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An Opt-Out Home Mortgage System

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DISCUSSION PAPER 2008-14

SEPTEMBER 2008

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An Opt-Out Home Mortgage System

The Hamilton Project seeks to advance America's promise of opportunity, prosperity, and growth. The Project's economic strategy reflects a judgment that long-term prosperity is best achieved by making economic growth broad-based, by enhancing individual economic security, and by embracing a role for effective government in making needed public investments. Our strategy—strikingly different from the theories driving economic policy in recent years—calls for fiscal discipline and for increased public investment in key growth-enhancing areas. The Project will put forward innovative policy ideas from leading economic thinkers throughout the United States—ideas based on experience and evidence, not ideology and doctrine—to introduce new, sometimes controversial, policy options into the national debate with the goal of improving our country's economic policy.

The Project is named after Alexander Hamilton, the nation's first treasury secretary, who laid the foundation for the modern American economy. Consistent with the guiding principles of the Project, Hamilton stood for sound fiscal policy, believed that broad-based opportunity for advancement would drive American economic growth, and recognized that "prudent aids and encouragements on the part of government" are necessary to enhance and guide market forces.





Advancing Opportunity,
Prosperity and Growth

An Opt-Out Home Mortgage System

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NOTE: This discussion paper is a proposal from the authors. As emphasized in The Hamilton Project's original strategy paper, the Project was designed in part to provide a forum for leading thinkers across the nation to put forward innovative and potentially important economic policy ideas that share the Project's broad goals of promoting economic growth, broad-based participation in growth, and economic security. The authors are invited to express their own ideas in discussion papers, whether or not the Project's staff or advisory council agrees with the specific proposals. This discussion paper is offered in that spirit.

THE BROOKINGS INSTITUTION

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Abstract

The current housing and financial crisis has led to significant congressional and executive action to manage the crisis and stem the harms from it, but the fundamental problems that caused the crisis remain largely unaddressed. The central features of the industrial organization of the mortgage market with its misaligned incentives, and the core psychological and behavioral phenomena that drive household financial decisionmaking remain. While the causes of the mortgage meltdown are myriad and the solutions likely to be multifaceted, a central problem that led to the crisis was that brokers and lenders offered loans that looked much less expensive and much less risky than they really were—and borrowers took them. It is time for common-sense reform to the mortgage market. This paper develops a new framework for understanding the mortgage markets as the interaction between individuals with specific psychological biases and firms that respond to those psychologies within specific markets. We argue that regulation needs to take account of that interaction. Our new framework leads us to propose a *sticky opt-out mortgage system*, under which lenders would be required to offer borrowers loans with standard terms. Borrowers could opt out for other loans, but only after heightened disclosure requirements, and lenders would face increased exposure to liability or other sanctions.

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1. Introduction

The housing crisis that we face today, driven by serious problems in the subprime and alternative home mortgage-lending markets—problems now spreading to the prime mortgage market and beyond—suggests that our system of home mortgage regulation is seriously deficient and must be reformed. Many market-based systems designed to ensure sound practices in this sector, such as broker reputational risk, lender oversight of brokers, investor oversight of lenders, rating agency oversight of securitizations, and so on, simply did not work. Conflicts of interest, inadequate capital rules, lax regulation of key players, and boom times covered up the abuses—at least for a while, at least for those not directly affected. But no more.

We argue that we should take this opportunity to implement common-sense reforms to the mortgage market, to reduce the likelihood that such a crisis will occur again. Some change is already occurring. Market participants have been adjusting their policies. The Federal Reserve and the administration have pursued monetary and fiscal levers and have taken unprecedented steps to take over, bail out, or shore up private financial institutions. The FDIC has led the way with innovative reforms in banking supervisory policies, and the Federal Reserve has recently revamped its disclosure rules. Congress has passed important legislation to help provide another option for the refinancing of defaulting mortgages and to help communities with the fallout.

But the fundamental problems that caused this crisis remain largely unaddressed by these measures, which are largely focused on containing the current crisis. The central features of the industrial organization of the mortgage market with its misaligned incentives, the core psychological biases that drive household decisionmaking, and the constrained regulatory choice set available to policymakers all remain. While the causes of the mortgage crisis are myriad and the solutions to the crisis likely to be

multifaceted, a central problem that led to the crisis was that brokers and lenders offered loans that looked much less expensive and much less risky than they really were, in part because of low initial monthly payments and hidden costly features. As our friend Ned Gramlich once put it, “Why are the most risky loan products sold to the least sophisticated borrowers?” (Gramlich 2007, p. 11). And homeowners took those loans, with grave personal and national consequences.

Choosing a mortgage is one of the largest financial decisions an American consumer will make, yet it can be a complicated one, especially today, with mortgages that vary in dimensions and unique features. This complexity has raised regulatory issues. Should some features be regulated? Should product disclosure be regulated? And most basic of all, is there a rationale for regulation or will the market solve the current crisis and provide the basis for sound lending in the future? Current regulation of home mortgages is largely stuck in two competing models—disclosure, and usury or product restrictions. The current crisis suggests that a different approach might be warranted. This paper uses insights from both psychology and economics to construct a framework for understanding both models and to suggest a fundamentally new perspective.

In response to the complexity of our financial system, there has been a long-running debate about the appropriate role and form of consumer regulation, largely revolving around two poles of thought: one focused on disclosure, the other on product restrictions. Disclosure regulation, embodied in the Truth in Lending Act (TILA), presumes one market failure: the market will fail to produce a clear and comparable disclosure of essential product information needed by consumers. TILA potentially responds to two concerns. First, firms will not reveal all information that borrowers should understand and analyze to make determinations regarding taking

out a loan. Second, firms will not reveal information in a way to facilitate comparability across products. The first concern speaks to consumer knowledge, solving the problem of inadequate information disclosure through the required provision of information; the second concern addresses consumers' ability to process the information, solving the problem of lack of comparability through coordination of terms and definitions.

Though it presumes one form of market failure—the lack of comparable and full disclosure—*homo economicus* is very much the intellectual basis for disclosure regulation: the model relies on fully rational agents who make intelligent choices. But empirical research on behavior, grounded in advances in psychology, suggests that these neoclassical assumptions are misplaced and in many contexts consequential. In particular, the availability of data does not always lead to communication and knowledge, understanding and intention do not necessarily lead to action, and contextual nuances can lead to poor choices. Individuals consistently make choices that, they themselves agree, diminish their own well-being in significant ways.

In contrast to disclosure regulation, usury laws and product restrictions start from the idea that certain prices or products are inherently unreasonable and that consumers need to be protected from making bad choices. Product regulation may diminish, in some contexts, access to credit or may reduce innovation of financial products, however. Moreover, for certain types of individuals some limitations may themselves increase consumer confusion regarding what rules apply to which products, and what products may prove beneficial or harmful. In addition, firms will likely develop ways around such product restrictions, undermining their core intention, increasing costs, and confusing consumers.

We explore a different approach, one based on insights from behavioral economics on the one hand and an understanding of industrial organization on the other. At the core of our analysis is the interaction between individual psychology and market

competition. This view is in contrast to the classic model, which relies on the interaction between rational choice and market competition. Because rational agents choose well, firms compete to provide products that improve welfare. Because rational agents process information well, firms compete to provide information that improves decision quality. By contrast, in our model individuals depart from neoclassical assumptions in predictable ways. The introduction of richer psychology complicates the impact of competition: firms compete based on how actual individuals will respond to products in the marketplace, and actual competitive outcomes may not always and in all contexts closely align with increasing consumer welfare.

In the home mortgage market, the standard model assumes that people evaluate options well and that the more options people have, the better. Firms will thus provide more options, people will pick the best among them, and healthy competition will drive out bad options. In reality, people are easily overwhelmed by too many options and make mistakes, often in predictable ways. Borrowers, for example, might pick the most salient dimension (lowest monthly cost) rather than focusing on the long-term cost of credit—or on the fact that taxes and insurance will not be escrowed and are not included in the monthly cost. Consequently, firms can and will introduce options that cater to these behaviors, and people will pick options that carry a greater likelihood of failure than anticipated, and which they themselves would find suboptimal on further reflection and analysis. These behavioral considerations suggest that disclosure of information alone will often be insufficient to provide consumers with what is needed to optimize their understanding, decisionmaking, and the resulting outcomes.

Our work is clearly related to the emerging literature on behaviorally informed policymaking. This literature produces novel considerations in the design and implementation of regulation, including features such as the framing of information, the setting of defaults or “opt-out” rules, the provision of warnings, and other strategies to alter individual be-

havior.¹ In this paper, we embed this thinking more deeply in the logic of markets. Specifically, we adopt a framework that takes into account firm incentives to respond to behaviorally motivated regulation. We envision outcomes as an equilibrium interaction between individuals with specific psychologies and firms that respond to those psychologies within specific market contexts. To the extent that the interactions produce outcomes that are not socially optimal and produce real harms, regulation could be devised to address failures in this equilibrium.

This perspective reveals two dimensions to consider. First, the psychological biases of individuals can either help or hurt the firms with which they interact; hence firms' and a publicly minded regulator's interests are sometimes aligned and sometimes not. Let us take the example of a consumer who does not understand the profound effects of the compounding of interest. Such a bias would lead the individual both to undersave and to overborrow. Society would prefer that the individual did not have such a bias in both contexts. Firms, however, would prefer that the individual not have the bias to undersave so that funds available for investment and fee generation would not diminish (abstracting from fee structures). Under common real-world conditions, however, firms would be perfectly content to see the same individual overborrow (abstracting from collection costs). Because people are fallible and easily misled, transparency does not always pay off and firms sometimes have strong incentives to exacerbate psychological biases (see, e.g., Gabaix and Laibson 2006). Regulation in this case faces a much more difficult challenge than in the savings situation. The market response to individual failure can profoundly affect regulation. In attempting to boost participation in 401(k) retirement plans, the regula-

tor generally faces at worst indifferent and at best positively inclined employers seeking to boost employee retention and to comply with federal pension rules.² In forcing disclosure of hidden prices of credit, by contrast, the regulator often faces noncooperative firms whose interests are to find ways to work around or to undo interventions.

A second implication of our equilibrium model of firms in particular markets interacting with individuals with specific psychologies is that the mode of regulation chosen should take account of this interaction. To explore this interaction, one might think of the regulator as holding two different types of levers: (1) changing the rules of the game, and (2) changing the scoring.³ When forcing disclosure of the APR, for example, the regulator effectively changes one kind of rule of the game—what a firm must say. A stronger form of rule change is product regulation: changing what a firm must do. Behavioral rule changes, such as creating a favored starting position or default, falls between these two types of rule changes (disclosure and product regulation). A default seeks to change what a firm does or says by changing the starting position for the interaction between firms and individuals. Conversely, when changing liability or providing tax incentives, the regulator changes the way the game is scored. Typically, changing the rules of the game (without changing the scoring, as through liability changes) maintains the firms' original incentives to help or hurt consumers based on their biases, channeling the incentive into different behaviors by firms or individuals, whereas changing the scoring of the game can alter those incentives.

This perspective highlights the care that must be taken when transferring the insights of prominent

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1. These strategies have been called variously asymmetric paternalism, libertarian paternalism, and debiasing through law. See, e.g., Camerer, Issacharoff, Loewenstein, O'Donoghue, and Rabin (2003), Thaler and Sunstein (2008), and Jolls and Sunstein (2005).
 2. We recognize that there are significant compliance issues regarding pensions and retirement plans, disclosure failures, fee churning, and complicated and costly fee structures, conflicts of interest in plan management, as well as problems with encouraging employers to sign up low-wage workers for retirement plans. We do not mean to suggest that these failings are trivial—far from it. We only mean to suggest that, as a comparative matter, market incentives to overcome psychological biases in order to encourage saving are more aligned with optimal social policy than with market incentives to exacerbate psychological biases to encourage borrowing.
 3. We use this bimodal framework of regulatory choice to simplify the exploration of how our model of individual psychology and firm incentives affects regulation. We acknowledge that the regulatory choice matrix is more complex (see Barr 2005b).

behavioral regulatory successes, such as defaults in 401(k) participation, to other domains that might differ in nuanced but policy-relevant ways. In contrast to classical analyses, which impute substantial planning and control to individuals, numerous studies of savings among middle-class households have shown that savings works best as a default. Madrian and Shea (2001), for example, studied several plans that changed the default so that employees who fail to take action are automatically enrolled into the retirement savings plan. They consistently found that saving for retirement increased dramatically as the default was changed to automatic enrollment. In a similar vein, Thaler and Benartzi (2004) document increased savings as a result of agreeing to default deductions from future raises.

According to the present analysis, changing the rules on retirement saving (by introducing defaults) works well because employers' incentives align (or do not misalign) with regulatory efforts to guide individual choice. In other words, under current conditions employers are either unaffected or may even be hurt by individuals' propensity to undersave in 401(k) plans.⁴ They thus will not lean against an attempt to fix that problem (undersaving). In other applications, such as where firms' incentives misalign with regulatory intent, changing the rules alone may not work well since firms may have the ability to work creatively around those rule changes and seek to exploit individual biases in new ways. In such circumstances, liability rules may need to be altered as well. Interestingly, such circumstances may lead to regulations that, though deeply motivated by behavioral insights, are not themselves particularly psychological in nature.

In the next section, we discuss disclosure and product regulation, which are the two dominant models of consumer protection in credit markets. We then explore behavioral insights that suggest the fragility

of relying on the rational actor model to develop policy and discuss the realities of industrial organization of the home mortgage market that constrain policymakers. In that discussion, we develop our equilibrium model of human behavior and market reaction and analyze the implications of that model for regulatory choice. Finally, we introduce our alternative: behaviorally informed home mortgage regulation. We then illustrate this approach with a proposal for a sticky opt-out home mortgage system.

In brief, under our proposal lenders would be required to offer eligible borrowers a standard mortgage (or set of mortgages) such as a fixed-rate self-amortizing thirty-year mortgage according to reasonable underwriting standards. Lenders would be free to charge whatever interest rate they wanted on the loan, and, subject to the constraints outlined below, could offer whatever other loan products they wanted to offer. Borrowers would receive the standard mortgages offered unless they chose to opt out in favor of another option, after the lender's honest and comprehensible disclosures about the risks of the alternative mortgages. An opt-out mortgage system would mean borrowers would be more likely to receive straightforward loans they could understand.

But an opt-out policy on its own is likely to be inadequate because firms often have an incentive to hide the true costs of borrowing. Given the strong market pressures to deviate from the default offer, we would need to require more than a simple opt out to make the default sticky enough to make a difference in outcomes. Thus, we propose that deviation from the offer would require heightened disclosures and additional legal exposure for lenders in order to make the default sticky. Lenders would have stronger incentives to provide meaningful disclosures to those whom they convince to opt out because they

4. This negative effect on employers when workers undersave largely occurs because of the existing regulatory framework: pension regulation gives employers incentives to enroll lower-income individuals in 401(k) programs. Absent this, it is likely that firms would be happy to discourage enrollment since they often must pay the match for these individuals. This point is interesting because it suggests that even defaults in savings only work because some other regulation changed the scoring of the game.

would face heightened regulatory scrutiny, as well as increased costs if the loans did not work out (that is, if the borrower defaults on the loan).

Let us also say up front: the problem we identify regarding lender incentives to take advantage of consumer biases is not a specific function of the historical period leading up to the current crisis. Rather, it is a pervasive problem requiring a long-run solution. In the current crisis, the perverse incentive we identify for firms to induce overborrowing seems obvious, at least in retrospect, because loan securitizations often left originators with no credit risk. Going forward, the market will likely correct this incentive problem and ensure originators are left with credit risk. Even if such corrections occur, we outline below two reasons for further regulation. First, financial innovation is pervasive and future innovations may generate different kinds of incentive misalignment. Market generated incentive alignment is a particularly thin reed to build

a regulatory framework upon, particularly when, as we show, plausible regulatory alternatives exist that provide a safety net when incentives are not perfectly aligned. Second, while the popular focus has been on defaults, they are not the only measure of bad outcomes for borrowers, or for society. Incentive alignment only guarantees that lenders internalize the cost of defaults. Nothing prevents the market from offering products in which households overborrow.⁵ For example, a household struggling to make ends meet with excessive debt, but making it, may suffer hidden costs of borrowing—such as foregoing retirement or college savings—will not be internalized by lenders. Moreover, a borrower over-indebted on her mortgage might default on her credit card debt, imposing costs on other lenders rather than on the mortgage originator. Thus, our proposal continues to be relevant even if the market has learned its lessons from the recent crisis.

5. The key here is the possibility that consumers can make bad choices. In a rational model, consumers would not overborrow in a way that hurts them. In a behavioral model, they can, and regulation (such as what we propose) may be needed to prevent such mistakes if they are pervasive and serious enough, and cause widespread harm.

2. The Existing Structure of Home Mortgage Credit Market Regulation

Existing home mortgage regulation generally encompasses disclosure regulation and product regulation models. Both models overlook the interaction between individual psychology and market structure.

Consumer-Oriented Disclosure Regimes

Consumer-oriented disclosures are designed to improve consumers' ability to shop for products and services. The theory is that information in credit markets is imperfect, firms lack sufficient incentives to coordinate to reveal comparable information, and disclosures lower the cost of acquiring more information. More information, if comparable, should help consumers negotiate better. This in turn leads to more competition and a more efficient market. TILA embodies this approach. Under TILA, creditors must reveal in a conspicuous and clear manner the APR and other key costs of credit.

Two essential problems emerge with consumer-oriented disclosure regimes such as TILA. First, behavioral research teaches the pitfalls of relying on consumer understanding to influence consumer behavior; second, many transactions in the financial marketplace involve both complicated legal rules and complicated product structures that even financially sophisticated parties do not fully understand. Empirical evidence suggests that consumers have a hard time understanding credit disclosures, and research in behavioral economics confirms that often consumers do not act on available information (see, for example, Kling, Mullainathan, Shafir,

Vermeulen and Wrobel 2008). If consumers are unlikely to understand a financial transaction and in many cases are unlikely to behave fully rationally even in the face of disclosed information, then relying on disclosure alone to address information asymmetries may be an ineffectual response. Still, disclosure might be improved based on behavioral research (e.g., Camerer et al. 2003, pp. 1211, 1230–37; Jolls, Sunstein, and Thaler 1998).

TILA requires disclosures to consumers regarding the cost of loans.⁶ This type of disclosure seeks to remedy asymmetric information and improve market competition and efficiency through price disclosure, which would make it easier to comparison shop.⁷ TILA disclosure most likely improves transparency and thus efficiency in the market, even if not all consumers understand the disclosures (Schwartz and Wilde 1979, p. 630). Yet we should be concerned not only with an efficient market in the aggregate, but also with efficiency within markets serving low- and moderate-income households and with the consequences of inadequate disclosures for affected consumers. Although TILA facilitates consumer comparison shopping, in some cases too much information is given to consumers and in other cases too little. Even outside the subprime market, there is little reason to think that consumers understand most aspects of mortgage transactions.⁸ Decision research suggests a need for simplicity: individuals faced with complex problems often simplify them to one or two basic decisions (e.g., Baron 2000, pp. 43–68; Hogarth 1980, pp. 4–6; Plous 1993, pp. 107–88). The need for simplicity conflicts, however, with

6. See, for example, 12 C.F.R. pt. 226.17 (2001).

7. See 15 U.S.C. § 1601 (2000), which states “The Congress finds that . . . competition among the various financial institutions and other firms engaged in the extension of consumer credit would be strengthened through informed use of credit. [Furthermore, i]t is the purpose of this subchapter to assure a meaningful disclosure of credit terms so that the consumer will be able to compare more readily the various credit terms available to him.” See also Engel and McCoy (2002, pp. 1255, 1280–81), who describe opportunities that information asymmetries provide for predatory lenders and brokers. See also Schwartz and Wilde (1979, pp. 630, 635).

8. Board of Governors of the Federal Reserve System and the Department of Housing and Urban Development (1998), which notes consumers' difficulties in understanding mortgage terms with or without disclosure.

the goal of producing comprehensive disclosures that permit consumers to comparison shop based on the real price of multiattribute loans.

In addition, borrowers may trust mortgage brokers to give them full and accurate information and to offer them the best loan product. Yet it is in the broker's interest to offer the borrower the highest-rate loan that the broker can convince the borrower to accept. Brokers earn higher-yield spread premiums for placing borrowers into more-expensive loans even if the borrower qualifies for a lower-cost alternative. Even in competitive retail consumer markets for simple products, price dispersion can persist (Carlton and Perloff 2000, pp. 437–41). In home mortgage transactions, borrower understanding of complicated terms is likely to be much lower, so price dispersion is likely to be higher, than in markets for simple products. Transactions for home mortgages present an even greater possibility for price differentials based on race, sophistication, ability to shop for better terms, or other factors (Jackson and Burlingame 2007, p. 63).⁹ Moreover, with credit scoring, creditors know whether borrowers qualify for less-expensive loans under the lenders' pricing schedules, but most borrowers do not realize that they so qualify.¹⁰

Unfortunately, TILA is extraordinarily complex.¹¹ The efficacy of disclosures is diminished by inadequacies in the nature and timing of disclosures, their limited effect on consumer behavior, and consumers' cognitive, emotional, and behavioral limitations (Eskridge 1984, pp. 1128–30). In fact, TILA disclosures may not actually be noticed, read, or understood (Renuart 2003, pp. 421, 432), and may inundate the consumer with too much information to process (Eskridge, pp. 1133–35; Landers and Rohner 1979, pp. 722–25). Moreover, low-income and minority buyers are the least likely to shop

for alternative financing arrangements. As a result, these problems regarding the efficacy of disclosure are likely exacerbated in the subprime market (e.g., Hogarth and Lee 2000).

TILA plays an important role in improving credit markets, and reforms would most likely contribute to improvements in credit markets. The current structure of the home mortgage market, however—at least for those borrowing from subprime lenders—suggests that disclosure will not be enough. In addition, financial education can play a role in helping consumers understand disclosures better, but expenditures for financial education lead to strong externalities. As a result, it is quite difficult to induce private market participants to offer financial education to the borrowing public at anything close to the scale it would take to make a difference. Furthermore, most empirical research on financial education concludes that its effect on real outcomes is typically quite modest (Caskey 2006). This may be caused at least in part by a behavioral tension, pitting intention against action, which we discuss below in the section on psychology and industrial organization.

Product Regulation

Alongside disclosure, governments historically have delineated the terms and conditions of some financial service products. Usury laws are the most common form of such restrictions. In economic terms, one might argue in favor of usury laws to block the granting of credit at high interest rates because the implied default rates would pose unacceptable social externalities. The concern with usury laws is that they often result in credit constraints on poor (or even middle-income) households that could otherwise afford and benefit from credit. Usury laws may also drive lending underground to loan

9. Ayres (2001, pp. 19–44) has documented similar price discrimination in automobile sales and other markets.

10. Credit reports and credit scores are now available to borrowers on request. See Fair and Accurate Credit Transactions Act of 2003, Pub. L. 108-159, §§ 211–12, 117 Stat. 1952, (2003): 1968–69, codified as amended at 15 U.S.C. (2003), § 1681.

11. See, for example, *Emery v. Am. Gen. Fin., Inc.*, 71 F.3d 1343, 1346 (7th Cir. 1995), which describes the ineffectiveness of TILA in conveying relevant information and concludes, “so much for the Truth in Lending Act as a protection for borrowers.” See also Durkin (2002, pp. 201, 208, and Table 9), which found that 75 percent of respondents agreed either somewhat or strongly that TILA credit card disclosures are complicated.

sharks, precluding the possibility of effective consumer protection regulation.

Another type of product regulation excludes certain types of loan terms or sales practices. Such restrictions often have two intertwined motivations. On the one hand, restrictions on loan terms can enhance price disclosure and competition by focusing borrowers and creditors on the price of credit rather than on other features of the loan that consumers may ill understand. On the other hand, product restrictions may be thought of as a substantive judgment that certain loan terms are inherently unreasonable. In either event, product restrictions are based on the notion that consumers cannot fully understand or act in their own best interests in the face of confusing terms or transactions, or of deceptive sales practices to promote these unreasonable terms. Moreover, in this view competition alone is insufficient to drive out such practices.

For example, Congress enacted the Home Ownership Equity Protection Act (HOEPA) in 1994 to respond to unscrupulous lending practices in the subprime home equity mortgage market.¹² For some high-cost loans, HOEPA imposes restrictions on certain contract provisions, requires enhanced disclosures, and enhances remedies for violations. In addition to product regulation, HOEPA requires, directly and indirectly, enhanced disclosures for borrowers facing high-cost loans. Directly, HOEPA enhances disclosure by requiring creditors to disclose mortgage terms three days before closing. Indirectly, HOEPA product restrictions ought to drive more of the cost of the loan into the APR because lenders cannot use the prohibited mortgage terms to cover costs. With more of the cost of the mortgage reflected in the APR, it should be easier for consumers to understand the costs of the

loan and to comparison shop effectively. Creditors would then tend to compete more on price and less on other factors, factors that consumers have difficulty evaluating. Product regulation could then, under some circumstances, enhance the effectiveness of disclosure regimes.

HOEPA, however, is decidedly underinclusive: it is designed to curb abusive practices at the fringe of lending rather than to overcome broader failures. Moreover, as a practical matter HOEPA's record has been mixed at best (e.g., HUD-Treasury 2000). In response, in June 2000 a HUD-Treasury report proposed a four-part approach to curbing predatory lending (Barr 2005a; HUD-Treasury). Quite recently, the Federal Reserve Board unveiled major changes to its HOEPA and TILA rules.¹³ Many other improvements to abusive practice regulation are desirable and may now be forthcoming given the fallout from the subprime mortgage-lending crisis. Congress is currently considering antipredatory lending legislation.¹⁴

In addition to the federal regulatory landscape, many states have passed new antipredatory lending laws or have enhanced existing laws (Bostic, Engel, McCoy, Pennington-Cross, and Wachter 2007; Ho and Pennington-Cross 2006; Li and Ernst 2006). Many of these laws are modeled on the federal HOEPA legislation but increase coverage, enhance restrictions, or bolster enforcement (Bostic et al. 2007). A vigorous debate exists about whether these state laws diminish access to credit and harm consumers, or whether these laws diminish access to credit that ought not to be provided, and thus increase consumer welfare. Bostic and his colleagues find that the broader coverage of these laws tends to increase subprime origination but that increased restrictions and enforcement tend to diminish such

12. Home Ownership and Equity Protection Act of 1994, Pub. L. 103-325, § 151, 108 Stat. 2190 (1994); codified at 15 U.S.C. (2000), § 1601.

13. See Federal Reserve Board, Final Rule Amending Regulation Z, 12 CFR Part 226 (July 14, 2008); "Summary of Findings: Consumer Testing of Mortgage Broker Disclosures," submitted to the Board of Governors of the Federal Reserve System, July 10, 2008; Federal Reserve Board, "Proposed Rule Amending Regulation Z," 12 CFR Part 226 (June 14, 2007), Federal Register 72, No. 114: 32948; "Design and Testing of Effective Truth in Lending Disclosures," submitted to the Board of Governors of the Federal Reserve System (May 16, 2007).

14. See, for example, Mortgage Reform and Anti-Predatory Lending Act of 2007, H.R. 3915, 110th Cong., 1st sess.

originations. The empirical debate about the scope and effectiveness of these provisions is likely to continue.

In principle, overly prescriptive product regulations can diminish financial access and harm product competition and innovation that might serve low-income households. Governments may easily err by restricting products that would be advantageous or by creating consumer confusion through complicated rules regarding product regulation. Financial markets change rapidly and firms can easily

innovate in ways that are not anticipated by government regulators. Such innovations could serve consumers better than do government-imposed product regulations. Conversely, such innovations could help firms evade government regulations to the detriment of consumers. It is difficult to know in advance how market innovations will interrelate with product regulations, but for many reasons government regulators may not be able to keep up with these changes. The trade-offs inherent in product regulation should be considered, as should alternative forms of regulation.

3. Psychology and Industrial Organization

With the background on home mortgage regulation established, we turn next to the particular dynamic between individual behavior and industrial organization in that market. Recent behavioral research promises to enrich our understanding of the tensions outlined above by providing a more-nuanced and faithful rendition of the psychological and organizational facts that characterize people’s relevant behaviors. We first consider some of the major behavioral insights. We then briefly discuss the promise of behavioral regulation and the limitations of behavioral regulation that does not take account of market structure. Next, we turn to the industrial organization of the mortgage market as it relates to behavioral patterns. We develop a model of the interaction between individual psychology and industrial organization and illustrate how it should affect regulatory choice.

A Deeper Look at Insights from Behavioral Research

How firms will respond to regulation is bound to depend on people’s perceptions and behaviors to which firms respond in their marketing and in the products and services they offer. Understanding people’s behaviors promises to give a clearer picture of the contour of market forces and of the problems regulation is attempting to solve.

Behavioral research paints a quite different picture of the average citizen from the picture typically envisioned in economic policy circles, with significant implications for policy design and implementation. The classical, rational agent model assumes actors with well-ordered preferences and calibrated judgments who are well informed, maximize their self-interested well-being via tangible rewards, and make coherent and insightful plans, which they pursue with efficiency and self-control. In contrast, behavioral research finds people are quite differ-

ent: their preferences are malleable, their judgment prone to predictable heuristics and biases, their interests often neither selfish nor material, and their plans and behaviors often more context dependent than planned and calculating. What is notable about the emerging behavioral picture is that it paints people as not merely confused and error prone, but also as driven by tendencies that are systematic and predictable yet profoundly different from those typically envisioned by the rational model. A better understanding of such tendencies, appropriately applied, promises to yield policies that are more successful. In the words of John Maurice Clark almost a hundred years ago, “The economist [policy analyst] may attempt to ignore psychology, but it is sheer impossibility for him to ignore human nature. . . . If the economist [policy analyst] borrows his conception of man from the psychologist, his constructive work may have some chance of remaining purely economic in character. But if he does not, he will not thereby avoid psychology. Rather, he will force himself to make his own, and it will be bad psychology” (Clark 1918).

Consider, for example, such central notions as decisional conflict, information, learning, and planning. Each plays an important role in behavior but deviates in important ways from what is typically assumed by the normative account. Understanding these notions and how individual actions can differ from what is typically assumed is necessary in order to craft effective policy. In what follows, we address these notions in subsections that focus on decisional conflict, the role of contextual factors, knowledge, and attention, and what social psychologists call “channel factors.”

Decisional Conflict

People’s preferences are typically constructed, not merely revealed, during the decisionmaking process; the construction of preferences is influenced by the nature and the context of decision, with im-

portant implications. Consider, for example, the role of decisional conflict. Because preferences need to be constructed, choices can be hard to make. People often look for a good reason, a compelling rationale, for choosing one option over another. At times, compelling rationales are easy to find and articulate; at other times, no easy rationale presents itself, which can make the conflict between options hard to resolve. Decisional conflict can prove aversive and can lead people to postpone decisions or to opt for a default option, generating preference patterns that are fundamentally different from those predicted by classical accounts based on value maximization.

According to the classical analysis, each option is assigned a subjective value or utility and the decisionmaker chooses the option assigned the highest utility. Such analysis does not anticipate decisional conflict and assumes that having more alternatives is a good thing since the more options there are, the more likely the consumer is to find one that satisfies her utility function.

Instead, a proliferation of alternatives can dissuade consumers from making the most favorable choice. As choice becomes more difficult, decisions are deferred, often indefinitely (Iyengar and Lepper 2000; Shafir, Simonson, and Tversky 1993; Tversky and Shafir 1992). This has been documented in decisions ranging from choosing jams in upscale grocery stores (Iyengar and Lepper 2000) to applying for a loan equal to roughly one-third of the applicant's income (Bertrand, Karlan, Mullainathan, Shafir, and Zinman 2007) to participating in retirement savings plans, which drops as the number of fund options offered increases (Iyengar, Huberman, and Jiang 2004). Furthermore, the tendency to refrain from making a choice gives an uncanny advantage to the default, or the perceived status quo. This has been observed in several naturally occurring experiments. For example, New Jersey and Pennsylvania both introduced the option of a limited right to sue in the context of insurance decisions, entitling automobile drivers to lower insurance rates. The two states differed in what was offered as the default op-

tion: New Jersey motorists needed to acquire the full right to sue (transaction costs were minimal: a signature), whereas Pennsylvania motorists had the full right to sue as the default, which could be forfeited in favor of the limited alternative. Only about 20 percent of New Jersey drivers chose to acquire the full right to sue, whereas approximately 75 percent of Pennsylvania drivers chose to retain it, which had substantial financial repercussions (Johnson, Hershey, Meszaros, and Kunreuther 1993). A second naturally occurring experiment was recently observed in Europeans' decisions with regard to membership in organ donor pools (Johnson and Goldstein 2003). In opt-out countries, drivers are by default organ donors unless they elect not to be; in opt-in countries they are by default *not* donors unless they choose to be. Effective rates of participation in organ donor pools are almost 98 percent in the former countries and about 15 percent in the latter, a remarkable difference, given the low transaction costs and the significance of the decision.

Such patterns suggest that minor contextual changes can alter what consumers choose in ways that are unlikely to relate to their ultimate utility. Of course, the fact that consumers are influenced by conflict and context need not immediately imply that choices ought to be taken away from them or even that the number of available alternatives ought to be restricted. It does suggest, however, that a proliferation of alternatives needs to be considered with care rather than seen as an obvious advantage. It also suggests that the default outcome, which acquires a privileged status by being the default—rather than being a mere formality that can be effortlessly changed—needs to be chosen thoughtfully. In effect, when a large array of options, including the option of choosing the status quo, are inappropriately handled (intentionally or not) substantial decrement in consumers' welfare can result. A proliferation of complicated decisions in the mortgage market, for example, can lead to quite bad outcomes for borrowers.

Context Dependent Preferences

Individual preferences are significantly more com-

plicated and local than the rational conception. People often are weak at predicting their future tastes or at learning from past experience (Kahneman 1994), and their choices can be influenced by anticipated regret (Bell 1982), by costs already incurred (Arkes and Blumer 1985; Gourville and Soman 1998), and by effects of sequencing and temporal separation where high-discount rates for future as compared to present outcomes can yield dynamically inconsistent preferences (Loewenstein and Elster 1992; Loewenstein and Thaler 1989). Contrary to standard assumptions, the psychological carriers of value are perceived gains and losses and not anticipated final states of wealth, and attitudes toward risk tend to shift from risk aversion in the face of gains to risk seeking what appear as losses (Kahneman and Tversky 1979). Moreover, people are loss averse—that is, they perceive that the loss associated with giving up a good is substantially greater than the utility associated with obtaining it (Tversky and Kahneman 1991). This, in turn, leads to reluctance to depart from the status quo because things to be renounced are valued more highly than comparable things to be gained (Knetsch 1989; Samuelson and Zeckhauser 1988).

People use intuitive mental accounting schemes in which they compartmentalize wealth and spending into distinct budget categories such as savings, rent, and entertainment, and into separate mental accounts such as current income, assets, and future income (Thaler 1985, 1992). Contrary to standard fungibility assumptions, people exhibit different degrees of willingness to spend from various accounts, yielding consumption patterns that are sensitive to labels, overly dependent on current income, and often problematic, such as saving at a low interest rate while concurrently borrowing at a high rate (Ausubel 1991).

Common to these patterns is the highly local and context-dependent nature of consumer decisions. Standard thinking envisions preferences that are largely impervious to minor contextual nuances. In contrast, people's choices are heavily context dependent, with the option chosen not infrequently

being one that would have been forgone had the context differed by just a little, often in trivial ways. What this means is that people's choices are often at the mercy of chance as well as of intentional manipulation. These choices merit careful consideration, particularly in contexts with potentially serious consequences.

Knowledge, Attention, and Intention

A standard assumption is that consumers are attentive, knowledgeable, and typically able to avail themselves of important information. Instead, consumers across a wide range of income and education levels are often ignorant of options, program rules, benefits, and opportunities. Surveys show that fewer than one-fifth of investors (in stocks, bonds, funds, or other securities) can be considered financially literate (Alexander, Jones, and Nigro 1998); similar findings describe the understanding shown by pension plan participants (Schultz 1995). Indeed, even older beneficiaries often do not know what kind of pension they are set to receive or what mix of stocks and bonds they own.

Cognitive load, defined as the amount of information attended to, has been shown to affect performance in a variety of tasks. When consumers find themselves in situations that are unfamiliar, distracting, tense, or even stigmatizing (such as applying for a loan), all of which tend to consume cognitive and emotional resources, fewer resources remain available to process information relevant to the decision at hand. As a result, decisions may become even more dependent on situational cues and irrelevant considerations. This is observed, for example, in studies of low-literacy consumers who apparently struggle with trade-offs between effort and accuracy, are overly dependent on peripheral cues in product advertising and packaging, and show systematic withdrawal from market interactions (Adkins and Ozanne 2005).

More generally, information cannot be equated with knowledge. People often do not fully process imminently available data because of limitations in attention, understanding, perceived relevance, or

their ability to remember. Program designers often do not appreciate this, having been trained to think that people know what is important and knowable.

An important theme in behavioral research with profound consequences for thinking about policy is the systematic discrepancy between intention and action, which is essentially assumed away in analyses of rational behavior. Just because a person recognizes and has every intention of doing the right thing often does not bring about the intended action. Even when intentions are genuine and strong, self-control problems, poor planning, lack of attention, and forgetting can all intercede. On the flip side and for similar reasons, actions may be taken that were genuinely unintended, thus violating the notion of revealed preference. A degree of self-knowledge, in turn, leads people to take precautions against such tendencies, which can lead to unintended consequences when policies are designed with different creatures in mind.

Channel Factors

The pressures exerted by situational factors can constitute restraining forces that are hard to overcome or can create inducing forces that can be harnessed to great effect. In contrast with massive interventions that often prove ineffectual, seemingly minor situational changes can have a large impact. Kurt Lewin, who coined the term channel factors (Lewin 1951), suggests that certain behaviors can be facilitated by opening a channel, whereas other behaviors can be blocked by closing a channel. Leventhal, Singer, and Jones (1965) document an illustrative example of a channel factor: their subjects received persuasive communications about the risks of tetanus and the value of inoculation and were then invited to go to the campus infirmary for a tetanus shot. Follow-up surveys showed that the communication was effective in changing beliefs and attitudes. Nonetheless, only 3 percent actually took the step of getting themselves inoculated compared with 28 percent of those who received the same communication but also were given a map of the campus with the infirmary circled and were urged to decide on a particular time to go and a route to get them there.

Along these lines, Koehler and Poon (2005) argue that people's predictions of their future behavior overweight the strength of their current intentions and underweight contextual factors that influence the likelihood that those intentions will translate into action. This can generate systematically misguided plans among consumers who, reassured by their good intentions, proceed to put themselves in situations that are powerful enough to make them act and choose otherwise.

Behavioral research highlights a simple fact that is both terribly trivial and extremely profound: people choose between, act toward, and exercise judgment about things as they are mentally represented and not about things as they are in the real world. In addition, the relationship between extensional outcome and internal representation is rarely one to one. Instead, options are construed, elaborated on, and contextually interpreted in ways that are both systematic and consequential.

Framing, context effects, and channel factors are some of the features of the construal process with important policy implications. The take-up of a program, for example, will depend on whether it is construed as the default or as a departure from the status quo, whether others are thought to have adopted it, or whether it requires what is perceived as a difficult choice from among an array of alternatives or, instead, it is perceived as an easy choice.

The Promise and Limitations of Behavioral Regulation

Recent behavioral work, particularly in the area of savings, has shown the promise of behaviorally informed regulation—regulation that is motivated directly by specific psychological insights, including of the types discussed above. The research suggests that individual choice can be profoundly affected by psychological constructs such as mental accounting, anchoring, endowment effects, and framing; these constructs can make a big difference to outcomes. Building on these insights, among other things, recent policy innovations have exploited the power of

defaults in determining, for example, whether and how much individuals will save through contributions to 401(k) plans.

In a study of elective enrollment in one firm’s retirement plan (Madrian and Shea 2001), employees who joined the firm had to fill out a form to participate in the savings plan. Although the plan was quite lucrative, participation was low, and a simple feature of the program was then changed: prior to the change, the enrollment form required people to opt-in (“Check this box if you would like to participate”). After the change, new employees received a form that required of them to “Check this box if you would like not to have 3 percent of your pay check put into a 401(k) plan.” The effect of this nuanced manipulation was large. As the default option changed from “no contribution” to “contribution,” take-up rates increased from 38 to 86 percent. Several years later, those exposed to the contribution default still showed higher contribution rates. More and more employers have been adopting automatic features, and the Pension Protection Act of 2006 includes a number of features specifically crafted to encourage opt-out defaults in savings plans. If employers are required to enroll workers in automatic retirement plans unless the worker affirmatively opts out of participating, there is good reason to expect enrollment rates to be higher and net savings to increase.

Behavioral principles have figured prominently in recent attempts at even more constructive savings applications. Save More Tomorrow (SMarT), a program intended to increase retirement savings, deposits money into savings out of future salary raises rather than out of current income, with the added proviso that one can withdraw from the program at any time. The program relies on basic behavioral regularities—future discounting, nominal loss aversion, and status quo bias—to generate substantial increases in retirement savings. It has been adopted by many employers, affecting the lives of millions in the United States and abroad (Benartzi and Thaler forthcoming; Iwry and John 2006; Thaler and Benartzi 2004).

Similar types of policies can be pursued across a range of financial products and services that reach low-income households. By further extension from the retirement literature, employers could be required to deposit workers’ income checks directly into a low-cost bank account with an automatic savings plan unless the worker opts out of the arrangement. Governments could make tax refund and benefit payments through direct deposit into a safe and affordable bank account with savings features, again unless the beneficiary opts out (Barr 2007).

Our starting point, however, is that opt-out rules and other such examples may be limited in their scope of application. Consider the common opt-out experience of signing a rental car contract. Individuals actively opt out of many features of a rental contract but do so almost automatically when the agent tells them to “Initial here, here, and here.” Although opting out may be effective in the lack of a strong market pressure, it is far too easily overcome by the firm who interacts directly with the consumer. This raises the more basic question, “What would behavioral regulation look like in a richer context, where we consider the ability of the firm to respond to this regulation, and potentially to undo or magnify it?” To understand the interaction between behaviorally informed regulation and market forces, we turn to industrial organization.

Industrial Organization: How Market Forces Can Undermine or Reinforce Behaviorally Informed Regulation

In theory, market forces help push private sector actors to offer the best products at the lowest prices. The theory, however, depends crucially on assumptions of rationality. In the classic economic model, the setup is this: free competition for the provision of goods and services to consumers who obtain full information, understand the information they receive, and act based on that full information. Market actors are restrained from peddling welfare-reducing products by consumers who demand better. In practice and in some contexts, as we have seen, the market has produced products and services that

are suboptimal. It is easier to see why market forces sometimes may not produce optimal products and services once one relaxes the assumptions underlying the classic model.

Returning to the opt-out regulation, the presumption is that individuals fail to maximize their own utility because of temporal inconsistency—they would like to save but fail to do so. Opt-out regulation eases this problem by facilitating savings even among those who do nothing (perhaps because of procrastination). What are firm (employer) incentives in this case? Employers appear to be largely indifferent or perhaps even motivated to decrease the bias against savings.¹⁵ This incentive is crucial.

But in some markets firms have incentives to confound consumers (Gabaix and Laibson 2006). In posting prices, for example, firms have strong market and private incentives to hide certain prices. If consumers are sorted into those who understand complicated offers and those who do not, it is difficult for firms to compete by offering the most transparent products if such products are less profitable. Consumers who understand bad deals already avoid them and will shun the new offer; consumers who do not understand them and go for the new, better offer will just lower profits for the firm (Gabaix and Laibson 2006). This result—that transparency does not always pay off for firms because people are fallible and easily misled—illustrates how firms

sometimes have strong incentives to exacerbate psychological biases. Regulation in this case faces a much more difficult challenge than in the savings situation.

This distinction in market responses to individual psychology is central to our framework; it is illustrated in Table 1. In some cases, the market is either neutral or wants to overcome consumer fallibility. In other cases, the market would like to exploit or exaggerate consumer fallibility. Thus, when consumers misunderstand compounding of interest in the context of saving, banks have incentives to reduce this misunderstanding so that they can increase their deposits. When consumers misunderstand compounding in the context of borrowing, lenders have little incentive to remove this misunderstanding because it can only decrease the debts they are able to issue.¹⁶ When consumers procrastinate in signing up for the EITC (and hence in filing their tax returns), private tax preparation firms have incentives to help remove this procrastination to increase their customer base. When consumers procrastinate in sending in requests for rebates (but make retail purchases as if they are going to receive a rebate), retailers benefit. Note the parallelism in these examples: firm incentives to alleviate or exploit a bias are not an intrinsic feature of the bias itself. Instead, they are a function of how the bias plays itself out in the particular market structure.

15. This is largely because of the existing regulatory framework—pension regulation gives employers at least some incentive to enroll lower-income individuals in 401(k) programs. Absent this, it is likely that firms would be happy to discourage enrollment because they often must pay the match for these individuals. Even with the incentive, the pension structure creates far-from-perfect alignment of public and private interests in enrolling workers. This point is interesting because it suggests that even defaults in savings work only because some other regulation changed the scoring of the game.

16. This stylized example abstracts from collection issues.

TABLE 1

The Firm and the Individual

Behavioral fallibility	Market neutral, or wants to overcome consumer fallibility	Market exploits consumer fallibility
Consumers misunderstand compounding	Consumers misunderstand compounding in savings. → Banks would like to reduce this to increase savings base.	Consumers misunderstand compounding in borrowing. → Banks would like to exploit this to increase borrowing.
Consumers procrastinate	Consumers procrastinate in signing up for EITC. → Tax filing companies would like to reduce this to increase customer base.	Consumers procrastinate in sending in requests for rebates. → Retailers would like to exploit this to increase revenues.

In the consumer credit market, one worries that many firm-individual interactions are of the kind where firms seek to exploit rather than to alleviate bias. If true, this raises the concern of overextrapolating from the example of 401(k) defaults to credit products. To the extent that 401(k) defaults work because optimal behavior is largely aligned with market incentives, other areas such as credit markets might be more difficult to regulate with mere defaults. Furthermore, if the credit market is dominated by low-road firms offering opaque products that prey on human weakness, it is more likely that regulators of such a market will be captured, that market forces will defeat positive defaults sets, and that low-road players will continue to dominate. Many observers believe that the credit markets are, in fact, currently dominated by such low-road firms (e.g., Bar-Gill 2004; Mann 2007) and that players that were formerly high-road players have come to adopt the sharp practices of their low-road competitors. If government policymakers want to attempt to use defaults in such contexts, they might need to deploy stickier defaults or more-aggressive policy options.

Table 2 illustrates a conceptual approach to the issue of regulatory choice. The regulator can either change the rules of the game or change the scoring of the game. Setting a default is an example of changing the rules of the game, as is disclosure regulation. Specifically, the rules of the game are changed when there's an attempt to change the nature of firm-individual interactions, as when the regulation attempts to affect what can be said, offered, or done. Changing the scoring of the game, by contrast, changes the payoffs a firm will receive for particular outcomes. Pension regulation that penalizes firms whose 401(k) plan enrollment is top heavy with high-paid executives is an example of how scoring gives firms incentives to enroll low-income individuals without setting particular rules on how this is done.

TABLE 2

Changing the Game

Rules	<ul style="list-style-type: none"> • Set the defaults in 401(k) savings • Set the default for organ donation
Scoring	<ul style="list-style-type: none"> • Penalties for 401(k) enrollment that is top heavy with high-salary employees • Grants to states that enroll organ donors

Table 3 weaves together these different dimensions, illustrating how regulatory choice ought to be analyzed according to the market’s stance toward human fallibility. In what follows, we discuss the specific application of these forces to the case of mortgage markets with an example in the form of an opt-out mortgage system. Among other things, the discussion illustrates how policies in the top-right-hand corner of Table 3 face a particular challenge. Changing the rules of the game alone will be difficult when firms are highly motivated to find work-arounds. When we suggest below opt-out policies in mortgages, the challenge will be to find ways to make these starting positions sticky so that firms do not simply undo their default nature. In our judgment, both achieving a good default and figuring out how to make it work requires separating low-road from high-road firms and making it profitable for high-road firms to offer the default product (for a related concept, see Kennedy 2005). For that to work, the default must be sufficiently attractive to consumers and sufficiently profitable for high-road firms to succeed in offering it. In addition, penalties associated with deviations from the default must be sufficiently costly to make the default stick even in the face of market pressures from low-road firms. It may be that in some credit markets low-road firms have become so dominant that sticky defaults will be ineffectual. Moreover, achieving such a default is likely more costly than

making defaults work when market incentives align, not least because the costs associated with the stickiness of the default involve dead-weight losses, given that there will be those for whom deviating from the default is optimal. These losses would need to be weighed against the losses from the current system, as well as against losses from alternative approaches such as disclosure or product regulation. Nonetheless, given the considerations above it seems worth exploring whether such sticky defaults can help to change the rules of the game.

The default example is just one of a set of examples we explore elsewhere as potential regulatory interventions based on our conceptual framework. As noted above, given market responses to relevant psychological factors in different contexts, regulation may need to take a variety of forms. These forms include some that, while informed by psychology, are designed not to affect behavioral change but rather to alter the structure of the market in which relevant choices are made. Given the complexities involved, the purpose of this paper is not to champion a specific opt-out mortgage policy. Instead, we illustrate how a behaviorally informed regulatory analysis would lead to a deeper understanding of the costs and benefits of specific policies. We explore one idea to implement an opt-out mortgage policy in order to illustrate our conceptual approach.

TABLE 3
Behaviorally Informed Regulation

	Market neutral or wants to overcome consumer fallibility	Market exploits consumer fallibility
Rules	<ul style="list-style-type: none"> • Public education on saving • Direct deposit or auto-save • Licensing of brokers 	<ul style="list-style-type: none"> • Opt-out mortgage system • Information debiasing on debt through framing, salience
Scoring	<ul style="list-style-type: none"> • Tax incentives for savings vehicles for the poor 	<ul style="list-style-type: none"> • Penalties to make the opt-out system sticky • Ex post liability standard for truth in lending • Broker fiduciary duty, or changing compensation (banning yield spread premiums)

4. An Opt Out Mortgage Policy

While the causes of the mortgage crisis are myriad, a central problem is that many borrowers took out loans that they did not understand and could not afford. Brokers and lenders offered loans that looked much less expensive than they really were because of low initial monthly payments and hidden, costly features. Families commonly make mistakes in taking out home mortgages because they are misled by broker sales tactics, misunderstand the complicated terms and financial trade-offs in mortgages, wrongly forecast their own behavior, and misperceive their risks of borrowing. How many homeowners really understand how the teaser rate, introductory rate, and reset rate relate to the London interbank offered rate plus some specified margin, or can judge whether the prepayment penalty will offset the gains from the teaser rate?

Improved disclosures might help. Altering the rules of the game of disclosure and altering the “scoring” for seeking to evade proper disclosure may be sufficient to reduce the worst outcomes. However, if market pressures and consumer confusion are sufficiently strong, such disclosure may not be enough. If market complexity is sufficiently disruptive to consumer choice, product regulation might prove most appropriate. For example, by barring prepayment penalties, one could reduce lock-in to bad mortgages; by barring short-term adjustable rate mortgages (ARMs) and balloon payments, one could reduce refinance pressure. In both cases, more of the cost of the loan would be pushed into interest rates and competition could focus on price. Price competition would benefit consumers, who would be more likely to understand the terms on which lenders are competing. Product regulation would also reduce cognitive and emotional pressures related to potentially bad decisionmaking. However, product regulation may stifle beneficial innovation; there is always also the possibility that government may simply get it wrong.

For that reason, we propose a new form of regulation. For lack of a better term, we call this a sticky opt-out mortgage system. As with opt-out regulation generally, a sticky opt out-system would fall, in terms of stringency, somewhere between product regulation and disclosure. For reasons we explain below, however, market forces would likely swamp a pure opt-out regime—that’s where the need for stickiness comes in. We propose that a default be established with increased liability exposure for deviations that harm consumers. This approach corresponds to a combination of changing the rules of the game (top-right-hand corner of Table 3) and changing liability rules (bottom-right-hand corner of that table).

The proposal is grounded in our equilibrium model of firm incentives and individual psychology. Borrowers may be unable to distinguish among complex loan products and may be unable to act optimally based on such an understanding (e.g., Ausubel 1991). We thus deploy an opt-out strategy to make it easier for borrowers to choose a standard product and harder for them to choose a product that they are less likely to understand. At the same time, lenders may seek to extract surplus from borrowers because of asymmetric information about future income or default probabilities (Musto 2007). In the short term, lenders and brokers may benefit from selling borrowers loans that they cannot afford. Thus, as we outline next, a pure default would be undermined by firms; regulation needs to take account of this market pressure.

In our model, lenders would be required to offer eligible borrowers a standard mortgage or set of mortgages, such as a fixed rate, self-amortizing, thirty-year mortgage loan, according to reasonable underwriting standards. The precise contours of the standard set of mortgages would be set by regulation. Lenders would be free to charge whatever interest rate they wanted on the loan, and, subject

to the constraints outlined below, could offer whatever other loan products they wanted outside of the standard package. Borrowers, however, would receive the standard mortgage offered, unless they chose to opt out in favor of a nonstandard option offered by the lender, after honest and comprehensible disclosures from brokers or lenders about the risks of the alternative mortgages. An opt-out mortgage system would mean borrowers would be more likely to receive straightforward loans they could understand.

But a plain vanilla opt-out policy is likely to be inadequate. Unlike the savings context, where market incentives align well with policies to overcome behavioral biases, in the context of the credit markets firms often have an incentive to hide the true costs of borrowing. Given the strong market pressures to deviate from the default offer, we would need to require more than a simple opt out to make the default sticky enough to make a difference in outcomes. Deviation from the offer would require heightened disclosures and additional legal exposure for lenders in order to make the default sticky. Under our plan, lenders would have stronger incentives to provide meaningful disclosures to those whom they convince to opt out because they would face increased regulatory scrutiny, or increased costs if the loans did not work out (for example, if the borrower defaults on the loan and seeks bankruptcy protection or the lender seeks foreclosure).

Future work will need to explore the enforcement mechanism in detail. For example, under one potential approach to making the opt-out sticky, if default occurs when a borrower opts out the borrower could raise the lack of reasonable disclosure as a defense to bankruptcy or foreclosure. Using an objective reasonableness standard akin to that used for warranty analysis under the Uniform Commercial Code, if the court determined that the disclosure would not effectively communicate the key terms and risks of the mortgage to the typical borrower, the court could modify or rescind the loan contract. Another alternative would be to have the banking agencies (or another expert consumer agency) en-

force the requirement, rather than relying on the courts to do so. The agency would be responsible for supervising the nature of disclosures according to a reasonableness standard and would impose a fine on the lender and order corrective actions if the disclosures were found to be unreasonable. The precise nature of the stickiness required and the trade-offs involved in imposing these costs on lenders would need to be explored in greater detail, but in principle a sticky opt-out policy could effectively leverage the behavioral insight that defaults matter with the industrial organizational insight that certain market incentives work against a pure opt-out policy.

An opt-out mortgage system with stickiness might provide several benefits over the current market outcomes. Under the plan, a plain vanilla set of default mortgages with standard terms would be easier to compare across mortgage offers. Information could be more efficiently transmitted across the market. Consumers are likely to understand the key terms and features of such standard products better than they would alternative mortgage products. Price competition is more likely to be salient once features are standardized. Behaviorally, once the alternative products are introduced, the consumer will be made aware that such alternatives represent deviations from the default, helping to anchor consumer decisionmaking and providing some basic expectations for what ought to enter into consumer choice. Framing the mortgage choice as one between accepting standard mortgage offers and needing affirmatively to choose nonstandard products should improve consumer decisionmaking. Creditors will be required to make heightened disclosures about the risks of the alternative loan products for the borrower, subject to legal sanction in the event of failure to disclose reasonably such risks. The legal sanctions should deter creditors from making highly unreasonable alternative offers, with hidden and complicated terms. Consumers may be less likely to make significant mistakes. The approach would allow lenders to continue to develop new kinds of mortgages, but only when they can adequately explain key terms and risks to borrowers.

Moreover, requiring a default to be offered, accompanied by required heightened disclosures and increased legal exposure for deviations, may help to make high-road lending more profitable in relation to low-road lending. If offering an opt-out mortgage product helps to split the market between high- and low-road firms and rewards the former, the market may shift (back) toward firms that offer home mortgage products that better serve borrowers. For this to work effectively, the default and the efforts to make the default sticky would need to distinguish the typical good loan (benefiting both lender and borrower) from a variety of bad loans—e.g., those that benefit the lender but harm the borrower, those that benefit the borrower but harm the lender, and those that harm the borrower and lender but benefit third parties, such as brokers.

There will be costs associated with requiring an opt-out home mortgage. For example, the sticky defaults may not be sticky enough to alter outcomes given market pressures. Implementation of the measure may be costly and the disclosure requirement and uncertainty regarding enforcement of the standard might reduce overall access to home mortgage lending. There may be too many cases in which alternative products are optimal so that the default product is in essence incorrect and comes to be seen as such. The default would then matter less over time; forcing firms and consumers to go through the process of deviating from it would become increasingly just another burden (like existing disclosure paperwork) along the road to getting a home mortgage loan. Low-income, minority, or first-time homeowners who have benefited from more-flexible underwriting and more-innovative mortgage developments might see their access reduced if the standard set of mortgages does not include products suitable to their needs.

One could improve these outcomes in a variety of ways. For example, the opt-out regulation could require that the standard set of mortgages include a thirty-year fixed mortgage, a five- or seven-year ARM, and straightforward mortgages designed to meet the particular needs of first-time, minority,

or low-income homeowners. One might develop smart defaults based on key borrower characteristics such as income and age. With a handful of key facts, an optimal default might be offered to an individual borrower. The optimal default would consist of a mortgage or set of mortgages that most closely align with the set of mortgages that the typical borrower with that income and age would prefer. For example, a borrower with rising income prospects might appropriately be offered a five-year ARM. Smart defaults might reduce error costs associated with the proposal and increase the range of mortgages that can be developed to meet the needs of a broad range of borrowers, including lower-income or first-time homeowners. Smart defaults may add to consumer confusion, however, when too many choice options exist across the market. Moreover, it may be difficult to design smart defaults consistent with fair lending rules.

Another approach to improve the standard mortgage choice set and to reduce enforcement costs over time would be to build in banking agency supervision as well as periodic required reviews of the defaults, with consumer experimental design or survey research to test the disclosures so that the opt-out product stays current with updated knowledge of outcomes in the home mortgage market. Indeed, lenders might be required to conduct such research and to disclose the results to regulators and the public on developing a new product disclosure. Regulators might use the results of the research to provide safe harbors for disclosures that are shown to be reasonable *ex ante* through these methods. Regulators also could issue “no action” letters—stating agency policy not to take enforcement action against firms—regarding disclosures that are deemed through such research to be reasonable. The appropriate federal and state supervisory agencies could be required to conduct ongoing supervision and testing of compliance with the opt-out regulations and disclosure requirements. The federal and state banking agencies could easily adapt to this additional role with respect to depositories, while the FTC, a new expert agency, or state agencies would need to be provided with the author-

ity and resources to conduct ongoing supervisory and testing functions for nondepositories instead of relying solely on enforcement actions. Through these “no action” letters, safe harbors, supervision, and other regulatory guidance, the regulators could develop a body of law that would increase compliance across the diverse financial sectors involved in mortgage lending, while reducing the uncertainty facing lenders from the new opt-out requirement and providing greater freedom for financial innovation.

5. Conclusions

We have explored how existing regulation fails to take account of advances in behavioral research about how people think and act. By contrast, behaviorally informed regulation would take account of the importance of framing and defaults, of the gap between information and understanding and between intention and action, as well as of other psychological factors affecting how people behave. At the same time, we argue, behaviorally informed regulation should take into account not only behavioral insights about individuals, but also economic insights about markets. Markets can be shown to systematically favor overcoming behavioral biases in some contexts and to systematically favor exploiting those biases in other contexts. A central illustration of this distinction is the contrast between the market for saving and the market for borrowing—in which the same human failing in understanding and acting on the concept of compound interest leads to opposite market reactions.

We have developed a model in which outcomes are an equilibrium interaction between individuals with specific psychologies and firms that respond to those psychologies within specific markets. To the extent that outcomes in this equilibrium contain serious social welfare failures, regulation could potentially play a useful role. Taking both individuals

and industrial organization seriously suggests the need for a range of market-context specific policy options, including changing both the rules of the game and its scoring. It is noteworthy that our current framework largely retains the classical perspective of consumers interacting in competitive markets. The difference is that consumers are now presumed to be fallible in systematic and important ways that require insightful regulation to restore fair and healthy competition.

We have sketched here one policy suggestion derived from our conceptual model.¹⁷ In particular, in the home mortgage market we have focused on a new, opt-out home mortgage system. Under the proposal, borrowers would be offered a standard set of mortgages with sound underwriting and straightforward terms—and that is the mortgage they would receive, unless they opted out. An opt-out system would mean borrowers would be more likely to receive appropriate loans without blocking beneficial financial innovation. At the same time, market forces may work against the standard offerings. Thus, we have suggested several alternative enforcement mechanisms for making the default sticky enough to influence the market. Further work will be required to explore which of these alternative enforcement approaches might merit enactment.

17. We explore a range of such policy options in forthcoming work undertaken for the New America Foundation.

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