

<sup>17</sup> Tracy, Joseph and Hamid Mehran. "[Performance Bonds for Bankers: Taking Aim at Misconduct](#)," *The New York Fed: Liberty Street Economics*. 9 November 2016.

performance bond consisting of cash that is deferred for five years and that vests over the next five years. According to Tracy, the longer vesting and payout period increases the likelihood that problems will come to light before deferred cash is paid out to the bankers.

*Narratives as Models: How do we choose the right one?*

Building on Dr. Shiller's talk on narrative economics from the prior day, John Leahy asserted that economists are natural storytellers, but they call their stories *models*. Models provide narratives on how the world works, but there can be many models for one market even within the organization, like the Fed—which might differentiate by using varying inputs and goals, from historical correlations to optimizing behavior. The fundamental issue, he argues, lies with choosing which model to use in designing effective financial policies.

There have been many stories—or models—that explain why output was increasing at a high rate right before the financial crisis, but then settled into at a much slower rate even after the economy entered a recovery period.

There are competing models that can explain this change, each of which presents different policy implications. One model, or narrative, is that the initial growth rate was our baseline—so the economy *should* be growing at pre-crisis levels (or more), which suggests our current economy has a huge output gap. That would necessitate aggressive economic expansion policies through government spending. An alternative model reasons the change was the market correcting unsustainable, excessive growth—and our current rate is the new normal. Following that narrative, government spending would be ineffective. We would need new regulations that fundamentally change how the American economy functions.

Complicating these competing models, Leahy argues, is the fact that people are not good at processing information. People generally do not have the attention, expertise, or cognitive capacity to create stories and theories for complex, macro issues. Instead, they rely on the narratives available to them that fit their worldview—which can lead people to adopt false or faulty narratives. People often do not know the validity of these narratives until after the fact, which makes it even harder to know the right story to regulate against. To Leahy, preceding each crisis is a widespread and seemingly sound narrative that the economy is doing fine.

It is important to be aware that some people pick convenient stories to fit a policy goal, or for reasons other than sound logic and reasoning. In this world with a menu of stories to choose from, people tend to focus on stories that have elements of truth and fiction in them. It is much more convenient to choose beliefs that fit your own aims. Leahy is pessimistic about being able to stop crises from occurring, but thinks the community needs to do a better job of containing a crisis once one does hit. That cushion comes from the banking system in the form of available credit to make up for overleveraged and overvalued assets.

*Why do we need consumers to have financial health?*

Dr. Justin Wolfers of the Ford School of Public Policy provided a behavioral economist's perspective on how to study well-being and financial health. For behavioral economists, it is important to flesh out the assumptions underlying reasons policymakers and others are trying to stimulate or grow the economy in certain ways, as well as to understand how these changes will impact people's well-being.

Wolfers discussed research he conducted with Betsy Stevenson, also of the Ford School, about the relationship between income and well-being. The research has combated the famous 1974 "Easterlin Paradox," which claimed that while rich people are happier than poor people, rich countries are not happier than poor countries—and as countries got richer, they did not get happier. Other researchers have since modified the Easterlin Paradox, acknowledging the existence of a link between income and well-being among unmet basic needs, but claiming that beyond a certain income threshold, further income is unrelated to well-being.

Wolfers and Stevenson found that rich countries are indeed happier than poorer ones, and as countries get richer, they get happier. Further, on a logarithmic scale, the slope of the relationship between income and happiness is virtually the same in each country: so, for each 10 percent increase in income, a resident of Mexico is just as happy as a resident of Japan.<sup>18</sup>

Wolfers's and Stevenson's ideas have policy implications, both in the United States and abroad. In the United States, the research implicates thorny and controversial political issues like tax policy, wealth redistribution, the minimum wage, and government benefits. Wolfers's findings also demonstrate the importance of economic growth and development in less mature countries, as "...the extra hundred dollars in the developing world gives [the recipient] so much more happiness than it [costs the giver]."

### **VIII. BEHAVIORAL FINANCE AND SMALL BUSINESSES**

As discussed, behavioral economics and finance has shed light on the various biases that lead individuals into making less-than-rational decisions. These insights have particular importance in the small business sector. After all, individuals who are subject to the same tendencies as consumers run small businesses and microenterprises.

*Microentrepreneurs and Cash Management*

Bindu Ananth is the Chair of the Dvara Trust, whose mission is to ensure that every individual and enterprise has complete access to financial services. Ananth touched on several topics, noting that advances in microfinance have occurred but that small businesses need a lot of help. She noted three anomalies in how microentrepreneurs, particularly those in emerging markets, manage their cash. These anomalies are: (1) persistence in borrowing cycles without expansion;

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<sup>18</sup> For an in-depth discussion of the analysis and results, see Stevenson, Betsy and Justin Wolfers. "[Subjective Well-Being And Income: Is There Any Evidence Of Satiation?](#)" *NBER Working Paper*. 18992, 2013.

(2) a lack of joint ventures; and (3) labor and investment allocation decisions, which may be the result of failures in other markets. These observations illustrate the finances of the poor, and understanding these anomalies can help microfinance institutions to improve program and product designs.

Ananth mentioned that it is surprising how many microentrepreneurs find themselves in persistent borrowing cycles—in perpetual debt. Oftentimes these individuals finance their operations with high-interest rate debt. Ananth gave some promising examples of innovative financial products to address this need, including a daily bank loan that expands based on a business's sales. Startup capital traditionally came in the form of large loans expected to cover months or years of expenses—something for which many businesses could not make a

convincing case. A shorter-term credit model lowers barriers to entry, making capital more accessible and less risky for investors.

*Question for the speakers:*

Where do you see any opportunities for increasing behaviorally informed products or services?

- McCarthy: increase information on credit cards and other products **before someone opens an account**, so consumers can fully understand the contract they are signing
- Cole: leverage the increasing use of **algorithms** to create a better-designed choice set tailored to consumers
- Ananth: replicate FinTech companies' **focus on customer experience** and insights across the financial sector
- Wolfers: redesign **economics education**, by acknowledging consumers act irrationally, so more people can understand and engage with the subject

*Case Study: Mobile Phone Consulting in India*

Shawn Cole of the Harvard Business School discussed how small firms around the world can improve business practices and increase performance and profitability. Cole found—as other speakers had mentioned—that financial literacy and business education programs do not typically translate to better business outcomes. Perhaps these programs are too boring, preachy or complicated—the reasons why financial education programs can be ineffective is unclear.

Cole focused on agricultural productivity throughout the world. While there have been attempts to explain differences in productivity, Cole's research sought to determine what kinds of interventions can help small businesses succeed, particularly whether management practices can explain variations in agricultural productivity. Cole noted that consulting has

shown promise in certain contexts, like advising poor farmers in India.

Cole described research that evaluated a service that provides mobile phone-based agricultural consulting to poor farmers in India. Traditionally, India's government operated a system of "agricultural extension," which is intended to spread information to farmers on new agricultural practices through a network of public extension agents. Cole sought to understand if a consulting program based on mobile phone-based technology could work to improve farming practices and business outcomes. The service, called *Avaaj Otalo* (AO), advises farmers on best agricultural

management practices without an enormous price tag. The program allowed farmers to call into a hotline, ask questions and receive advice and answers from agricultural scientists. AO also allowed advisors to send messages to farmers to advise them on certain issues. It was, in Cole's words, a "two-way learning system to get and send information."

Cole's experiment had promising results. Cole found that a mobile phone-based consulting program could indeed help poor farmers achieve better outcomes, as farmers had a 7 percent higher cotton yield and a 24 percent higher cumin yield. Cole also found that there was considerable demand among farmers for high-quality agricultural information. The program was able to deliver timely, relevant, and actionable information and advice to farmers at dramatically lower cost than any traditional service (the service cost about \$0.60 per farmer per month), and it significantly broadened farmers' sources for information. The service allowed farmers to rely less on commissions-motivated agricultural input dealers for some information. The study also found that the farmers adopted better management practices that led to better results.<sup>19</sup>

While experiments like agricultural productive one has shown promise, there are potential issues researchers and policymakers need to overcome. Sometimes markets for advice do not work well for several reasons. For instance, there is a scalability problem. How does an organization reach millions of poor farmers in India? Moreover, sometimes it is hard to determine what kind of information the recipients need to improve their business practices. Also, sometimes consulting services can reinforce behavioral biases.

### *Small Business Access to Credit*

Brayden McCarthy, the Vice President of Strategy at Fundera, focused on challenges facing the small business sector. Fundera is an online credit marketplace that seeks to simplify the lending process to help small businesses secure loans.

McCarthy specifically focused on the search costs of obtaining credit. Reports demonstrate that small businesses can spend 24 to 48 hours filling out applications at banks, getting rejected, going to other banks and filling out the same information. Small businesses make up almost half of private-sector output—those 48 hours per business translates to an enormous productivity loss. Small businesses also face high turndown rates at both national banks and smaller banks, and often do not receive the full amount requested. Because credit is absolutely vital to small businesses, who do not have access to the public debt and equity markets like larger companies, a number of new entrants in the financial technology (FinTech) sector have stepped up to fill the large gap left by larger banks.

Explosive growth—and a severe lack of regulation—in the FinTech sector has led McCarthy and others to describe the state of the marketplace as the "wild west." To a large extent, the marketplace relies on "industry-driven self-policing." McCarthy argued that the generally unsupervised nature of the industry is cause for concern and that more regulation and certainty in

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<sup>19</sup> Cole, Sean, & Fernando, A. Nilesh. "The Value of Advice: Evidence from Mobile Phone-Based Agricultural Extension." *Harvard Business School of Finance Working Paper*, 13-047, 2012.

this area is welcome. Currently, a number of regulatory players have overlapping authority in the space, but oftentimes small business lenders and new online entrants into the market fall through the cracks.

This lack of regulation often leaves small business borrowers unprotected. To McCarthy this is a problem, because it is important to recognize that small business owners are subject to similar financial constraints that plague individual consumers. For instance, the ability for many small businesses to absorb occasional shocks is no different from consumers; these owners often do not have much of a cash buffer to make it through the inevitable decline in business. The JP Morgan Chase Institute's research reaffirmed this finding. In addition, McCarthy noted that small business owners are often prone to making less-than-rational decision-making. Some of McCarthy's research has sought to understand how owners choose between multiple credit options. Owners often choose the most convenient or the largest option, bypassing other important factors in reaching a sound decision—or, relying on heuristics to make decisions. A better choice set would make it easier for small business owners to choose the right option.

Ultimately, McCarthy thinks new industry players that address serious needs, like Fundera, are good. The rapid rise of new small business lending outlets has led to innovation and competition while giving small businesses new access to the credit they desperately need. Limited oversight, however, leaves small business owners vulnerable to predatory business practices. McCarthy noted that real problems do exist, including high costs, double dipping (the process of partially double-charging repeat customers with additional fees when they renew a loan before the term of the original loan is complete), hidden fees, and misaligned broker incentives. While industry self-policing is necessary and useful, more formal regulation and certainty is necessary.

## **VI. HOW CAN BEHAVIORAL FINANCE INFORM CONSUMER FINANCIAL PROTECTION POLICIES?**

Behavioral finance in the consumer context examines why and how individuals make financial choices. Optimally, researchers and policymakers would use these findings to craft smarter policies, and institutions would use behavioral insights to create new resources and products that help customers make healthy financial choices. Dean Michael Barr of the Ford School of Public Policy, and director of the Center for Finance, Law, and Policy, moderated a panel that included a law professor, a vice president from a large bank, an expert in women's banking, and an expert on financial health in the U.S.

Barr first provided more detail on how consumers make financial decisions. The standard, linear process of a decision, then action, then result, is inaccurate, yet many practitioners design policies using this model. There are multiple barriers to making healthy financial decisions, including a lack of time to spend, attention to give, or information to collect. Consumers are also subject to a number of biases, rely on heuristics, and generally do not have the ability to make rational decisions.

The issue—and opportunity for policymakers and practitioners—lies with the private market's interaction with consumer biases. If a consumer procrastinates signing up for the earned income



tax credit because the process appears too complicated, that limits his ability to pay for the things he needs. In this case, the private market has an incentive to help correct consumer biases. Tax filing companies would use that as an opportunity to increase their customer base by presenting an easy process with which consumers can apply.

Market and consumer incentives are not always aligned. If a consumer misunderstands compound interest, and therefore applies for a loan without fully knowing the consequences, the bank has an incentive to maximize interest payments. Here is where policymakers can have a positive effect, by realigning private and consumer incentives.

Behavioral Fallibility	Market neutral and/or wants to overcome consumer fallibility	Market exploits consumer fallibility
Consumers misunderstand compounding	Consumers misunderstand compounding in <i>savings</i> > Banks would like to <i>reduce</i> this to increase savings base	Consumers misunderstand compounding in <i>borrowing</i> > Banks would like to <i>exploit</i> this to increase borrowing
Consumers procrastinate	Consumers procrastinate in signing up for EITC > Tax filing companies would like to <i>reduce</i> this so as to increase number of customers	Consumers procrastinate in returning rebates > Retailers would like to <i>exploit</i> this to increase revenues

Figure 3: *The Firm and the Individual*, via [Behaviorally Informed Financial Services Regulation](#)<sup>20</sup>

The table above shows the effects of aligned and misaligned incentives. Barr explained that policymakers can resolve this through changing the rules and or changing the scoring. Rules shape what is available to consumers: for example, changing the enrollment default in a 401(k) plan, or requiring credit card companies to display the consequences of compounding interest on monthly statements. Changing the scoring, in contrast, shape how consumers’ decisions affect firms. Policymakers could affect the scoring by providing a tax benefit for firms with high or equitable enrollment in its 401(k) plan, or require firms to deposit a portion of the fees collected from high-cost borrowing into a financial education program.

Another scoring change for 401(k) plans is adjusting the *stickiness* of an opt-out system. If opting out of a plan that takes money out of your paycheck each month is easy, then many will opt out. Stickiness increases the transaction costs, making a consumer less likely to

<sup>20</sup> For a comprehensive overview of behaviorally informed financial regulation, see: Barr, Michael, Sendhil Mullainathan, and Eldar Shafir. *Behavioral Foundations of Public Policy*, Chapter 26: “Behaviorally Informed Financial Services Regulation, Princeton University Press, 2008. Figure adapted from a version of the chapter prepared for the Asset Building Program, via New America Foundation.

change their situation. If it is somewhat difficult, or sticky, then more consumers will remain in the plan.

Policymakers must also consider equity implications when designing behaviorally informed products and programs. One intervention would not work for every consumer. If someone is living paycheck to paycheck, it is not in her best interest to save at the maximum allowance in her company’s 401(k) plan. A sticky opt-out plan would do more harm than good.

Behavioral interventions can still help those with little income to spare. Increasing direct deposits, for example, decreases a consumer’s likeliness to spend extraneous cash—yet most

	Market neutral and/or wants to overcome consumer fallibility	Market exploits consumer fallibility
<b>Rules</b>	Public education on saving Direct deposit/ auto-save Licensing	Opt-out mortgage or credit card Information debiasing on debt (full information disclosure, payoff time for credit cards)
<b>Scoring</b>	Tax incentives for savings vehicles IRS Direct Deposit Accounts	Penalties to make opt-out system sticky Ex post liability standard for truth in lending Broker fiduciary duty and/or changing compensation (Yield Spread Premiums)

employers of low-wage jobs do not offer direct depositing, as it increases already high turnover costs<sup>21</sup>. Income is safer and more profitable in a savings account. Regulators could use rules or scoring to increase direct deposits; figure 4 illustrates more examples of changing the rules and scoring to realign market and consumer incentives.

A consumer cannot utilize a direct deposit if they do not have access to a bank in the first place, however. Mehrsa Baradaran, below, explains this access gap and other impacts of market exploitation on low- and moderate-income households.

*Rational Response to Irrational Behavior: Financial Product Defects*

Law professor Mehrsa Baradaran examined structural defects in America’s banking system to

Figure 4: Behaviorally Informed Regulation, via [Behaviorally Informed Financial Services Regulation](#)<sup>23</sup>

explain the ostensibly irrational choices of some low-income Americans, like taking out high-interest rate loans or paying high fees to send money to family members. Baradaran examined the accessibility of mainstream financial institutions, and believes understanding and reforming the environment in which struggling individuals must make economic choices is necessary.

Banking deserts, or communities without sufficient or substantial financial service providers, leave an estimated 40 million Americans underbanked. While the wealthy middle class are able to access a “mainstream, regulated, federally subsidized banking sector,” the underbanked must

<sup>21</sup> Barr, Michael S. *No Slack: the Financial Lives of Low-income Americans*. Brookings Institution Press, 2012.  
<sup>22</sup> Barr, Michael, Sendhil Mullainathan, and Eldar Shafir. *Behavioral Foundations of Public Policy*, Ibid.

navigate a “wild west hodgepodge of unregulated lenders that provide services to lower income [populations] at very high costs.” Because of this disparity, it is “expensive to be poor.” The underbanked pay as much as 10 percent of their income on routine financial transactions, like cashing checks, paying monthly bills or sending money. In her book, *How the Other Half Banks*, Baradaran noted that the average unbanked family earning \$25,000 a year spends more on finance than it does on food.<sup>23</sup>

To increase access to banks, Baradaran proposed that the United States once again use its national Postal Service to provide basic financial services to low-income Americans. Postal banks would provide a range of transactions and services, and could remain affordable from the economies of scale gained from a national network. Because of the extensive postal office infrastructure, the unbanked and underbanked would have more access to better financial services than they currently do. She described the United States’ prior use of postal banking as “the most successful experiment in financial inclusion in U.S. history,” and noted that the idea remains an important tool for financial inclusion throughout the world.<sup>24</sup>

### *Women’s Access to Financial Systems*

Mary Ellen Iskenderian, the President and CEO of global nonprofit Women’s World Banking, also focused on issues with access to traditional banking services—but with a focus on women. There are differences in how male and female consumers engage with financial institutions, products, and other resources, Iskenderian noted. Due to barriers that often isolate women, there are roughly one billion completely unbanked women in the world.

Oftentimes financial institutions fail to consider that men and women bank differently, and do not adequately design products tailored to women, or do not properly train client-facing staff to serve women with these products. Women, however, tend to be more loyal—and therefore more profitable—customers in the long run.

Women throughout the world consistently report similar barriers to inclusion. One factor is physical distance. In many areas, women typically stay closer to home than men do. Organizations need to seek new ways to connect with women to ensure they have access to traditional banking services.

Another factor is what Iskenderian described as “behavioral space,” which is the emotional distance between women’s needs and the resources and messaging their banking institutions provide to them. Some women do not feel connected to financial service providers, or feel that the service providers do not want to meet their needs. Indeed, many women typically report that

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<sup>23</sup> Baradaran, Mehrsa. *How the Other Half Banks: Exclusion, Exploitation, And the Threat to Democracy*. Harvard University Press, 2015

<sup>24</sup> In addition to *How The Other Half Banks*, see Baradaran, Mehrsa, “[It’s Time for Postal Banking.](#)” *UGA Legal Studies Research Paper*, No. 2014-07.

their local institutions do not sufficiently represent their interests. This disconnect makes women less likely to engage with these institutions, oftentimes remaining unbanked.

For instance, Iskenderian described her organization's partnership with the Pakistani mobile banking company JazzCash. JazzCash is "an actual bank account that is tagged with your mobile number and can be operated through your phone" to send and receive money or to make deposits or withdrawals. In this sense, JazzCash usefully breaks down the barrier of physical distance by allowing women to conduct typical banking services with their mobile phone.<sup>25</sup>

Iskenderian noted that initially, women's usage rate remained low with the program, even though the program seemingly broke down a major barrier between women's interactions with institutions. The principal way JazzCash brought new customers on board was through an agent network. Most of those agents were men, and signup required the customer to provide the agent with personal information, like a phone number—something Pakistani women were uncomfortable doing, thus exacerbating the behavioral space and emotional distance between them and banks.

JazzCash illustrates the importance of program design. Institutions must carefully evaluate their programs to uncover and mitigate unintended consequences. Minor tweaks in choice architecture can have big differences in the ways individuals interact with them. It is incumbent on choice architects to evaluate their products and intended effects. JazzCash illustrates the importance of knowing your audience and understanding that men and women may interact with institutions differently. Women's World Banking provides institutions with training in these areas to ensure that they can adequately reach women.

#### *Behaviorally Informed Financial Product Innovations*

Tim Spence, Chief Strategy Officer of Fifth Third Bank, offered a contrasting perspective to Baradaran and Iskenderian as the representative of a large, mainstream bank. Spence argued that large banks are in great position to promote financial inclusion and the well-being of their customers due to their size and sophistication. Though he admitted that banks do have opportunities to exploit

#### *Question for the speakers:*

You are in a room full of young academics. What would you like studied?

- Spence: Has the corrosive effect of the new disposable sentiment (fast fashion, one day shipping) affected our **capacity to build financial health** and equity ownership?
- Andres: How much time does it take for healthy (or unhealthy) **financial assets to grow**?
- Iskenderian: Why are banks not independently pursuing **increasing their female customer base**, which is often more loyal and profitable?
- Baradaran: How do we understand financial health in a **broader, intergenerational context**?

<sup>25</sup> Eighty-seven percent of Pakistani households own mobile phones, as of 2014 (Siddiqui, Khurram. "[87% of Pakistani households own cellphones, only 6.8% have internet connection: survey](#)," *The Express Tribune*. 3 February 2014); for comparison, about 90 percent of U.S. households owned a mobile phone in 2014 ("[Mobile Fact Sheet](#)," *Pew Research Center*, Accessed 12 March 2018.)

consumer misunderstandings for short-term gain, Spence argued that the greater value comes in helping consumers lead healthier financial lives. Ultimately, better performing customer leads to better bank performance.

The issue, of course, is to figuring out the right intervention and outreach work to improve consumers' financial lives. Spence's role at Fifth Third gives him insights into works and what does not. Spence agreed with his fellow panelists in that many financial education programs do not work as well as intended. It is not clear to Spence that individuals are leading better financial lives despite the financial education available to them.

But Fifth Third has experimented leveraging behavioral insights to create new, smarter financial tools designed to assist customers—what Spence called “behaviorally informed product innovation.” One example, mentioned earlier, is the mobile app Momentum, which helps customers pay off student loan debt. Momentum rounds up debit card transactions and uses the excess to pay off the principal amount on a user's student loans.

What's at work with Momentum? Behavioral research demonstrates that individuals are sensitive to large payments but insensitive to small payments.<sup>26</sup> By rounding up daily transactions, Momentum takes advantage of consumers' insensitivity to small amounts. Over time, these small amounts add up. Moreover, Momentum is automated—once users sign up with the program, there's nothing else they have to do. Therefore these individuals are more likely to stick with the program. Although as of the date of the conference Momentum was in its infancy, Spence estimated that the average millennial will take three years off of their loan repayment based on debit card spending patterns.

Spence's main point was that banks like Fifth Third with financial sophistication, vast customer bases, and strong reputations have the infrastructure to commit to programs that help their customers lead better financial lives. This, rather than financial literacy classes, is the way to serve customers better.

### *Building and Maintaining Financial Health*

Karen Biddle Andres, of the Center for Financial Services Innovation (CFSI), offered a useful link between the problems pointed out by Baradaran and Iskenderian and the hope articulated by Spence. CFSI's research has shown that 57 percent of American adults struggle financially, as many deal with an “unhealthy amount of debt, irregular income, and sporadic savings habits.” CFSI seeks to understand how Americans can overcome these issues to build better financial health.

CFSI studied underserved consumers—those who have a traditional bank account but who nevertheless must resort to alternative sources to meet their daily needs, like payday lenders. These are not issues affecting only low-income households, nor are they issues all low-income

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<sup>26</sup> Haisle, Emily, et al. “Myopic risk seeking: The impact of narrow decision bracketing on lottery play”. *Journal of Risk and Uncertainty*. 2008, pp. 37-57

households face. CFSI found that to be financially healthy, a household's level of income matters less than its volatility. According to their research, one third of financially healthy families make less than \$60,000 a year, and one third of financially unhealthy families make more than \$60,000 a year. Those that are financially unhealthy are far more likely to have unpredictable income.

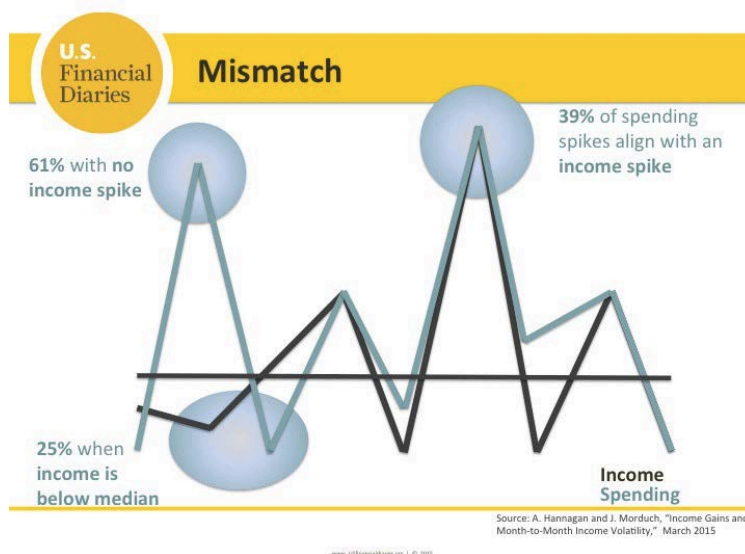


Figure 5: Mismatch of Income and Spending, via [U.S. Financial Diaries](#)

When income is unpredictable, consumers often rely on costly debt products to make ends meet. Those products cost American consumers \$173 billion annually—which Andres sees as an opportunity to design better products. To Andres, it is in understanding this portion of Americans who are not fully integrated into the mainstream financial system that she believes can bridge people like Baradaran, who focus on access issues, and Spence at Fifth Third, which focuses on how to help their customers lead better financial lives.

Behaviorally informed product offerings may be a small step towards better engagement between institutions and consumers that can have positive results for both parties. In essence, Andres's mission is to challenge the role of financial services institutions. These institutions need to answer fundamental questions, like why they are in business and who are they designed to serve. Andres even mentioned the possibility of being able to make the year-over-year change in financial health a key performance indicator that banks provide in their annual reports, based on their outreach mechanisms and product or resource offerings.

## VII. INVESTOR PROTECTION: HOW DO WE MITIGATE UNINTENDED CONSEQUENCES?

Behavioral research and innovation in the investment and retirement realm is important given the stakes involved: Consumers rely on financial institutions and their agents to make decisions regarding their financial futures. Take defined contribution retirement accounts, such as 401(k)s: when someone leaves one job for another, they have the option of moving their previous account to their new employer, leaving it with their old employer, rolling it over into an IRA (depending

on the amount), or cashing out. Here, *framing*, or the way in which someone or something presents information, plays an important role in peoples' behavior. The best option depends on the individual's financial situation, but that context is typically not available. Instead, the tone of the information provided to the consumer implies they *should* move her funds. Furthermore, it is one decision that usually is prompted during departure, when the person leaving the job is already inundated with tasks and to-dos. In this case, the decision framework is nudging consumers in the 'wrong' direction, or a direction they would not have otherwise chosen given enough time and information.

To solve this problem, University of Michigan Professor Dana Muir, from the Ross School of Business, has suggested both modifying the decision timeline and changing the way in which fund accounts communicate a consumer's options. By changing the framing, policymakers can nudge consumers towards a choice that aligns closer to those needs. Muir recommends first providing participants with a clear outline of their options, without any encouragement or pressure to make a decision. This simplifies the environment in which the participant is making a choice. She would then be required to wait a predetermined amount of time before being *able* to decide if, or where, to move the account funds. With a more complete understanding of her options, and in a more stable place than mid-transition, the participant is able to make a healthier choice.

Given the multitude—and sometimes divergent—interests of institutions and customers, finding interventions that genuinely help consumers can be difficult. The investor protection panel brought together individuals from various angles of the investment advice space to offer their thoughts on how policymakers and institutions can do a better job serving customers.

### *Defining Investor Success*

Steve Wendel, the head of a behavioral science unit at Morningstar, kicked off the investment protection panel issuing a call to arms to the investment advice industry. Specifically, Wendel outlined three interrelated areas where the industry can improve. To Wendel, the industry should (1) define investor success; (2) adopt an individualized idea of the "investor"; and (3) consider how financial services institutions, which have their own interests and incentives, utilize behavioral findings. Improving in these areas can lead to better client outcomes.

Wendel first focused on the need to define what success means in the investment advice context. Too often, he charged, investor success remains undefined, at the peril of the consumer. Without a specific goal in mind, it is difficult to know if fancy new financial literacy programs or brand-new investment products help or hurt consumers. Despite millions of dollars spent on new literature and product lines, Wendel believes consumers often are not better off. Investment advisors need to think more deeply about what it means for their clients to achieve investment success.

A second, related point relates to how we define "investor". Typically, the investment advice sector places individuals into buckets based on their risk profile. Wendel posited that big data now allows industry players to take a much more individualized approach to understanding their



clients by applying behavioral findings. Wendel cited studies indicating, for example, that certain groups of people only handle their financial matters on Sunday evenings, whereas other groups handle these tasks on Tuesday mornings. Based on the time of day in which researchers targeted individuals for, say, signing up for a retirement fund, researchers noted a doubling or tripling of consumer engagement. For Wendel, the behavioral research is out there to understand investors as a more nuanced, individualized level.

Wendel's third point called for researchers to consider the impact interventions and reforms have on financial institutions. After all, these financial institutions will only implement reforms that make sense from an institutional perspective. It is important, therefore, to balance both consumer and institutional interests when thinking about and designing remedies to certain behavioral issues. Financial institutions must be able to achieve their own goals while still doing right by investors.

*Question for the speakers:*

What is your perspective on roboinvesting? What opportunities and challenges have you seen?

- Borzi: people **learn in different ways**; roboadvisors need to customize their systems more to individual needs
- Choi: People **dislike recommendations from algorithms**, even when presented with data demonstrating their success
- Wendel: generating sound, individualized advice through roboinvesting is nowhere near as difficult as **capturing customers** in the first place
- Niebor: first, **digital access** needs to improve; second, roboadvising is **benefitting incumbent banks** at the expense of inviting new competition into the market

*Conflicts of Interest and Disclosure*

Phyllis Borzi, former Assistant Secretary of the Department of Labor (DOL) throughout the Obama administration, offered a regulator's take on the need for better protections in the investment advice space, specifically for conflicts of interests between investment advisors and their clients. The goal, to Borzi, is to ensure that investors receive "objective, simple, understandable, and individualized" advice. Unfortunately, investors often do not receive objective advice.

Borzi noted that independent research (*i.e.*, research that is not funded by the investment advice sector) demonstrates that investors are seriously harmed by their advisors' conflicts of interest. Part of the problem relates to the "tremendous imbalance between the people who hold themselves out as experts ... and the people who are the recipients of advice." Investors are often unaware of agreements their advisors have with third parties that might influence the advice they give to consumers, or they might be unable to appreciate the impact a conflicted advisor's advice may have on them.

For regulators, the question is how to overcome conflicts and put investment advisors and investors on a more level playing field. As other speakers noted, disclosure is not enough. In fact, Borzi noted perverse research findings in studies that examined the effects of conflict disclosure on



both advisors and investors. On the investment advisor side, some research as shown that advisors were more likely to act on the conflict once it was disclosed; they developed more of a “buyer beware” attitude towards their clients. On the consumer side, after an advisor disclosed a conflict, investors thought their advisors were “really great people” and people of integrity. The disclosure fostered a feeling of trust that made investors more likely to agree with investors’ actions, and less likely to push back. Research also demonstrates that investors sometimes feel obligated to follow the advice of their advisors because, if they did not, they felt that they were implicitly signaling distrust and felt guilty.

Borzi’s work at the DOL culminated with the contentious fiduciary rule, which expanded the definition of an investment advice fiduciary under the Employee Retirement Income Security Act of 1974. The rule required that financial advisors act in the best interests of their clients, by prioritizing clients’ interests above their own. The rule has been the subject of considerable debate, as it would impose significant compliance costs on investment advisors and their firms. The Trump administration initially delayed its full implementation to July 2019, pending additional review from DOL on its impact on investors’ access to advice and fund accounts.<sup>27</sup> In March 2018, the Fifth Circuit Court of Appeals ruled that DOL exceeded its authority in developing the rule in the first place. In response, DOL stated it would not enforce the rule, pending further review.<sup>28</sup>

So how do policymakers understand and effectively mitigate unintended consequences?

### *The Limits of Nudges*

James Choi, an economics professor at the Yale School of Management, discussed “the limits of disclosure nudges,” in a reference to *Nudge*. To the *Nudge* authors, “everything matters”—every choice architecture decision favors one type of outcome over the other and therefore is not neutral. Choi sought to add nuance to the nudge debate by arguing that the impact of certain nudges may not align with what choice architects originally intended.

To demonstrate his point, Choi described a field experiment related to *social norms* marketing, which aims to incentivize certain behaviors by providing people with information about the behavior of one’s peers. Choi conducted his own retirement fund experiment to test how consumers would respond to social norms. Choi mailed employees that did not fully participate in their employer’s 401(k) program a simple plan enrollment or contribution increase form. A randomized subset of the forms stated the fraction of age-matched coworkers participating in the plan, or age-matched participants contributing at least 6 percent of pay to the plan.

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<sup>27</sup> “[Presidential Memorandum on Fiduciary Duty Rule.](#)” *Presidential Memoranda*, issued 3 February 2017.

<sup>28</sup> O’Brien, Sarah. “[Labor Department won’t enforce investor protection rule after court decision.](#)” *CNBC.com*, 19 March 2018.

Previous research, often replicated, show that peer information interventions cause behavior to conform to the established norm<sup>29</sup>. Choi's study, however, found an opposite effect: the signup rate for those who did not receive peer information was 9.9 percent, while the signup rate for those who did receive peer information was 6.3 percent.<sup>30</sup> Peer information actually discouraged conforming to the norm. Upon further examination, Choi discovered the divergence appeared in how the recipients' salaries compared with their peers. Recipients with income *below* their state's median level may have felt that they were already behind their peers, so they were discouraged from starting.

Experiments like this one demonstrate the complexity of people and decision-making. Nudges may work, but Choi believes researchers and policymakers are only at the beginning stages of implementing effective nudges. It is important therefore to test every intervention continuously, to understand why, when and how nudges work—and in which contexts. Choi also discussed an experiment related to the frequency of seeing investment portfolio returns. A classical experiment found that seeing portfolio returns often causes people to shy away from taking investment risk. Choi noted that seemingly subtle shifts in the experiment's setting caused the result found in the classical experiment to go away. Because people respond differently in depending on the context, as in the savings experiment, it is important for researchers can identify true sources of heterogeneity while cutting down on the false positives that often lead researchers astray.

### *Lessons from the Financial Conduct Authority*

Jeroen Niebor, from the UK's Financial Conduct Authority (FCA, the UK's main financial sector regulator), provided insights from an international financial regulator. The FCA regulates how financial institutions interact with and approach customers. Niebor's role at the FCA is in the behavioral economics and data science unit, which works with policymakers to experiment and run tests prior to implementing actual policy.

In explaining the UK's investment regulatory landscape, Niebor focused on five main areas: (1) regulation of the sales process, or how products are sold to consumers; (2) rules related to misspelling products; (3) rules related to "misrecommending" products; (4) disclosure rules; and (5) screening individuals for product suitability purposes.

Niebor expanded on a 2012 rule change related to the compensation of investment advisors. Prior to the change, advisors did not charge investors for advice sessions, and instead received kickbacks from the funds they sold. The change sought to enhance disclosures to investors by requiring advisors to charge up-front fees or charge a percentage of the money invested. The rule has parallels to the fiduciary rules Phyllis Borzi worked on at the DOL.

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<sup>29</sup> Hong, Harrison, et al. "Social Interaction and Stock-Market Participation." *The Journal of Finance*, 59, 2004, pp. 137-163

<sup>30</sup> Choi, James, et al. "The Effect of Providing Peer Information on Retirement Savings Decisions." *The Journal of Finance*, 70, 2015, pp. 1161-1201.

Regrettably, Niebor noted, the rule change has not yet undergone sufficient evaluation since its implementation. Here, Niebor echoed Choi's suggestion that policymakers and researchers need to study constantly the way new rules impact people because sometimes new policies have unintended effects. For example, the rule change has led to an "advice gap" in the UK because many people do not want to pay up-front for investment services. Niebor noted the rise of robo-investing as an opportunity to close this gap and provide valuable services to people who might otherwise be missing important face-to-face advisor interactions.

Niebor also discussed the FCA's requirement of firms to screen individuals before it is able to offer investment products defined as 'complex.' These products require an 'appropriateness test', or a determination that an investor can fully comprehend the risk(s) involved in defined complex products.<sup>31</sup> Similar to the post-implementation period of the 2012 disclosure rule mentioned above, Niebor stated that this screening idea has not been properly researched. To him, researchers need to take a step back and more clearly define the goal of screening and test the best way to achieve particular outcomes, noting, as others at the Symposium had, that sometimes policies have unintended and unforeseen effects.

## **IX. CONCLUSIONS AND LOOKING AHEAD**

As behavioral finance becomes more popular, scholars, researchers and those working in the private sector understand that there is significant work yet to be done. As highlighted by many of the Symposium's speakers, many people throughout the world, including many Americans, struggle financially.

For individuals, even getting access to mainstream financial services can be difficult. For those that do have access, navigating complex product offerings and resources can leave customers frustrated, confused and even less well-off. Organizations have significant work to do to understand their customers and to create tailored, individualized product offerings that address real-world problems and biases. Regulators must continually test new policies and consider how their efforts impact both the institutions they regulate and the constituents they serve. At the macro, financial-system level, markets remain susceptible to shocks, and are not as rational as traditional economic theory might predict. Economists will continue to try to understand markets better, while organizations will help their customers lead better financial lives that help them better absorb market dips.

The Symposium offered a chance for diverse, behaviorally minded stakeholders to convene and share their work and ideas. This exchange should propel the next wave of behaviorally informed product and market enhancements, which hopefully will lead individuals throughout the world to lead healthier and more stable financial lives.

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<sup>31</sup> "[COBS 10.2 Assessing appropriateness: the obligations](#)," *The FCA Handbook*, COBS 10.2.1-10.2.2., last updated 1 March 2018.

## APPENDIX A: LIVE AUDIENCE EXPERIMENTS

The symposium included three live experiments to allow participants to observe how even well-informed people, who are in the moment learning about the effects of psychological bias, can nonetheless act in conformity with those biases—and conform they did!

### *I. Squirrels and Fine Print*

Even before it began, conference registrants participated in an experiment testing the effectiveness of disclosure. The CFLP sent an email detailing information on the conference three days before the event, including information on the agenda, location, and other logistics.

Towards the bottom of the email, a small section read:

#### MEALS

\*As part of our commitment to a more sustainable environment and positive food choices, participants will be provided nourishing and sustainable meals which are locally sourced. Healthy options for lunch may include, but are not limited to, a desiccated carrot and soy cheese sandwich on gluten-free soda bread; squirrel sausage and lentil soup; and other low sodium raw food options. If you prefer a more traditional, less healthy meal, you must email [ekim@ideas42.org](mailto:ekim@ideas42.org) no later than September 12, 2017 to opt out.

Of the more than 500 people that registered for the conference, only five emailed ideas42 asking to opt out. Assuming everyone who read the menu would want to opt out, 99 percent of registrants did not read the fine print.

Too often, explained Wright, regulators use disclosure as a cure-all for informational problems. A conference looking to nudge consumers in a better direction might have included this question up front, in larger font, and as an *opt-in* rather than opt-out choice.

### *II. Brochures and Change Blindness*

Humans are even less capable of detecting something is wrong *without* disclosure. For their next experiment, ideas42 set up the registration documents in front of a tall table. Behind that table stood one staff member, who would direct the attendees to sign a video release form, and offer to retrieve a brochure from behind the table. Once the attendee started to read and sign the release form, that staff member would bend down, out of sight, and an entirely different person would stand back up a few seconds later to hand them the brochure.

Only two people in a 40-minute registration period noticed.

This experiment was repeated with staff members who looked vaguely alike (same gender, race, and hair color), and with staff members who looked nothing alike (different gender, race, and hair color.) This is called *change blindness*, or the inability to see a change in your environment.

Attendees were distracted by the form they had to sign, so did not notice how, for instance, a white man with short hair transformed into an Asian woman with long hair in just a few seconds.

Humans often think they are better at multitasking than they actually are. We interact with so many stimuli at any one time that it is impossible to focus fully on each one: even at a quiet, uncomplicated conference registration desk, we get distracted and cannot fully process the world around us. If something is critical, this experiment suggests that disclosure alone is not enough. So disclosing information—of making people aware of what has changed, since they might have missed it—is certainly a good intention.

### *III. Fiduciary Rule and Faulty Disclosure*

ideas42 first divided the participants into three groups, near three jars containing an equal number of jellybeans. Within each group, facilitators split participants into Advisors and Estimators, and relegated to opposite ends of the room about thirty feet apart. Each Advisor was allowed to view their group's jar, and was tasked with guessing how many jelly beans it contained by writing the number on a piece of paper. Advisors could not discuss their decision-making with anyone else. After the advisors made their guesses, each facilitator gave an Estimator one Advisor's guess, on which they would base their own estimate. They could not clearly see the jar of jelly beans, and had to rely only on the guess they were given.

Unknown to anyone, each group received different information. The first group, acting as the control group, was told both the Advisor and Estimator would win if the Estimator had the most accurate guess. This group produced the most accurate estimates. Further, the average guesses of both the Advisors and Estimators were close: the mean Advisor guess was 1,455 jelly beans and the mean Estimator guess was 1,418 jelly beans. The actual number was 1,227.

The second group's Advisors were given a conflict of interest. Those Advisors would win if the Estimator had the highest estimate, while those Estimators would only win if they had the most accurate. Only the Advisors knew about this conflict—the second group of Estimators had the same information as those in first group. These Advisors would be trying to convince the Estimators of an inflated number of jelly beans, but without causing suspicion about their asymmetric incentives. This group produced a higher average estimate than the first. The mean Advisor guess was 2,326, while the mean Estimator guess was 1,084, a difference of 1,242. With larger sample sizes, the Estimator guess more closely matches the Advisor's mean.

The third group relied on a conflict of interest *with disclosure*—this time, both parties were informed of the conflict. Both the Advisors and Estimators were given the same information about who was incentivized to do what. This group produced the highest average guesses for both groups: 2,580 for Advisors, and 2,406 for Estimators.

As Wright put it in the beginning of the conference, “transparency is not always the best answer”. The disclosure fostered a feeling of trust between the Advisors and Estimators, but it did not cause Advisors to act in the Estimators' best interest: on the contrary, it gave them license to inflate their guess. That original display of honesty made Advisors feel like their duty had been done—they then felt free and justified to act in their own best, profit-maximizing

interest. The Advisors trusted the Estimators to assume their guess was likely too large, and therefore felt no qualms about overestimating. Estimators, in turn, felt like an adjustment had already been made to reflect a more honest guess, and took the guess at face value without a second thought.

The jellybean advisors took on the role of financial advisors, and the estimators the investors they hold as clients. Before the Department of Labor took action, an undergrad calling herself a financial advisor was just as legitimate under the law as anyone else calling themselves a financial advisor, jellybean or otherwise. It was the DOL's fiduciary rule that introduced some measure of certification and differentiation within the advisor market, by requiring financial advisors to disclose whether or not they are required to act in a client's best interest. The disclosure, however, may introduce trust in a relationship that requires vigilant scrutiny.

**APPENDIX B: GLOSSARY OF TERMS**

Below are definitions of terms and concepts referenced both in this paper and at the Symposium. This is not an exhaustive list of all concepts, but rather representative of the ideas discussed.

**Anchor:** a number, or other measurement, on which consumers make decisions (e.g., a credit card's minimum payment acts as an anchor for how much one should pay)

**Attention constraints:** difficulty staying focused on the present task

**Change blindness:** the inability to see a change in your environment

**Choice architecture:** the design of the environments in which people make choices

**Confirmation bias:** the tendency to focus on information that validates existing beliefs

**Decisional conflict:** an issue making decisions, when there are too many decisions to make

**Efficient markets hypothesis:** states that market prices can be explained in terms of fundamental metrics (e.g., stock prices are only a function of dividend payouts, forecasts of future earnings, and other measureable values of companies)

**Framing:** the way in which information is presented (e.g., "10 percent chance of winning" or "90 percent chance of losing")

**Information overload:** too much information to process, which makes it harder to act

**Libertarian paternalism:** people must be free to make the choice they want, but institutions should design systems that encourage healthier choices—an justification for nudges

**Mental accounting:** when a person views various sources of income as being different than others (e.g., thinking of how you would

spend a birthday check versus wages from one additional hour of work)

**Misforecasting:** inaccurately forecasting our own behavior

**Misperception:** wherein a person thinks they are in one situation, but are in another

**Moral hazard:** the incentive to take on more risk by those who do not bear its consequences (e.g., if you have bike insurance, you have less of an incentive to keep it locked)

**Myopia:** disproportionately focused on the present, rather than the future

**Narrative economics:** adds a sociological element to the efficient markets hypothesis, examining the narratives that people carry and transmit about the overall economy

**Nudges:** a gentle push to influence behavior in a way that is generally thought to benefit the individual

**Poor monitoring:** idea that we are not good monitors of our own behavior, especially when presented with temptation

**Present bias:** focusing on the needs and desires of the present, rather than long-term gains

**Recency bias:** the tendency for people to believe what has happened recently will continue to happen

**Social norms:** establishing how others within a similar social group act or behave

**Stickiness:** the measure of how easy a decision is to change