

Household finance

Financial decisions are difficult. They typically involve great uncertainty about the future, whether about future income, cash (liquidity) needs, or interest rates. Much has been learned in recent years about how individuals actually make these decisions. More often than not, financial decision making is influenced by impulsive judgments, emotions, temptation, loss aversion, and procrastination.

The research discussed in chapter 1 revealed systematic biases in decision making: that is, systematic departures from what individuals intend to do and say that they want to do and what they actually do. All these biases apply particularly to financial decision

The consequences of biases in financial decision making can be profound for people in poverty, or on the edge of poverty, because they lack a margin for error.

making, the topic of this chapter. Many factors drive these biases. People strive for simplification when confronted with difficult decisions (they tend to use shortcuts, or heuristics). The way financial products and tools are presented can shape their decisions (framing effects). Their preferences can be affected by acute aversion to uncertainty (loss aversion) and ambiguity. Emotions and the desire for immediate gratification (present bias) often win out against foresight. Even when people try to make careful financial decisions, the complexity of the decision environment often leads them astray.

The market can provide commitment devices and other mechanisms to help people overcome these biases, but it can also exacerbate them. In general, the market will have weak or missing incentives for resolving these problems when borrowers are naïve about their biases or underestimate their lack of understanding. Moreover, organizations may deliberately misinform or underinform their customers about the terms of the contracts they are signing.

The consequences of these biases can be profound for people in poverty, or on the edge of poverty, because they lack a margin for error. And because countries may not have the institutional capacity and the safety nets to safeguard individuals against financial losses, poor people need to be even more attentive to financial decisions (Mullainathan and Shafir 2009). Poverty also heightens uncertainty about future costs and benefits of different actions, magnifying the individual's focus on the pressing and current scarcity of resources—and further complicating decision making for individuals who are often overwhelmed with numerous important day-to-day decisions (see chapter 4).

Given these considerations, providing an appropriate institutional setting—that is, access to well-functioning financial markets and a sound regulatory environment—may not be enough to improve people's decisions. In developing countries, more proactive policies may be necessary to address the behavioral constraints on financial decision making. For example, providing access to a new insurance instrument may not be sufficient to induce people to use it if they perceive the product as ambiguous or do not trust the institution issuing it.

This chapter suggests ways that policy makers can make institutions more responsive to the behavioral factors driving people's financial decisions. This

chapter also discusses better ways to design and implement policy goals, such as increasing savings or access to and reliance on formal sources of credit. The chapter presents examples of interventions that have been shown to help address behavioral constraints on financial decisions.

The human decision maker in finance

Are people rational in their financial decision making? This question divides economists, as shown by the different views laid out in the 2013 Nobel acceptance lectures by Eugene Fama and Robert Shiller.¹ This section presents examples of financial conduct that is typical all over the world but that cannot easily be explained under the assumption that people carefully consider all costs and benefits before making a decision. These patterns of financial conduct, however, can be explained by findings from psychology about how people make decisions.

The discussion that follows presents a series of insights using stylized examples of individuals in developing countries, followed by supporting empirical evidence for each phenomenon, and the policy implications implied.

Losses loom larger than gains

Suresh is a farmer in rural India who grows cash crops. The land he farms has been handed down from generation to generation, and his family has an established history of growing and selling a well-known crop that yields a modest and low-risk return. In the past few years, Suresh has noticed other farmers selling a different crop that is much more profitable. However, the new crop is critically dependent on rainfall and thus carries greater risk. Suresh's cousin, an accountant in the nearby city, confirms that it would be more profitable in the long run for Suresh to invest in the new crop, so Suresh devotes a small part of his land to the new crop as a trial. Unfortunately, drought hits the region the next year, and the new crop does not do so well. Suresh takes this loss to heart and abandons the new variety. He forgoes the potential for more learning and higher growth.

Novi lives in urban Jakarta, Indonesia, and decides to invest in the stock market. She closely follows the value of her investments on a financial website and worries as the value of her investments fluctuates. Although her gains outweigh her losses, she feels much more concerned about the losses, and after some time she withdraws most of her funds from the stock market. She keeps a few stocks that have fallen significantly in value, hoping to sell them when prices recover.

For both Suresh and Novi, the negative experience of their immediate losses has more impact on their decisions than the positive effects of potential long-term gains. As a result, they make choices that can be described as economically suboptimal.

A large number of experimental studies on human decision making have demonstrated that people interpret the outcomes of financial prospects in terms of gains and losses in comparison to a reference point, such as the status quo, and subsequently put more weight on potential losses than on gains in their decisions (Kahneman and Tversky 1979; Wakker 2010).² This leads people to shy away from investment opportunities that are profitable over time, on average, but that might expose them to a loss at any given time. The importance of losses in financial decisions can be finely observed in data on portfolio holdings showing that people invest too little in risky assets relative to the level dictated by traditional views on risk and return. Many people hold no risky investments at all (see the review chapter by Guiso and Sodini 2013). This pattern can be explained by loss aversion and a myopic short-term focus on fluctuations (Benartzi and Thaler 1995; Gneezy and Potters 1997). In volatile equity markets, even a one-year investment horizon (rather than observing daily ups and downs as in Novi's example) might lead to significant losses, thus inducing investors to favor portfolios with minimal risk.

Moreover, people are unwilling to sell investments that turned out poorly (see the review by Barber and Odean 2013). By holding on to these investments, they avoid actually realizing losses, hoping to break even after future price increases. In comparison, people are often too eager to realize gains. The pattern of holding on to "losers" and selling "winners" violates basic principles of learning about the quality of the investments: while gains signal potentially good investments, losses signal poor ones. Returns would be higher in the long run by disposing of poor investments and keeping the good ones, but many people do not follow this precept because they are so averse to realizing losses.

Evidence from six Latin American countries suggests that the tendency to overvalue losses and undervalue gains can lead to economically significant welfare losses: in an experimental survey with real monetary payments, the more strongly an investor was affected by superficial (economically irrelevant) gain-loss framing, the worse the investor scored on a broad index of economic well-being (Cardenas and Carpenter 2013).

Policies that increase risk tolerance in the presence of losses and reduce investment short-sightedness may be beneficial. They should provide a frame in which losses become less salient, and information on

long-term benefits becomes more salient (Keys and Schwartz 2007). For example, people making financial decisions could be provided with aggregate information on volatile outcomes over time or over a cross-section of risks, which makes the short-term losses less “visible” than the long-term benefits (Gneezy and Potters 1997; Thaler and others 1997).

Present bias: Overweighting the present

Sonja is a school teacher in Kampala, Uganda, and has participated in a savings scheme in her neighborhood that specified monthly contributions. She accepted these contribution amounts without further thought. The school in which she works is now offering a subsidized savings account at the local bank for all its employees. Sonja must decide how much to save and put in the bank account. When the accounts were offered, Sonja resolved to make her savings decisions in the next few weeks. After a year and a half, she has still not invested the time to decide.

People have a tendency to frame financial decisions in a narrow way, rather than considering their overall financial situation.

Linda faces a similar problem. She recently bought a house in Johannesburg, South Africa, and is considering insuring her property; she would feel better if her property and valuables were covered. When she finds time to delve into the details of the insurance, she discovers that there are many different contracts. Comprehensive insurance also involves significant monthly costs, biting into her budget. For some insurance, she would have to provide documentation on her valuables, which will require more time. She decides to wait a bit and spend more time thinking about what she should do.

Financial decisions require difficult trade-offs. Although people like Sonja would like to save and provide for their future, current consumption needs loom large. They may procrastinate and postpone decisions, losing time in which they could be accumulating savings. Similarly, people like Linda value the benefits of security and the long-term benefits of financial prudence, but when they begin the process of obtaining insurance, they lose sight of these general benefits and get discouraged by the costs, the large number of choices, and the unattractive details they must comb through. Hence, they may remain uninsured.

Savings, investment, and insurance are important development goals, yet people often face daunting obstacles in pursuing them even when suitable financial products are available and individuals have disposable income: that is, even when the basic supply and demand conditions are met. A major tendency identified by the behavioral finance literature that accounts for the underutilization of financial products is *present bias*. This leads decision makers to shift good experiences (consumption) toward the present and bad experiences (making difficult decisions about how much to save) toward the future, leading to overconsumption and procrastination. It also implies that people might be patient when weighing one future payoff against another but become very impatient when making similar choices involving the present. This pattern can lead them to reverse their preferences—even if they have planned them carefully—and prevent them from successfully implementing their financial plans (Laibson 1997; O’Donoghue and Rabin 1999). *Temptation* is an extreme form of time inconsistency: people may value some goods or payoffs only at the moment of consumption, or on impulse, but not in the context of the past or the future (Banerjee and Mullainathan 2010).

The empirical evidence suggests that behavior and decisions driven by impatience, procrastination, and temptation are economically relevant. A striking empirical example of the coexistence of strong impatience and procrastination comes from a study of University of Chicago business students (Reuben, Sapienza, and Zingales 2007). Students received payment for participating in a survey and could choose between receiving the payment immediately after the survey or receiving a much larger payment two weeks later. Many students chose the immediate payment, indicating strong impatience. However, many did not cash their checks until four weeks after the experiment. Some procrastinators waited as long as 30 weeks to cash their checks. Those who initially indicated a strong preference for immediate payment were also more likely to delay cashing their checks. The finding can be interpreted as an intention-action divide.

Impatience is strongly correlated at the individual level with low saving and imprudent financial planning (Moffitt and others 2011; Sutter and others 2013). The flip side of saving is borrowing. A particularly expensive way to borrow is maintaining revolving balances on credit cards.³ Costly credit card borrowing has been shown to be related to time-inconsistent, present-biased preferences (Meier and Sprenger 2010), suggesting that people do not plan to incur costly fees but are stuck in a vicious behavioral cycle.

Time in psychological terms also has a dimension of “distance.” Psychology research has shown that people construe decisions differently when considering them in general terms for the long run (“high distance”) from when they are delving into the details to implement them now or shortly (“low distance”) (Trope and Liberman 2003; Trope, Liberman, and Wakslak 2007; Fiedler 2007; Liberman and Trope 2008). Low distance implies a focus on concrete and subordinate features (the details), feasibility, and cost, while high distance implies a focus on abstract and superordinate features (general aspects), desirability, and benefits. Because insurance and saving are beneficial in the long term (that is, under high distance) but require immediate decisions and immediate monetary costs (that is, under low distance), differences between planning and actually doing are exacerbated for these important financial decisions.

The traditional tool of providing information may not help overcome these problems. People may simply avoid information that makes them anxious or uncomfortable. Policy measures that neglect these effects may backfire. For example, without complementary support or individualized counseling, informing people that their savings balances may be too low may not be effective or might even be discouraging (Caplin and Leahy 2003; Carpena and others 2013).

The behavioral obstacles to financial decisions discussed here are likely to have much larger detrimental effects in low-income countries than in higher-income countries. Behavior and choices from one time period to another are influenced by the psychological resource of *willpower*, which has been likened to a muscle: it can be depleted by the exertion of free will and requires time and resources to replenish (Baumeister and others 1998; Baumeister, Vohs, and Tice 2007). Significantly, from the perspective of development policy, the pressing demands of poverty can make it more difficult for the poor to exert and replenish willpower (Spears 2011),⁴ worsening the effects of time inconsistency and self-control.

While sophisticated financial products such as automatic deposits to savings, mandatory retirement contributions, or default insurance programs are commonplace in advanced economies, the poor in developing countries do not typically have access to such instruments (Collins and others 2009). The resulting cash-based economy is highly susceptible to temptation, procrastination, and other behavioral diversions to saving. This latter aspect provides a strong rationale for policy interventions, especially in developing countries, to provide specific institutions that help people overcome willpower deficits and impose their current

preferences for saving on their future selves (Ashraf, Karlan, and Yin 2006; Bauer, Chytilová, and Morduch 2012; Gal and McShane 2012).

Cognitive overload and narrow framing

Ikram is a small business owner in Tangier, Morocco, and has a long-standing relationship with a local microfinance provider, having borrowed and repaid funds many times. He does not earn very much, and a recent unexpected illness has left him with health fees that he cannot pay out of pocket. He approaches his trusted microfinance provider for funds, who agrees to provide him a loan based on his clean credit record. However, during this very stressful period, Ikram unintentionally neglects some of his other financial responsibilities. He does not pay his rent on time and forgets to pay the electricity bill. His landlord, who cannot reach him because Ikram is getting treatment in the hospital, initiates an eviction order. His electricity is cut off for nonpayment of the bill. Unintended negligence worsens the monetary burdens and anxiety of Ikram’s already tenuous situation.

People have limited attentional and mental resources. Poverty leads to situations that impose a high cognitive tax so that these resources are used up quickly; the resulting behavior leads to financial costs that add even more strain, possibly initiating a vicious cycle of poverty (see chapter 4).

Willpower and attention are limited cognitive resources. In times of acute scarcity, financial decisions place strong demands on these resources, using them up quickly. When cognitive resources are overtaxed, decision quality typically suffers, as decisions are driven by emotional impulses and a narrow short-term focus (Baumeister, Vohs, and Tice 2007; Shah, Mullainathan, and Shafir 2012). Moreover, in such settings, small situational factors such as an exasperating bus ride to a bank are often a compelling hindrance to implementing prudent financial choices (Bertrand, Mullainathan, and Shafir 2004; Mullainathan and Shafir 2009).

People also have a tendency to frame financial decisions in a narrow way, rather than considering their overall financial situation (Thaler 1990; Choi, Laibson, and Madrian 2009; Rabin and Weizsäcker 2009; Soman and Ahn 2010; Hastings and Shapiro 2012). Narrow framing can lead individuals to compartmentalize funds into mental categories. They may treat funds for food purchases as distinct from funds for school fees, for instance, and neglect the overall financial situation. In Ikram’s example, it is conceivable that he has put some funds aside for family events like a wedding; but because he mentally tagged these funds for a “wedding,” during his recent period of strain, he might

not have considered using them to pay his health bill, housing, or similar expenses unrelated to the tag. According to a well-documented example in which money is not treated as fully fungible, people often have some low-interest savings, while at the same time they are borrowing at much higher rates (Gross and Souleles 2000, 2002; Stango and Zinman 2009). A holistic view of their finances, though, would allow them to avoid high credit costs by using their savings to repay their expensive loans.

How people categorize funds depends on how and why they received them, on the social rules and rituals directing their circulation, and on socially and culturally supported mental models. For instance, life insurance in the United States was once considered a gross breach of mental categories—human life was incommensurable and sacred, and the monetary world was profane. Over the course of the 19th century, life insurance became acceptable, but only because life insurance itself was changed into a kind of sacred ritual, when prudential planning became part of a “good death” and the social basis for a new mental account was established. The same was true of life insurance for children, which was once viewed with great suspicion, but eventually came to be a way to value the love and affection children provided to families. More generally, Zelizer (2010, 100) notes that “mental accounting cannot be fully understood without a model of ‘sociological accounting.’”

Providing individuals with a holistic view of their finances would be a useful policy goal in developing countries. In addition, timely reminders about upcoming payments or savings can have substantial influence on improving financial outcomes, as discussed later in the policy solutions section of this chapter.

The social psychology of the advice relationship

Victor is the sole provider for his family members in Buenos Aires. He worries about what would happen to them if he was injured and could not work. He also wants to save and invest for the future. He goes to a branch of the local bank to meet an adviser, who offers him a range of life insurance and investment products. Victor does not have much understanding of or interest in financial issues, but he follows the advice of the bank’s agent and buys a broad insurance product with a conservative savings component.

Financial advice is offered by multiple people who often have diverging incentives and differing information. Structuring policy for financial advice therefore requires taking account of the possible self-interests of the agents who give advice, the content and quality of the information that is collected from—and given

to—the person being advised (the advisee), and how the nonexpert advisee uses this information and the advice to come to a decision.

Disclosure requirements can have perverse effects on the products agents recommend, since agents could shift their recommendations from those products for which disclosure has been made more stringent to other products for which commissions remain opaque (Anagol, Cole, and Sarkar 2013). In particular, even if firms are required to offer basic, affordable, and transparent products, they may not provide sufficient information about them. Instead, they may offer more opaque alternatives with hidden and complex fees and costs (Giné, Martínez Cuellar, and Mazer 2014).

Psychological research into advisers’ reactions to disclosure requirements shows that when conflicts of interest cannot be avoided (for example, because agents are paid based on commissions), then advisers often give even more biased advice (Sah and Loewenstein 2013). This finding supports the importance of having an institutional framework that allows for independent, unbiased intermediaries in markets where financial advice is essential.

Even when the agent aims to provide the best advice possible for the customer, agents may misjudge the risk tolerance of their clients and recommend inappropriate products as a result. Judgments about other people’s attitudes toward risk are central to virtually all financial products and decisions. However, there is a well-documented tendency to judge people who are risk averse as less risk averse than they truly are and people who are risk loving as less risk loving than they are (Hsee and Weber 1997; Faro and Rottenstreich 2006).

The agent’s problem in assessing the risk preferences of his or her client is compounded by framing effects. Different formats for presenting risk typically lead clients to reveal different attitudes toward risk. Which of these formats leads to the best decision, in the sense that it maximizes returns over time? Some studies have developed computerized simulation techniques that allow decision makers to “experience” the risk and volatility of different investments before deciding which to choose (Goldstein, Johnson, and Sharpe 2008; Donkers and others 2013; Kaufmann, Weber, and Haisley 2013). The evidence suggests that these techniques lead to decisions that are most stable over time (and therefore to “buy and hold” strategies, increasing returns) (Kaufmann, Weber, and Haisley 2013). Even after experiencing a bad outcome, decision makers more often stick with their investment strategies following a decision aided by a simulation technique than when they made a decision based on other presentation formats.

These insights and the evidence suggest that the measurement and communication of the clients' risk tolerance, and the presentation of the financial product, are important considerations for financial agencies in designing, implementing, and enforcing regulations.

While these findings point in clear directions for the regulation of financial advice, at a deeper level it can be asked whether research provides a genuine rationale for consumer protection in the advice relationship. One might predict that clients anticipate the motives of self-interested agents and thus interpret the advice given by agents in light of their incentives. Empirical research has shown, however, that clients often follow advice blindly, literally shutting down their own thinking about the decision problem (Engelmann and others 2009). Clients may not understand, or perhaps even perceive, the strategic aspects in the advice relationship. Changes in disclosure rules on conflicts of interest do not change investors' behavior in an experimental agency setting (Ismayilov and Potters 2013; see converging evidence in Sah and Loewenstein 2013). Careful regulation of financial advice therefore seems warranted.

Policies to improve the quality of household financial decisions

This section presents examples of several policies shown to improve financial decisions. It begins with how choices are presented (framing) and then describes several policies that actually change the choices that people are offered.

Framing choices effectively

Decisions and financial outcomes often can be improved at virtually zero cost by choosing the description carefully (in the case of an institution that aims to help people make good financial decisions) or by stipulating requirements for how information

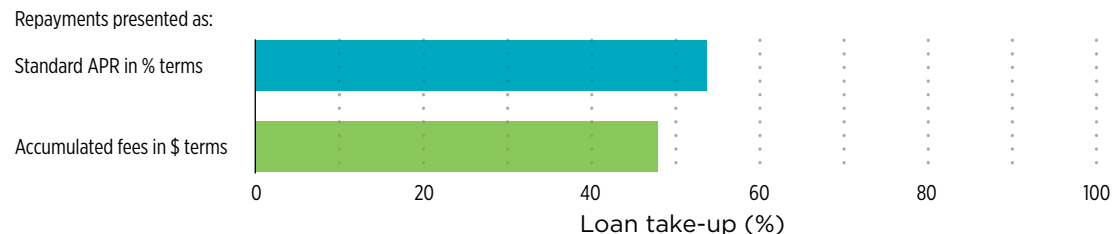
should be provided (in the case of a regulator). There are two important insights on framing interventions. First, alternatives can be presented to financial decision makers in various ways that address the biases described earlier, without affecting the economic essence of the information. Second, financial products can be described either in simple and clear ways or in complex and opaque ways, with direct impacts on how decisions are made.

Many studies have demonstrated the power of framing effects. A study on payday borrowers in the United States, for example, illustrates the effectiveness of framing in an experiment where repayments were presented either in dollar amounts or as interest rates (figure 6.1) (Bertrand and Morse 2011). This very simple reframing of information significantly discouraged costly repeat borrowing. The study makes an important point: an information format that seems most informative and thus most useful from the perspective of a financial professional or an economist is not necessarily suited to help nonexperts make good decisions. Interest rates can be confusing to decision makers and may mask the magnitude and frequency of repayment obligations. Similar effects have also been observed for percentages versus frequencies, especially when relating to conditional probabilities (Gigerenzer and others 2007). For example, the claim that "the number of successful investments increased by 150 percent" conveys very different information from the claim that "the number of successful investments increased from two in a thousand to five in a thousand."

Products or investments are typically presented to consumers in groups or categories. The categorization can be arbitrary and can have strong effects on choices. For example, when offered different investment categories, people sometimes tend to split investment amounts roughly equally across categories, irrespective

Figure 6.1 Simplifying information can help reduce take-up of payday loans

Simple changes in how repayment information is presented can have meaningful impacts on financial behavior. In this study, payday borrowers were provided with repayment in APR terms and in terms of dollar amounts. Presenting information in dollar amounts led to significant reductions in repeat borrowing from payday lenders.



Source: Bertrand and Morse 2011.
 Note: APR = annual percentage rate.

of the nature of the categories. Thus when presented with the two categories of stocks from North America (Canada and the United States) and South America (including Argentina, Brazil, Chile, Uruguay, and República Bolivariana de Venezuela), individuals are likely to invest more in U.S. stocks than when presented with the five categories of stocks from Argentina, Brazil, Canada, Chile, the United States, Uruguay, and República Bolivariana de Venezuela. These effects have been demonstrated in various studies, including those with experienced managers and those with significant stakes in market environments (Bardolet, Fox, and Lovallo 2011; Sonnemann and others 2013).

Another example of effective framing is choice simplification, particularly with respect to the number of alternatives presented. For most products, an agent, adviser, or bank can present the decision maker with only a limited set of alternatives. If people had unlimited bandwidth, more information would always be better for decision makers, assuming that they could freely choose the number of alternatives they want to consider, given some search cost. In practice, however, people are often overwhelmed by a large number of alternatives and end up postponing decisions or using simple heuristics or rules of thumb (Johnson and others 2012; Drexler, Fischer, and Schoar 2014). Reducing the number of alternatives can therefore be an effective intervention. It has been shown that procrastination is less severe as the choice set becomes smaller (Tversky and Shafir 1992). A study of consumer credit in South Africa finds that more loans were made when a smaller number of combinations of interest rates and loan amounts were suggested to customers (Bertrand and others 2010). The effect of this simple framing manipulation was equivalent to a 2.3 percent reduction in the loan interest rate. Similarly, in their current work, Giné, Martínez Cuellar, and Mazer (in progress) are finding a significant improvement in the ability of respondents in Mexico to identify the optimal loan and savings products when they were presented with succinct summary information about savings rates and loan costs, as compared to a finer breakdown of commissions, fees, and returns.

From the perspective of regulation, it is important to keep in mind that individuals are very sensitive to the framing of alternatives and that there is typically no “neutral” or “natural” frame: should eight different insurance products be offered or nine? Should they be presented in two categories or three? To this end, policy makers need to take into account the behavioral consequences of different presentation formats and choose the format that maximizes consumer welfare. The evidence discussed here shows that the optimal format will often deviate from the

classical view that more information is always better than less information.

Changing the default

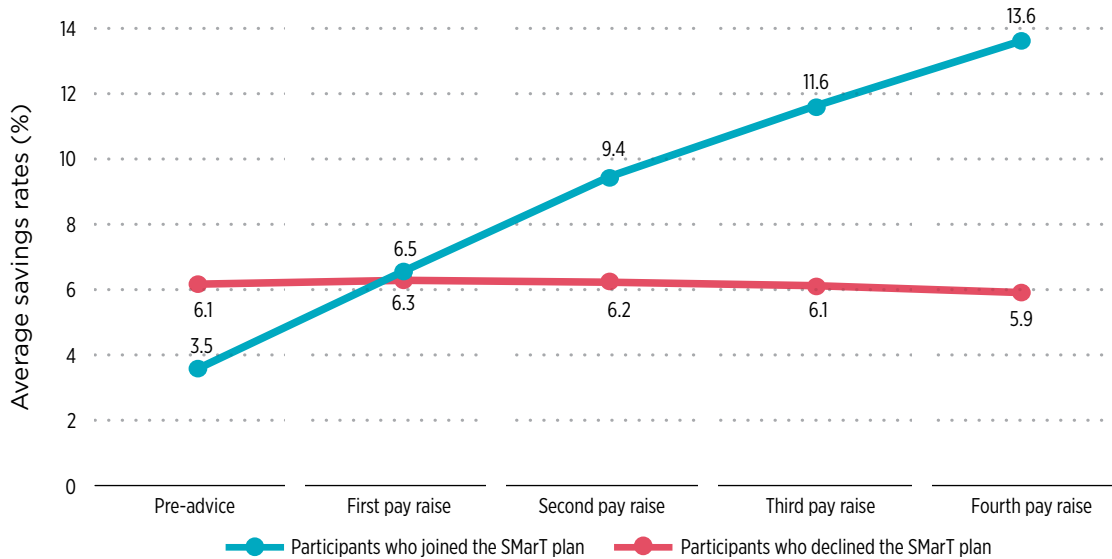
One of the best-established findings in the behavioral finance literature concerns the power of defaults (Madrian and Shea 2001). Defaults are ubiquitous in the administration of financial choices: newcomers to a job, for instance, are presented with a multitude of forms requesting their choices on pension contributions, health insurance plans, tax-favored savings opportunities, and much more. Except in cases in which legal restrictions make participation in certain schemes mandatory, the natural default has long been perceived to be no participation and no contribution; yet in some circumstances this default assumption may not be the best policy. In many situations, positive contributions imply a higher net income discounted at all reasonable market discount rates. This is particularly true for all schemes in which employers match contributions or the government provides favorable tax treatment. A positive contribution default therefore often means higher income; for those who have strong reasons for significantly smaller, but immediate payouts, it is typically sufficient to tick a box.

Various studies have demonstrated that nonparticipation in highly profitable schemes is driven to a large extent by procrastination and passivity. For example, studies that examine the effects of a switch to automatic enrollment in 401(k) pension plans for employees of large U.S. firms find that both enrollment and contribution amounts are strongly driven by the defaults provided by employers (Madrian and Shea 2001; Beshears and others 2008). The effects of defaults can often be amplified when combined with the framing interventions discussed above: reducing a complex choice of a retirement savings plan into a simple binary choice between the status quo and a preselected default alternative dramatically increases participation in the plan (Beshears and others 2013).

People often find it easier to make decisions that require trade-offs between only future outcomes, as discussed. Choosing between different savings rates in the future does not involve the short-term focus and immediate financial consequences of decisions for today. A clever intervention uses these insights to have people choose their own defaults for the future. In this method, known as SMarT (Save More Tomorrow), employees stipulate increases in savings out of future pay raises (Thaler and Benartzi 2004; Benartzi and Thaler 2013). No current payoffs need to be considered; no reductions in disposable income are experienced, which could be perceived as losses and therefore weigh heavily in the decision; future increases occur

Figure 6.2 Changing default choices can improve savings rates

The Save More Tomorrow (SMarT) plan allows employees to allocate a percentage of future pay raises toward retirement savings. By committing to save more in the future through automatic payroll deductions, participants increased savings without sacrificing current disposable income.



Source: Thaler and Benartzi 2004.

automatically, by default, allowing savings to accumulate as long as the person remains passive (figure 6.2).

One possible explanation for the effectiveness of the changes in default is that it is easier to choose the default. To make a choice not to comply with the option provided entails a cognitive cost: people must stop and reflect and may need to determine their preferences for options they had never considered before (Stutzer, Goette, and Zehnder 2011). There may also be an endorsement effect, where individuals interpret the default as a form of advice coming from a knowledgeable party (Madrian and Shea 2001; Atkinson and others 2013). In both cases, a policy that is aimed at setting defaults in a psychologically informed way will exert little influence on people with strong preferences. However, these same defaults will have considerable influence on those people who would otherwise not ponder the decision carefully.

Making microfinance more effective

Abundant evidence indicates that access to financial services for households with limited income is an important factor in reducing poverty and inequality (Karlán and Morduch 2010; World Bank 2008; Imai and Azam 2012; Mullainathan and Shafir 2013). Furthermore, a large body of evidence shows that by extending beyond conventional reaches of markets, microfinance institutions (MFIs) enable the poor to smooth income shocks (see the review in Armendáriz and Morduch 2010).

Serving clients who have few assets, MFIs extend noncollateralized loans to the poor. MFIs rely on screening, monitoring, and contract enforcement within borrower groups and generally have high repayment rates (Giné, Krishnaswamy, and Ponce 2011). However, recent work draws attention to the influence of social factors on the high repayment rates. Ties of loyalty among group members due to social norms, as well as the fear of the stigma of default, deter high risk taking and encourage repayment of group-based loans (Bauer, Chytilová, and Morduch 2012; Cassar, Crowley, and Wydick 2007). In contrast, exposure to information on defaults by unrelated people can reduce individuals' propensity to repay (Guiso, Sapienza, and Zingales 2013), and solvent borrowers may have a higher inclination to adopt adverse behavior if they perceive that the lender is not financially strong (Trautmann and Vlahu 2013). These findings suggest that trust and confidence among group members, as well as views of the lender, serve as an important foundation for successful microcredit lending and that the design of information-sharing mechanisms may be guided with this insight in mind.

Using nudges and reminders

A recurring insight from research on behavioral finance is that simple interventions that account for or remove psychological constraints, such as social nudges and reminders, can go a long way toward

improving financial behavior. One aspect of human behavior where reminders can be particularly effective is overcoming lack of attention.

A series of experimental studies in Bolivia, Peru, and the Philippines show that simple, timely text messages reminding people to save improve savings rates in line with earlier established goals (Karlan, Morten, and Zinman 2012). The studies find that reminders that emphasize a specific goal, such as saving for a purchase of a consumer durable like a television, are twice as effective as generic reminders; this finding suggests that individuals treat money differently depending on the intended purpose and are more likely to be willing to save for a specified purchase than more generally. Likewise, reminders about late fees on loans have been shown to significantly improve timely repayment behaviors up to two years after the reminder (Stango and Zinman 2011).

People's tendency to mentally structure income and spending in different accounts can be turned into a tool for policy. In a recent study of employees in India, a simple nudge was used to establish different

here highlight the potential role of simple and often inexpensive nudges that can help improve financial behaviors. These nudges may even play on the behavioral patterns and use them in smart ways.

Fighting temptation through commitment

Lack of self-control is a leading explanation for lack of savings, and the absence of default savings plans for most people in developing countries makes the problem worse. While individuals tend to put off important financial decisions to the future, often the same individual recognizes the importance of difficult financial choices—as long as the decision point occurs in the future. Perhaps policy makers can design and offer products that allow individuals to commit to certain savings goals but do not allow them to renege without significant penalty.

The most basic form of such commitment comes from the experience of rotating savings and credit associations (ROSCAs). Such neighborhood savings schemes are very popular in developing countries and allow people to invest in goods that require large up-front payments. The mechanism of ROSCAs centers on the illiquid nature of contributions and funds. Each ROSCA member contributes a fixed monthly amount to the central pot, and a randomly chosen individual gets the entire pot each month. By making saving a public act, these schemes exploit the value of social pressure from other ROSCA members to commit them to their desired level of savings (Ardener and Burman 1996). This arrangement is similar to the group lending model in microfinance. Traditional savings arrangements like ROSCAs may provide not only savings opportunities where access to financial markets is missing but also a commitment device in circumstances in which the cultural or social environment makes individual implementation of a strict savings schedule difficult or impossible.

Evidence from developing countries shows that substantial demand for savings exists and that commitment devices are likely to have strong and positive impacts on behavior. When savings accounts were offered in the Philippines without the option of withdrawal for six months, there was a large demand for such accounts and a take-up rate of nearly 30 percent (Ashraf, Karlan, and Yin 2006). After one year, individuals who had been offered and had used the accounts increased savings by 82 percent more than a control group that was not offered such accounts. A recent study in Kenya finds that providing people with a lockable metal box, padlock, and passbook increased investment in health products by 66–75 percent (Dupas and Robinson 2013).

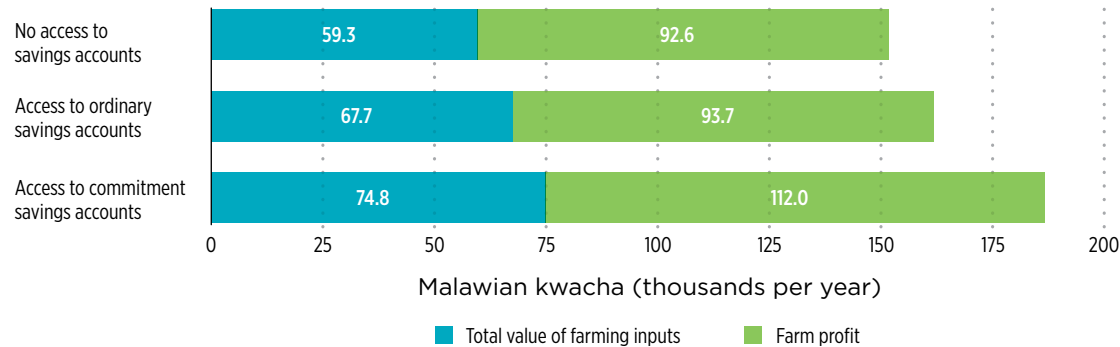
There is typically no “neutral” or “natural” frame. Policy makers need to take into account the behavioral consequences of different presentation formats and choose the format that maximizes consumer welfare.

accounts for spending and savings among workers with very low savings rates (Soman and Cheema 2011). Weekly salaries were artificially partitioned into two separate envelopes: one labeled “for consumption” and another labeled “for saving.” Although there was no binding restriction on spending from the “for saving” envelope, this simple manipulation led to an improvement in saving over the usual method of single lump-sum remuneration.

The policy lesson from these examples is clear: while policy makers may not be able to solve individuals' behavioral constraints, they can certainly recognize those constraints and design policy to account for them. The silver lining is that this need not involve monumental changes in policy making or even increases in budgets. Rather, the examples discussed

Figure 6.3 Commitment savings accounts can improve agricultural investment and profit

Smallholder cash crop farmers in Malawi were provided formal savings accounts. A randomly selected number were also offered commitment accounts. Those with access to commitment accounts were able to save more for the planting season and generated larger farm profits from the next harvest.



Source: Brune and others 2013.

A study among farmers in Malawi randomized access to ordinary savings accounts and commitment savings accounts. The results show higher demand for commitment accounts and find suggestive evidence of relatively larger welfare gains from such accounts in the form of crop output and other farming outcomes, as well as household expenditures (Brune and others 2013). Figure 6.3 shows the expansion in the size of smallholder cash crop farms as farmers gain access to commitment savings devices in a randomized evaluation. Although the experiment did not identify the precise channel of productivity improvements (resisting borrowing from social networks, enabling higher risk taking with savings buffers, or committing against pure self-control problems), given the high take-up rate and usage among local farmers, commitment mechanisms have the potential for increasing farm profits as financial access is broadened. One concern, however, about binding commitment devices is that they may, at least initially, crowd out existing social or cultural mechanisms for the accumulation of resources.

Simplifying and targeting financial education

Increasingly financial education programs are becoming an integral part of development reform. Whereas earlier programs focused on providing basic knowledge, more recent research also tries to remove psychological barriers to changing financial behavior.

One of the most compelling findings in the realm of financial education is to *keep it simple*. Limited cognitive and computational ability leads people to economize on cognition while making decisions (Datta and Mullainathan 2012). In a study of business owners in the Dominican Republic, researchers tested the ben-

efits of simplicity by comparing the benefits of a full-fledged financial education module to those of a module based on simple rules of thumb (Drexler, Fischer, and Schoar 2014). The simpler training yielded significant effects on knowledge and behavior, while the traditional financial education had only limited impact. These results suggest that financial education policy can be designed to highlight key heuristics, especially in poor populations that may have no prior financial training.

Another important psychological aspect of making financial decisions is *saliency*, or relevance. People are more likely to pay attention to financial education if it is specifically targeted to their needs, rather than provided in general terms. In a study of microfinance clients in India, when researchers offered assistance in setting financial goals and individualized financial counseling, they found that both interventions led to significant improvements in savings and budgeting behavior (Carpena and others 2013). In contrast, the study found that financial education without the addition of either goal setting or counseling had no impact on informal or formal savings, opening bank accounts, or purchasing financial products such as insurance.

Utilizing emotional persuasion

People often make important choices based on emotions rather than on careful thought. Economists and psychologists have long studied dual-process decision models in which decision making is essentially a process of negotiation between a “hot” and fast emotional system and a more deliberative and “cool” cognitive system (Metcalf and Mischel 1999), or an interaction between two systems of intuitive and deliberative responses (fast and slow thinking) (Kahneman 2003).

Previous studies clearly show that the internal negotiation process can be influenced by external appeals. The most obvious example comes from the field of advertising, which often relies on emotional appeals to attract customers. Such appeals often resonate more deeply than logical messages. If advertising can be persuasive for commercial reasons, perhaps the power of media can be used to influence welfare-enhancing choices as well. One of the most widespread and influential media for conveying such messages is television.

A psychologically informed understanding of decision making can help policy makers improve the match between intended and actual effects of a financial policy and can help individuals achieve their financial goals.

As discussed in spotlight 2, entertainment programming on television that presents characters with whom the audience can identify has been shown to influence important social outcomes such as fertility and demand for health screenings. A recent study in

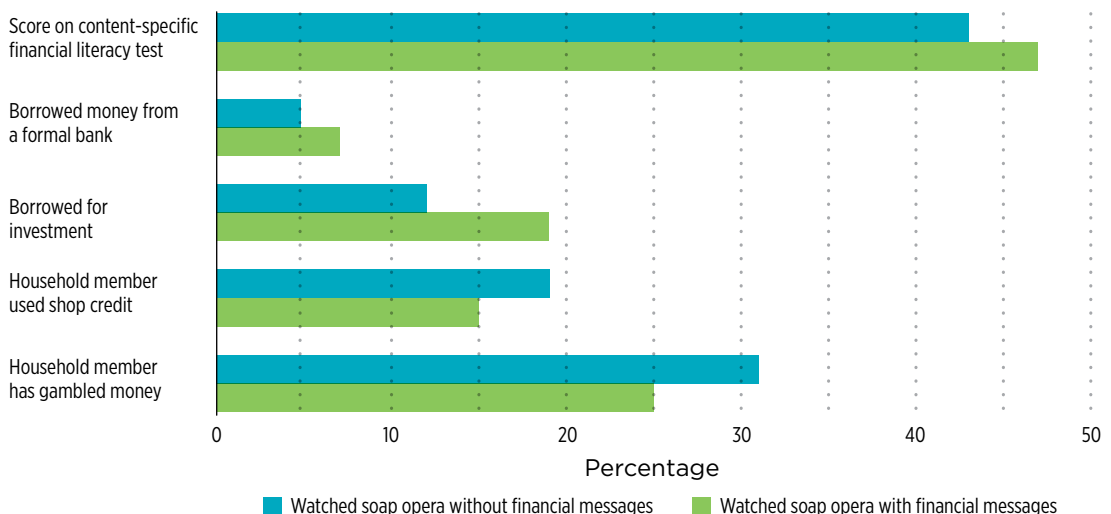
South Africa shows that television programming can be harnessed to improve financial decisions, as well (Berg and Zia 2013). The authors studied the effects of incorporating messages on debt management into a nationally televised and popular soap opera in South Africa and found significant improvements in content-specific financial knowledge, greater likelihood of borrowing formally and for productive purposes, reduction in borrowing through expensive shop credit, and lower propensity to gamble—all messages that were conveyed in the soap opera story line (figure 6.4). The study employed a mixture of quantitative and qualitative analytical tools to identify conformity to the messages delivered by the leading character. The study found that financial messages delivered by a peripheral character were largely ignored. This disparity in results suggests that emotional connections are an important pathway for retention of educational messages and that these connections can be built even in entertainment media aimed at large groups of consumers.

Shaping intertemporal preferences at an early age

Habits and preferences formed in early life tend to stay with people into adulthood and can have profound effects on how they make socioeconomic decisions. A compelling example is a long-term longitudinal experiment conducted in the United States. Young children were invited into a room and offered a marshmallow to

Figure 6.4 Popular media can improve financial decisions

Financial education messages on debt management and gambling were incorporated into the story line of a two-month-long popular soap opera in South Africa. Providing messages in this way led to higher financial literacy and better financial decision making.



Source: Berg and Zia 2013.

eat, but with one catch: if they resisted the temptation to eat the marshmallow right away and instead waited for a few minutes, they would be rewarded with two marshmallows! Some kids resisted and some did not. (One little girl licked the marshmallow and then quickly put it back—literally having her sweet and eating it, too.) The researchers tracked these children into adulthood and found that the children who exhibited more patience and self-control achieved better educational and socioeconomic outcomes (Mischel, Shoda, and Rodriguez 1989). Other research has verified that the ability to control temptation and delay gratification among youth is an important determinant of lifetime academic, economic, and social outcomes (Duckworth and Seligman 2005; Moffitt and others 2011; Golsteyn, Grönqvist, and Lindahl, forthcoming; Sutter and others 2013).⁵

While financial policy and products can be shaped to account for behavioral constraints among adults, a complementary policy goal may be to try to improve such preferences in early life. A number of studies have argued that willpower and self-control resemble a muscle that requires time and resources to replenish and that becomes stronger with repeated practice (Baumeister and Heatherton 1996; Baumeister and others 1998; Muraven and Baumeister 2000; Baumeister, Vohs, and Tice 2007). Indeed, research into developmental psychology and education has shown that cognitive control can be exercised and improved in children through early life interventions in preschool (see chapter 5). Training can improve their learning capacity through such skills as absorbing, recalling, and applying concepts learned in class.

A recent study among high school students in Brazil shows that financial education that offers repeated instruction and opportunities to practice responsible intertemporal choices (such as saving for purchases rather than buying on credit, comparison shopping, negotiating prices, and keeping track of expenses) can have important influences on student financial preferences and outcomes (Bruhn and others 2013). The study, which involved nearly 900 schools and 20,000 high school students, finds significant improvements in student financial knowledge and attitudes, savings rates, and spending behavior and important improvements in intertemporal financial preferences, as measured by indexes of financial autonomy and intention to save.

Conclusion

This chapter presents key insights into the social and behavioral influences on financial decision making. It shows that loss aversion, present bias, cognitive overload, and the social psychology of advice make

financial decision making hard. Policy interventions to address these tendencies include changing default options, using social networks in microfinance, employing nudges and reminders, offering commitment devices, simplifying financial education, and using emotional persuasion. The evidence shows that a psychologically informed understanding of decision making can help financial policy makers improve the match between intended and actual effects of a policy and can help individuals achieve their financial goals.

Notes

1. See http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2013/.
2. For empirical estimates, see Abdellaoui, Bleichrodt, and Paraschiv (2007, table 1).
3. For evidence for the United States, see Ausubel (1991) and Stango and Zinman (2009).
4. See also Shah, Mullainathan, and Shafir (2012).
5. See also the discussion in the section on overweighting the present.

References

- Abdellaoui, Mohammed, Han Bleichrodt, and Corina Paraschiv. 2007. "Loss Aversion under Prospect Theory: A Parameter-Free Measurement." *Management Science* 53 (10): 1659–74.
- Anagol, Santosh, Shawn Cole, and Shayak Sarkar. 2013. "Understanding the Advice of Commissions-Motivated Agents: Evidence from the Indian Life Insurance Market." Working Paper, Wharton School of Business, University of Pennsylvania, Philadelphia.
- Ardener, Shirley, and Sandra Burman. 1996. *Money-Gorounds: The Importance of ROSCAs for Women*. New York: Bloombury.
- Armendáriz, Beatriz, and Jonathan Morduch. 2010. *The Economics of Microfinance*. Cambridge, MA: MIT Press.
- Ashraf, Nava, Dean Karlan, and Wesley Yin. 2006. "Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines." *Quarterly Journal of Economics* 121 (2): 635–72.
- Atkinson, Jesse, Alain de Janvry, Craig McIntosh, and Elisabeth Sadoulet. 2013. "Prompting Microfinance Borrowers to Save: A Field Experiment from Guatemala." *Economic Development and Cultural Change* 62 (1): 21–64.
- Ausubel, Lawrence M. 1991. "The Failure of Competition in the Credit Card Market." *American Economic Review* 81 (1): 50–81.
- Banerjee, Abhijit V., Esther Duflo, Rachel Glennerster, and Cynthia Kinnan. 2013. "The Miracle of Microfinance? Evidence from a Randomized Evaluation." Working Paper 1309, Massachusetts Institute of Technology, Cambridge, MA.
- Banerjee, Abhijit, and Sendhil Mullainathan. 2010. "The Shape of Temptation: Implications for the Economic

- Lives of the Poor.” Working Paper 15973, National Bureau of Economic Research, Cambridge, MA.
- Barber, Brad, and Terrance Odean. 2013. “The Behavior of Individual Investors.” In *Handbook of the Economics of Finance*, edited by Milton Harris, George M. Constantinides, and Rene M. Stulz, vol. 2, part B, 1533–70. Amsterdam: Elsevier.
- Bardolet, David, Craig R. Fox, and Dan Lovallo. 2011. “Corporate Capital Allocation: A Behavioral Perspective.” *Strategic Management Journal* 32 (13): 1465–83.
- Bauer, Michal, Julie Chytilová, and Jonathan Morduch. 2012. “Behavioral Foundations of Microcredit: Experimental and Survey Evidence from Rural India.” *American Economic Review* 102 (2): 1118–39.
- Baumeister, Roy F., Ellen Bratslavsky, Mark Muraven, and Dianne M. Tice. 1998. “Ego Depletion: Is the Active Self a Limited Resource?” *Journal of Personality and Social Psychology* 74 (5): 1252–65.
- Baumeister, Roy F., and Todd F. Heatherton. 1996. “Self-Regulation Failure: An Overview.” *Psychological Inquiry* 7 (1): 1–15.
- Baumeister, Roy F., Kathleen D. Vohs, and Dianne M. Tice. 2007. “The Strength Model of Self-Control.” *Current Directions in Psychological Science* 16 (6): 351–55.
- Benartzi, Shlomo, and Richard Thaler. 1995. “Myopic Loss Aversion and the Equity Premium Puzzle.” *Quarterly Journal of Economics* 110 (1): 73–92.
- . 2013. “Behavioral Economics and the Retirement Savings Crisis.” *Science* 339 (March 8): 1152–53.
- Berg, Gunhild, and Bilal Zia. 2013. “Harnessing Emotional Connections to Improve Financial Decisions: Evaluating the Impact of Financial Education in Mainstream Media.” Policy Research Working Paper 6407, World Bank, Washington, DC.
- Bertrand, Marianne, Dean Karlan, Sendhil Mullainathan, Eldar Shafir, and Jonathan Zinman. 2010. “What’s Advertising Content Worth? Evidence from a Consumer Credit Marketing Field Experiment.” *Quarterly Journal of Economics* 125 (1): 263–306.
- Bertrand, Marianne, and Adair Morse. 2011. “Information Disclosure, Cognitive Biases, and Payday Borrowing.” *Journal of Finance* 66 (6): 1865–93.
- Bertrand, Marianne, Sendhil Mullainathan, and Eldar Shafir. 2004. “A Behavioral-Economics View of Poverty.” *American Economic Review* 94 (2): 419–23.
- Beshears, John, James J. Choi, David Laibson, and Brigitte C. Madrian. 2008. “How Are Preferences Revealed?” *Journal of Public Economics* 92 (8): 1787–94.
- . 2013. “Simplification and Saving.” *Journal of Economic Behavior and Organization* 95: 130–45.
- Bruhn, Miriam, Luciana de Souza Leao, Arianna Legovini, Rogelio Marchetti, and Bilal Zia. 2013. “The Impact of High School Financial Education: Experimental Evidence from Brazil.” Policy Research Working Paper 6723, World Bank, Washington, DC.
- Brune, Lasse, Xavier Giné, Jessica Goldberg, and Dean Yang. 2013. “Commitments to Save: A Field Experiment in Rural Malawi.” Working Paper 5748, World Bank, Washington, DC.
- Caplin, Andrew, and John Leahy. 2003. “Behavioral Policy.” In *The Psychology of Economic Decisions*. Vol. I of *Rationality and Well-Being*, edited by Isabelle Brocas and Juan D. Carrillo, 73–87. New York: Oxford University Press.
- Cardenas, Juan Camilo, and Jeffrey Carpenter. 2013. “Risk Attitudes and Economic Well-Being in Latin America.” *Journal of Development Economics* 103 (July): 52–61.
- Carpene, Frank, Shawn Cole, Jeremy Shapiro, and Bilal Zia. 2013. “The ABC’s of Financial Literacy: Experimental Evidence on Attitudes, Behavior and Cognitive Biases.” Working Paper.
- Cassar, Alessandra, Luke Crowley, and Bruce Wydick. 2007. “The Effect of Social Capital on Group Loan Repayment: Evidence from Field Experiments.” *Economic Journal* 117 (517): F85–F106.
- Choi, James J., David Laibson, and Brigitte C. Madrian. 2009. “Mental Accounting in Portfolio Choice: Evidence from a Flypaper Effect.” *American Economic Review* 99 (5): 2085–95. doi: 10.1257/aer.99.5.2085.
- Collins, Daryl, Jonathan Murdoch, Stuart Rutherford, and Orlanda Ruthven. 2009. *Portfolios of the Poor: How the World’s Poor Live on \$2 a Day*. Princeton, NJ: Princeton University Press.
- Datta, Saugato, and Sendhil Mullainathan. 2012. “Behavioral Design: A New Approach to Development Policy.” Policy Paper 016, Center for Global Development, Washington, DC.
- Donkers, Bas, Carlos Lourenço, Daniel Goldstein, and Benedict Dellaert. 2013. “Building a Distribution Builder: Design Considerations for Financial Investment and Pension Decisions.” Netspar Design Paper 20, Network for Studies on Pensions, Aging, and Retirement, Tilburg University, the Netherlands.
- Drexler, Alejandro, Greg Fischer, and Antoinette Schoar. 2014. “Keeping It Simple: Financial Literacy and Rules of Thumb.” *American Economic Review* 62 (2): 1–31.
- Duckworth, Angela L., and Martin E. P. Seligman. 2005. “Self-Discipline Outdoes IQ in Predicting Academic Performance of Adolescents.” *Psychological Science* 16 (12): 939–44.
- Dupas, Pascaline, and Jonathan Robinson. 2013. “Why Don’t the Poor Save More? Evidence from Health Savings Experiments.” *American Economic Review* 103 (4): 1138–71.
- Engelmann, Jan B., C. Monica Capra, Charles Noussair, and Gregory S. Berns. 2009. “Expert Financial Advice Neurobiologically ‘Offloads’ Financial Decision-Making under Risk.” *PLoS ONE* 4 (3): 4957.
- Faro, David, and Yuval Rottenstreich. 2006. “Affect, Empathy, and Regressive Mispredictions of Others’ Preferences under Risk.” *Management Science* 52 (4): 529–41.
- Fiedler, Klaus. 2007. “Construal Level Theory as an Integrative Framework for Behavioral Decision-Making Research and Consumer Psychology.” *Journal of Consumer Psychology* 17 (2): 101–106.
- Gal, David, and Blakeley B. McShane. 2012. “Can Small Victories Help Win the War? Evidence from Consumer

- Debt Management." *Journal of Marketing Research* 49 (4): 487–501.
- Gigerenzer, Gerd, Wolfgang Gaissmaier, Elke Kurz-Milcke, Lisa M. Schwartz, and Steven Woloshin. 2007. "Helping Doctors and Patients Make Sense of Health Statistics." *Psychological Science in the Public Interest* 8 (2): 53–96.
- Giné, Xavier, Cristina Martinez Cuellar, and Rafael Keenan Mazer. 2014. "Financial (Dis-)Information: Evidence from an Audit Study in Mexico." Policy Research Working Paper 6902, World Bank, Washington, DC.
- . In progress. "Disclosure and Demand Elasticity of Financial Products: Evidence from Mexico." World Bank, Washington, DC.
- Giné, Xavier, Karuna Krishnaswamy, and Alejandro Ponce. 2011. "Strategic Default in Joint Liability Groups: Evidence from a Natural Experiment in India." Unpublished manuscript.
- Gneezy, Uri, and Jan Potters. 1997. "An Experiment on Risk Taking and Evaluation Periods." *Quarterly Journal of Economics* 112 (2): 631–45.
- Goldstein, Daniel G., Eric J. Johnson, and William F. Sharpe. 2008. "Choosing Outcomes versus Choosing Products: Consumer-Focused Retirement Investment Advice." *Journal of Consumer Research* 35 (3): 440–56.
- Golsteyn, Bart H. H., Hans Grönqvist, and Lena Lindahl. Forthcoming. "Adolescent Time Preferences Predict Lifetime Outcomes." *Economic Journal*.
- Gross, David B., and Nicholas Souleles. 2000. "Consumer Response to Changes in Credit Supply: Evidence from Credit Card Data." Unpublished manuscript, University of Chicago and University of Pennsylvania.
- . 2002. "Do Liquidity Constraints and Interest Rates Matter for Consumer Behavior? Evidence from Credit Card Data." *Quarterly Journal of Economics* 117 (1): 149–85.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales. 2013. "The Determinants of Attitudes toward Strategic Default on Mortgages." *Journal of Finance* 68 (4): 1473–1515.
- Guiso, Luigi, and Paolo Sodini. 2013. "Household Finance: An Emerging Field." In *Handbook of the Economics of Finance*, edited by Milton Harris, George M. Constantinides, and Rene M. Stulz, vol. 2, part B, 1349–1532. Amsterdam: Elsevier.
- Hastings, Justine, and Jesse M. Shapiro. 2012. "Mental Accounting and Consumer Choice: Evidence from Commodity Price Shocks." Working Paper 18248, National Bureau of Economic Research, Cambridge, MA.
- Hsee, Christopher K., and Elke U. Weber. 1997. "A Fundamental Prediction Error: Self-Others Discrepancies in Risk Preference." *Journal of Experimental Psychology: General* 126 (1): 45.
- Imai, Katsushi S., and M. D. Shafiul Azam. 2012. "Does Microfinance Reduce Poverty in Bangladesh? New Evidence from Household Panel Data." *Journal of Development Studies* 48 (5): 633–53.
- Ismayilov, Huseyn, and Jan Potters. 2013. "Disclosing Advisor's Interests neither Hurts nor Helps." *Journal of Economic Behavior and Organization* 93 (September): 314–20.
- Johnson, Eric J., Suzanne B. Shu, Benedict G. C. Dellaert, Craig Fox, Daniel G. Goldstein, Gerald Häubl, Richard P. Larrick, John W. Payne, Ellen Peters, and David Schkade. 2012. "Beyond Nudges: Tools of a Choice Architecture." *Marketing Letters* 23 (2): 487–504.
- Kahneman, Daniel. 2003. "A Perspective on Judgment and Choice: Mapping Bounded Rationality." *American Psychologist* 58 (9): 697–720.
- Kahneman, Daniel, and Amos Tversky. 1979. "Prospect Theory: An Analysis of Decision under Risk." *Econometrica* 47 (2): 263–91.
- Karlan, Dean, and Jonathan Morduch. 2010. "Access to Finance." In *Handbook of Development Economics*, edited by Dani Rodrik and Mark Rosenzweig, vol. 5, chap. 71, 4703–84. Amsterdam: Elsevier.
- Karlan, Dean, Melanie Morten, and Jonathan Zinman. 2012. "A Personal Touch: Text Messaging for Loan Repayment." Working Paper 17952, National Bureau of Economic Research, Cambridge, MA.
- Kaufmann, Christine, Martin Weber, and Emily Haisley. 2013. "The Role of Experience Sampling and Graphical Displays on One's Investment Risk Appetite." *Management Science* 59 (2): 323–40.
- Keys, Daniel J., and Barry Schwartz. 2007. "'Leaky' Rationality: How Research on Behavioral Decision Making Challenges Normative Standards of Rationality." *Perspectives on Psychological Science* 2 (2): 162–80.
- Laibson, David. 1997. "Golden Eggs and Hyperbolic Discounting." *Quarterly Journal of Economics* 112 (2): 443–78.
- Liberman, Nira, and Yaacov Trope. 2008. "The Psychology of Transcending the Here and Now." *Science* 322 (5905): 1201–05.
- Madrian, Brigitte C., and Dennis F. Shea. 2001. "The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior." *Quarterly Journal of Economics* 116 (4): 1149–87.
- Meier, Stephan, and Charles Sprenger. 2010. "Present-Biased Preferences and Credit Card Borrowing." *American Economic Journal* 2 (1): 193–210.
- Metcalfe, Janet, and Walter Mischel. 1999. "A Hot/Cool-System Analysis of Delay of Gratification: Dynamics of Willpower." *Psychological Review* 106 (1): 3.
- Mischel, Walter, Yuichi Shoda, and Monica I. Rodriguez. 1989. "Delay of Gratification in Children." *Science* 244 (4907): 933–38.
- Moffitt, Terrie E., Louise Arseneault, Daniel Belsky, Nigel Dickson, Robert J. Hancox, Hona Lee Harrington, Renate Houts, Richie Poulton, Brent W. Roberts, and Stephen Ross. 2011. "A Gradient of Childhood Self-Control Predicts Health, Wealth, and Public Safety." *Proceedings of the National Academy of Sciences* 108 (7): 2693–98.
- Mullainathan, Sendhil, and Eldar Shafir. 2009. "Savings Policy and Decision-Making in Low-Income Households." In *Insufficient Funds: Savings, Assets, Credit, and Banking among Low-Income Households*, edited by Rebecca Blank and Michael Barr, 121–46. New York: Russell Sage Foundation.

- . 2013. *Scarcity: Why Having Too Little Means So Much*. New York: Times Books.
- Muraven, Mark, and Roy F. Baumeister. 2000. "Self-Regulation and Depletion of Limited Resources: Does Self-Control Resemble a Muscle?" *Psychological Bulletin* 126 (2): 247–59.
- O'Donoghue, Ted, and Matthew Rabin. 1999. "Doing It Now or Later." *American Economic Review* 89 (1): 103–124.
- Rabin, Matthew, and Georg Weizsäcker. 2009. "Narrow Bracketing and Dominated Choices." *American Economic Review* 99 (4): 1508–43. doi: 10.1257/aer.99.4.1508.
- Reuben, Ernesto, Paola Sapienza, and Luigi Zingales. 2007. "Procrastination and Impatience." Working Paper 13713, National Bureau of Economic Research, Cambridge, MA.
- Sah, Sunita, and George Loewenstein. 2013. "Nothing to Declare: Mandatory and Voluntary Disclosure Leads Advisors to Avoid Conflicts of Interest." *Psychological Science* 25 (2): 575–84.
- Shah, Anuj K., Sendhil Mullainathan, and Eldar Shafir. 2012. "Some Consequences of Having Too Little." *Science* 338 (6107): 682–85.
- Soman, Dilip, and Hee-Kyung Ahn. 2010. "Framing, Mental Accounting and Individual Welfare." In *Perspectives on Framing*, edited by Gideon Keren, 65–92. Hove, United Kingdom: Psychology Press.
- Soman, Dilip, and Amar Cheema. 2011. "Earmarking and Partitioning: Increasing Saving by Low-Income Households." *Journal of Marketing Research* 48 (Special Issue): S14–S22.
- Sonnemann, Ulrich, Colin F. Camerer, Craig R. Fox, and Thomas Langer. 2013. "How Psychological Framing Affects Economic Market Prices in the Lab and Field." *Proceedings of the National Academy of Sciences* 110 (29): 11779–84.
- Spears, Dean E. 2011. "Economic Decision-Making in Poverty Depletes Behavioral Control." *B. E. Journal of Economic Analysis and Policy* 11 (1). <http://riceinstitute.org/wordpress/wp-content/uploads/downloads/2011/12/depletion-published.pdf>.
- Stango, Victor, and Jonathan Zinman. 2009. "What Do Consumers Really Pay on Their Checking and Credit Card Accounts? Explicit, Implicit, and Avoidable Costs." *American Economic Review* 99 (2): 424–29.
- . 2011. "Fuzzy Math, Disclosure Regulation, and Market Outcomes: Evidence from Truth-in-Lending Reform." *Review of Financial Studies* 24 (2): 506–34.
- Stutzer, Alois, Lorenz Goette, and Michael Zehnder. 2011. "Active Decisions and Prosocial Behaviour: A Field Experiment on Blood Donation." *Economic Journal* 121 (556): F476–F93.
- Sutter, Matthias, Martin Kocher, Daniela Rützler, and Stefan Trautmann. 2013. "Impatience and Uncertainty: Experimental Decisions Predict Adolescents' Field Behavior." *American Economic Review* 103 (1): 510–31.
- Thaler, Richard H. 1990. "Anomalies: Saving, Fungibility, and Mental Accounts." *Journal of Economic Perspectives* 4 (1): 193–205.
- Thaler, Richard H., and Shlomo Benartzi. 2004. "Save More Tomorrow™: Using Behavioral Economics to Increase Employee Saving." *Journal of Political Economy* 112 (S1): S164–S87.
- Thaler, Richard H., Amos Tversky, Daniel Kahneman, and Alan Schwartz. 1997. "The Effect of Myopia and Loss Aversion on Risk Taking: An Experimental Test." *Quarterly Journal of Economics* 112 (2): 647–61.
- Trautmann, Stefan T., and Razvan Vlahu. 2013. "Strategic Loan Defaults and Coordination: An Experimental Analysis." *Journal of Banking and Finance* 37 (3): 747–60.
- Trope, Yaacov, and Nira Liberman. 2003. "Temporal Construal." *Psychological Review* 110 (3): 403–21.
- Trope, Yaacov, Nira Liberman, and Cheryl Wakslak. 2007. "Construal Levels and Psychological Distance: Effects on Representation, Prediction, Evaluation, and Behavior." *Journal of Consumer Psychology* 17 (2): 83–95.
- Tversky, Amos, and Eldar Shafir. 1992. "Choice under Conflict: The Dynamics of Deferred Decision." *Psychological Science* 3 (6): 358–61.
- Wakker, Peter P. 2010. *Prospect Theory: For Risk and Ambiguity*. Cambridge, U.K.: Cambridge University Press.
- World Bank. 2008. *Finance for All? Policies and Pitfalls in Expanding Access*. Policy Research Report. Washington, DC: World Bank.
- Zelizer, Viviana A. 2010. *Economic Lives: How Culture Shapes the Economy*. Princeton, NJ: Princeton University Press.

