HOW BEHAVIORAL ECONOMICS TRIMS ITS SAILS AND WHY

Ryan Bubb & Richard H. Pildes

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The preference of behavioral law and economics (BLE) for regulatory approaches that preserve "freedom of choice" has led to incomplete policy analysis and inefficient policies. BLE has been broadly regarded as among the most promising new developments in public policymaking theory and practice. As social science, BLE offers hope that better understanding of human behavior will provide a sounder foundation for policy design. As politics, BLE offers a possible political consensus built around minimalist forms of government action — "nudges" — that preserve freedom of choice. These two seductive dimensions of BLE are, however, in deep tension. Put simply, it would be surprising if the evidence documenting the failure of individual choice implied a turn toward regulatory tools that preserve individual choice.

Developing BLE fully along its social-scientific dimension would reveal two categories of recurring limitations in BLE. First, BLE often artificially excludes traditional regulatory tools, such as direct mandates, from its analysis of policy options. However, BLE's preferred nudges are, in important cases, not likely to be effective — ironically, for reasons BLE itself identifies. BLE has also neglected the ways in which behavioral failures interact with traditional market failures and the implications of this interaction for policy design. A more complete framework generates policy recommendations beyond both nudges and neoclassical economic prescriptions.

Second, BLE does not properly evaluate, at times, how its own regulatory tools actually function. Many of these seemingly choice-preserving tools are not nearly as light touch as advertised. The default rules so central to BLE are often better viewed as preserving the formality of choice while, for many individuals, functioning as effective mandates. The view that people can always rationally opt out has led policymakers to set these powerful defaults at the wrong levels, resulting in counterproductive policies.

We illustrate the costs of BLE's commitment to freedom of choice by analyzing three of the most important areas for current policy: retirement savings, consumer credit, and environmental protection.

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INTRODUCTION

Behavioral law and economics (BLE) has been broadly regarded in recent years as among the most promising and exciting new developments in public policymaking theory and practice. Emerging enthusiasm for this potential marriage of psychology and economics — referred to as behavioral economics in economics, as behavioral law and economics in law schools, and as applied behavioral science in other social sciences — stems from both a social-scientific dimension of BLE and a political one. As applied social science, BLE offers hope that proper appreciation of the actual cognitive frameworks, information-processing heuristics, and likely motivations of choice-making individuals will provide a sounder foundation than neoclassical economics can for the design of legislation and regulation. As politics, BLE offers the promise of a possible political consensus — built around minimalist forms of government action that preserve freedom of choice, such as default rules and "smart disclosure" — that cuts through today's hyperpolarized, partisan conflicts and offers a tantalizing third way between conventional ideologies of right and left.

The thrust of this Article is that these two seductive dimensions of BLE — its appeal as social science and as politics — are, in important contexts, in deep tension. This conflict has not been widely recognized. Put simply, it would be surprising if the main policy implication of the mounting evidence documenting the failure of individual choice was a turn toward regulatory instruments that preserve individual choice.

Precisely because BLE appears to be making headway as politics, it is all the more important to highlight tensions between BLE's political aspirations and its underlying social science. Regulatory policies in the United States are already being informed by BLE.[1] President Obama issued an Executive Order requiring federal agencies to consider regulatory options that preserve "freedom of choice for the public,"[2] and is now forming a "Behavioral Insights Team" to employ BLE

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[1] *See* CASS R. SUNSTEIN, SIMPLER 100–26 (2013).

[2] Exec. Order No. 13,563, 76 Fed. Reg. 3,821, 3,822 (Jan. 21, 2011), *archived at* http://perma.cc/KV6D-GB9L. Section 4 of this Order states:

> Sec. 4. Flexible Approaches. Where relevant, feasible, and consistent with regulatory objectives, and to the extent permitted by law, each agency shall identify and consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public. These approaches include warnings, appropriate default rules, and disclosure requirements as well as provision of information to the public in a form that is clear and intelligible.

Id.

work more broadly and systemically across the government.[3] In 2010, the United Kingdom, under Prime Minister David Cameron, created the first Behavioural Insights Team;[4] the Team has begun to push behaviorally informed initiatives in areas such as consumer behavior and environmental protection.[5] In Europe more broadly, a European Commission report, *Applying Behavioural Sciences to EU Policy-making*, provides a general framework for incorporating behavioral economics into EU policy.[6] Similarly, the Organisation for Economic Co-operation and Development (OECD) has issued numerous recommendations that it grounds in behavioral findings.[7] The United States, the United Kingdom, and Europe appear flush with excitement for BLE.

In the face of this growing harmony around BLE, a discordant note needs to be sounded. Our claim is that BLE does not always pursue the full implications of its own underlying social science. Behavioral findings showing the failure of individual choice often point toward policy prescriptions that limit choice or mandate outcomes. But most proponents of BLE do not push analysis to this point and focus instead on light-touch regulatory tools that preserve wide scope for choice. Nor do they compare the costs and benefits of choice-limiting alternatives to the "choice-preserving" options they prefer. BLE thus risks offering incomplete analysis and ineffective or counterproductive policy recommendations.

One reason, we believe, might be that pursuing the full implications of the social science would run up against BLE's aspiration to offer a political third way — *Regulation for Conservatives*[8] is the title of one of the foundational works in the field — that can generate broad political consensus by preserving freedom of choice. Many advocates of BLE might assume (consciously or not) that the chastened, post–New Deal political era in which we live makes unlikely sufficient

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[3] *See* Courtney Subramanian, *'Nudge' Back in Fashion at White House*, TIME (Aug. 9, 2013), http://swampland.time.com/2013/08/09/nudge-back-in-fashion-at-white-house/, *archived at* http://perma.cc/RHH3-XFES.

[4] RHYS JONES ET AL., CHANGING BEHAVIOURS 35 (2013).

[5] *Id.*; *see also* Kristine Erta et al., *Applying Behavioural Economics at the Financial Conduct Authority* (Fin. Conduct Auth., Occasional Paper No. 1, 2013), *archived at* http://www.perma.cc/8GS8-TM8G (discussing the lessons of behavioral economics for financial services regulation in the U.K.).

[6] *See generally* RENÉ VAN BAVEL ET AL., JOINT RESEARCH CTR., EUROPEAN COMM'N, APPLYING BEHAVIOURAL SCIENCES TO EU POLICY-MAKING (2013), *archived at* http://perma.cc/MWC5-KQEQ.

[7] *See generally Consumer Policy Toolkit*, ORG. FOR ECON. CO-OPERATION & DEV., http://www.oecd.org/sti/consumer-policy/toolkit (last visited Mar. 1, 2014), *archived at* http://perma.cc/HDE6-N54P.

[8] Colin Camerer et al., *Regulation for Conservatives: Behavioral Economics and the Case for "Asymmetric Paternalism,"* 151 U. PA. L. REV. 1211 (2003).

political support for interventions that are not choice-preserving. As a result, some advocates of BLE build these political constraints into their social-scientific analysis of policy.[9] Some leading behavioral scholars are explicit about their decision to elevate political realism over policy recommendations that might follow more logically from behavioral insights.[10] These scholars perhaps state more self-consciously what some others might have internalized as necessary limits on realistic policy recommendations.[11] For other BLE proponents, philosophical predispositions toward personal freedom might lead to focusing primarily on choice-preserving tools, but that would be for normative reasons outside the welfarist perspective that formally drives the analysis.

Whatever the specific reasons, our argument is that developing BLE fully along its social-scientific dimension would reveal two categories of recurring analytic limitations in the dominant approach to BLE. First, BLE often artificially and wrongly excludes more traditional regulatory tools, such as direct mandates, from its analysis of policy options. Second, BLE sometimes fails to properly evaluate how its own regulatory tools actually function or the ways in which actual individual behavior suggests those tools should be modified (or abandoned).

One aspect of the first problem, "artificial truncation," is that the choice-preserving policies in which BLE is so heavily invested are at

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[9] For a prior critique of Professor Cass Sunstein's work as seeking political consensus at the expense of policy effectiveness, see Richard H. Pildes, *Means and Ends in Politics and Law: An Essay in Honor of Cass Sunstein*, 43 TULSA L. REV. 857, 860 (2008) ("Rather than a bold, new Third Way for a transformed politics, Sunstein's search for consensus might show that political ambition and aspiration at this moment can only be confined to the lowest common denominator of broad public acceptance.").

[10] After presenting a rich portrait of the behavioral failings of consumers in markets for cell phones, credit cards, and mortgages, and the ways suppliers exploit these failings through contract design, our colleague Professor Oren Bar-Gill, one of the leading scholars in this area, chooses to limit his policy analysis to regulation of information disclosure. He is admirably explicit in confessing that this focus on disclosure regulation as the "solution" to behavioral failures in consumer markets "is not because disclosure always works or because disclosure is always the optimal form of regulatory intervention. Rather, it is because disclosure mandates are the least intrusive form of regulation and, thus, the form of regulation most likely to be adopted." OREN BAR-GILL, SEDUCTION BY CONTRACT 32 (2012). Bar-Gill goes on to add: "It is also because disclosure mandates, when optimally designed, directly target the mistakes and misperceptions at the core of the behavioral market failure." *Id.*

For a more implicit acknowledgment of the role that political considerations play in limiting BLE policy recommendations, see Cass R. Sunstein & Lucia A. Reisch, *Automatically Green: Behavioral Economics and Environmental Protection*, 38 HARV. ENVTL. L. REV. (forthcoming 2014) (manuscript at 5), *archived at* http://perma.cc/GT2-2FWX ("Especially in a period in which the standard tools — mandates, bans, and economic incentives — sometimes face serious economic and political obstacles, default rules deserve careful attention.").

[11] Not all work in BLE follows the approach we criticize. *See infra* note 28 and accompanying text.

times unlikely to be sufficiently effective — ironically, for reasons BLE itself identifies. Fuller, simpler, and more effective disclosure, one of the main options in BLE's arsenal, is often not a realistic way to adequately rectify individual incapacity to make accurate, informed judgments based on the appropriate time horizons. Instead, these widespread individual failings might well suggest regulatory tools beyond disclosure: policies that limit choices or mandate specific substantive outcomes in ways characteristic of earlier modes of government action that BLE hopes to supplant. Indeed, a real risk exists that BLE might permit political actors to claim credit for fixing a problem (and, even worse, sincerely to believe they have) even though the remedy of choice-preserving disclosure might actually do very little. If people are so present biased, for example, that they fall for teaser-rate credit card deals and become mired in debt, will fuller or simpler disclosure of the true total costs of those deals be effective at leading only the "right" individuals to accept teaser-rate deals? Or if the bounded willpower of many people will continue to make resisting the temptation of these deals difficult, even with better disclosure, should policy bar or regulate teaser rates instead?[12]

This "artificial truncation problem" also means that BLE endorses default rules without sufficient analysis of whether preserving the opt-out produces better outcomes than a simple mandate. These choice-preserving defaults with opt-out options are said to be attractive because of the diversity of consumer preferences. To address this heterogeneity, the default is designed to put those who stay with the default in the best position but to enable those with different preferences, more sophistication, greater resources, or other appropriate bases to opt out and choose whatever they prefer.[13] But we are concerned that preserving this opt-out in many contexts reflects more political or philosophical precommitment than empirical assessment of how to maximize social welfare.

If opt-outs are actually used (rather than ignored), we know too little about whether the "right" or "wrong" people are the ones fleeing the default. And to what extent will firms be able to lure the "wrong"

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[12] To be sure, BLE scholars do sometimes note in a sentence or two that more traditional mandates or regulation might be necessary, rather than simply better disclosure, shifts in default rules, and the other BLE tools. *See, e.g.*, Cass R. Sunstein, *The Storrs Lectures: Behavioral Economics and Paternalism*, 122 YALE L.J. 1826, 1845 (2013) ("But in imaginable cases, an economic incentive or a mandate might be the best solution; consider, for example, efforts to promote healthy foods or bans on texting while driving, if understood to protect drivers (as well as those whom they endanger)."). But it is rare to find a full cost-benefit analysis that compares BLE tools to the range of regulatory instruments, including regulation and mandates, and then shows that the BLE tools are optimal in light of the behavioral failings at issue.

[13] This is the standard majoritarian approach to defaults. The literature has considered other approaches as well, most notably penalty defaults. *See infra* note 86 and accompanying text.

people through this door and defeat the purpose of the opt-out? A full policy analysis might determine that behavioral limitations, combined with strategic behavior of firms, lead too many people to opt out who should not, making mandates better in terms of overall social welfare.

Conversely, in other contexts the opt-out option exists more in theory than in fact: perhaps for the very reasons behavioral findings identify, few people actually make use of the opt-out option. In such cases the opt-out formally exists, but in functional terms, the welfare consequences of the default are essentially the same as a direct mandate. From a welfarist perspective, then, the opt-out functions to preserve an *illusion of choice* that has little consequence. But if so, why would a welfarist policymaker preserve this illusion — and at what cost — rather than adopt direct mandates? What is gained, and what is lost?

The second categorical problem is that BLE does not properly evaluate, at times, how its own regulatory tools function. Many of these seemingly choice-preserving tools are not nearly as light touch as advertised. Consider default rules. Behavioral insights themselves powerfully suggest that people stay with the status quo for all the reasons so central to BLE in the first place: people are inertial, passive, or under the impression that the default must represent the right choice, whether it does or not. As a result, these defaults function in practice, for many individuals, as effective mandates.

We should thus analyze the substance of these default rules much as we would analyze explicit mandates. From a social welfare perspective, we should engage in a cost-benefit analysis (perhaps with the full process repertoire otherwise used) to determine the optimal level at which the default ought to be set. But BLE tends not to do so; its focus is on switching default rules from opt-in to opt-out or vice versa, rather than on working out the optimal level of this (in effect) mandatory obligation. And while BLE sometimes celebrates low opt-out rates as vindication — as if the fewer people who use the opt-out, the greater the vindication — such triumphalism is only sensible if this obligation is set at the optimal level. In important contexts, we show it is not. For example, because of this problem, the single most celebrated policy achievement of BLE — the move to automatic enrollment retirement savings plans — not only has failed to achieve the goal of increasing overall savings but might be actively undermining this goal.

Moreover, we offer reasons to be concerned that BLE will systematically tend to set nonoptimal default levels unless policymakers pay more attention to this issue. The presence of an opt-out escape valve can lull policymakers into a false sense that nudges can do no harm. By obscuring implicit mandates with a choice-preserving guise, policymakers might adopt policies, and already have, without careful analysis of their powerful effects.

Whatever the source of BLE's limitation to choice-preserving regulatory tools, this limitation can generate incomplete or counterproduc-

tive policy implications. Nothing is inherently wrong with political realism, but permitting assumed political constraints or philosophical precommitments to limit analysis of the full set of policy implications that follow from behavioral social science can hinder effective policymaking. To demonstrate these costs concretely, we focus on three of the most important behaviorally influenced areas for current public policy: the problem of undersaving for retirement in the United States; the breakdown in credit markets, including mortgage loans, that contributed to the recent financial crisis; and the environmental and energy problems that underlie global warming and energy independence issues. In each area, we show how stopping short of the full implications of behavioral social science can lead to ineffective or counterproductive policies.

Part I begins with a theoretical framework for incorporating behavioral insights into the standard neoclassical theory of regulation. This framework reveals the general limits of the policy analysis and prescriptions of BLE thus far. In the Parts that follow, we lay out concrete policy problems that exemplify, for different reasons, how behavioral insights suggest a more expansive research and policy agenda.

First, Part II tackles the policy area that represents one of the most heralded policy achievements of behavioral economics: retirement savings. We show that automatic enrollment in retirement savings plans — BLE's major contribution here — has functioned, in effect, as a poorly designed system of mandates. As a result, adoption of automatic enrollment has in practice *lowered* retirement savings for many workers and overall has likely lowered average retirement savings. Fuller acceptance of behavioral findings in this area leads to more complete policy analysis of whether to set a default rule or an express mandate, and if a default rule, the proper way to set it. Moreover, this fuller attention to behavioral limitations also leads to recommendations of more wholesale changes to the structure of government retirement savings policy.

Part III turns to the important consumer credit markets, which include the home loans that contributed to the worst financial crisis since the Great Depression. As BLE shows, these markets are riddled with the behavioral "failures" of consumers and with lenders that strategically design their contracts to exploit these failings. In response, the main prescription in BLE entails redesigned mandatory disclosures. But choice-preserving regulatory tools are particularly weak medicine, we argue, when firms have incentives to undermine consumer choice. Instead, the interaction of optimizing firms with nonoptimizing consumers might better suggest traditional regulatory tools, such as product regulation, as well as measures designed to lower the incentives of firms to exploit consumer mistakes.

Finally, Part IV considers a traditional market failure: environmental externalities. Here our challenge to BLE, based on its own behav-

ioral findings, is of a different sort. Social science has revealed important behavioral market failures that *interact* with the traditional market failures associated with, for example, pollution or greenhouse gas emissions. BLE work on issues such as green energy, fuel economy, and environmental regulation tends to focus on the behavioral market failures alone. This limitation misses the interactive effects of behavioral and traditional market failures and the implications of this interaction for proper choice among regulatory approaches to environmental problems. A more complete framework, which incorporates both behavioral and traditional market failures, generates policy recommendations beyond both those of neoclassical analysis and the "nudges" central to BLE analysis.

To be clear, our argument is not that choice-preserving regulatory tools such as default rules and disclosure can never be optimal. We are not arguing in general against these tools or in favor of others, such as regulations or mandates. We are arguing for a full comparison of the advantages and disadvantages of different regulatory instruments. In particular, from a welfarist perspective, there should be no presumption or precommitment in favor of choice-preserving regulatory options over others.

Our analysis engages BLE from an internal point of view. That is, for purposes of this Article we accept the general premises and assumptions of BLE, including its welfarist framework for analyzing optimal policy design. We thus put aside various external critiques that could be, and have been, mounted. Autonomy- or liberty-based political theories argue, for example, that these values should have priority over welfare maximization. Whatever our personal views about such theories and about the most appropriate general political philosophy for guiding government action (and we might differ in those views), this Article stays within BLE's own commitments. Similarly, one can question how BLE can remain welfarist if its underlying social science casts doubt on how we can ever know what people's "true" preferences are, once we leave the world of revealed-preference theory. Again, we largely leave these more profound normative challenges aside. Instead, we show that — taken on its own terms — BLE can lead to inappropriate policy unless the implications of behavioral social science are pursued more fully and completely.

Our critical engagement should not be taken to cast doubt on the promise BLE holds for improving the design of law and policy. We come not to bury BLE, but to push it even further.

I. BEHAVIORAL ECONOMICS AND THE LAW

Social scientists have systematically documented the many ways that human behavior differs from the rational behavior assumed by neoclassical economics. By incorporating more realistic models of hu-

man behavior based on these findings, the emerging field of BLE has the potential to improve dramatically the predictions and prescriptions of social-scientifically oriented legal scholars and policy-oriented social scientists.

In the neoclassical theory of regulation, the concept of market failure is central. If markets are complete and perfectly competitive, the competitive equilibrium implements an efficient outcome.[14] In this stylized model, the only role for government is redistribution. But various departures from these assumptions result in inefficient market outcomes — "market failures" — and create scope for government action to improve the allocation of resources.[15] Familiar types of market failure include externalities, asymmetric information, and market power.

Given a potential justification for government intervention, the question becomes how the government should intervene. Neoclassical economics provides a theoretical framework for assessing the consequences of alternative regulatory interventions that generates strong policy recommendations. To control negative externalities, some mix of taxes, liability rules, and assignment of property rights is prescribed.[16] Prescriptions to cure cases of asymmetric information include disclosure mandates, government production and dissemination of information, or even behavioral mandates (for example, the controversial individual coverage mandate in the Affordable Care Act).[17] To deal with natural monopolies, rate regulation or government ownership is prescribed.[18]

Importantly, the neoclassical model is premised on the assumption that consumers and firms rationally optimize their choices, given their preferences, information, and the incentives they face. Taxing an externality-producing activity at a rate equal to the marginal social harm of the activity results in efficient outcomes, under the neoclassical model, because the decision problem facing the relevant actors then

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[14] *See, e.g.*, ANDREU MAS-COLELL ET AL., MICROECONOMIC THEORY 326 (1995) (noting that the first fundamental welfare theorem states that the competitive allocation is Pareto optimal).

[15] *See, e.g.*, PAUL KRUGMAN & ROBIN WELLS, MICROECONOMICS 15 (2d ed. 2008).

[16] *See* William J. Baumol, *On Taxation and the Control of Externalities*, 62 AM. ECON. REV. 307, 307–08 (1972) (recommending taxes and fees as means of disincentivizing the generation of negative externalities).

[17] *See* Amitabh Chandra et al., *The Importance of the Individual Mandate — Evidence from Massachusetts*, 364 NEW ENG. J. MED. 293, 294–95 (2011) (noting that a health insurance mandate can reduce the adverse selection problem); Alan D. Mathios, *The Impact of Mandatory Disclosure Laws on Product Choices: An Analysis of the Salad Dressing Market*, 43 J.L. & ECON. 651, 672 (2000) (documenting that mandatory labeling rules forced sellers to reveal information about their products to consumers, who changed their choices in response).

[18] *See* ALFRED E. KAHN, THE ECONOMICS OF REGULATION 3 (1988) (noting that the "primary guarantor of acceptable performance" by natural monopolies is "direct governmental prescription of major aspects of their structure and economic performance").

mirrors the social decision problem of choosing efficient behavior. Crucially, this framework takes for granted that the private actors actually rationally solve that decision problem.

Enter behavioral economics. A large body of research has documented that people behave differently than the neoclassical theory assumes. For our purposes, two main types of deviations exist. First, people are only boundedly rational: they make mistakes in judgment and perception. Second, people have bounded willpower: they have trouble following through on rational plans to lose weight, for example, or to save more.[19]

Replacing the rational actor assumption of neoclassical economics with a more realistic behavioral assumption changes the normative theory of regulation in several ways. First, it creates a new category of market failures — behavioral market failures — that stem from individuals failing to optimize rationally in their decisionmaking. A classic example is the failure to save appropriately for retirement due to cognitive errors and self-control problems. Government intervention in response is controversial, for it raises issues of the appropriateness of paternalism and the value of autonomy even when people exercise their autonomy in self-destructive ways.

Second and conversely, behavioral findings also raise the possibility that some traditional market failures might not be so severe after all. Adverse selection, for example, results from individuals rationally optimizing based on their private information. If the choice to buy insurance, say, is based on some nonrational heuristic rather than rational optimization, then the market failure might be mitigated or even disappear.

Third, behavioral economics changes the predicted consequences of traditional forms of regulatory intervention. For example, as already mentioned, market-based tools that depend on shaping incentives are premised on actors optimizing in response. Bounded rationality, however, can result in actual behavior departing from the neoclassical prediction in systematic, identifiable ways.

Finally, behavioral economics identifies a new class of regulatory tools that the neoclassical model predicts will have little or no effect but that evidence shows can have large effects. Most famously, default rules for participation in retirement savings plans should have little effect under the neoclassical model — transaction costs of opting in or

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[19] *See* Matthew Rabin, *Psychology and Economics*, 36 J. ECON. LITERATURE 11 (1998) (surveying the evidence of departures from the neoclassical rational actor assumption). *See generally* S. Mullainathan & R.H. Thaler, *Behavioral Economics*, *in* 26 INTERNATIONAL ENCYCLOPEDIA OF THE SOCIAL & BEHAVIORAL SCIENCES 1094 (Neil J. Smelser & Paul B. Baltes eds., 2001) (discussing the bounds of human nature).

opting out are negligible — yet experience shows they have significant effects on participation.[20]

With this simple framework in place, we can now situate existing scholarship that applies behavioral social science to policy analysis, which includes work by both legal scholars and social scientists. To date, the work in BLE has been surprisingly circumscribed. Two influential law review articles published ten years ago, written by teams of behavioral economists and legal scholars, have framed the range of regulatory options the field has focused on ever since.[21]

Professor Colin Camerer et al. urge the adoption of "asymmetric paternalism" policies, like default rules and disclosure, that improve outcomes for those who make mistakes but avoid imposing costs on any *homo economicus* living among us mere *homo sapiens*.[22] They argue that these light-touch regulatory tools should appeal to "those (particularly economists) prone to rigid antipaternalism" by providing a "careful, cautious, and disciplined approach."[23]

Professors Cass Sunstein and Richard Thaler develop a similar regulatory philosophy, which they dub "libertarian paternalism." They advocate paternalistic policies that, they assert, do not limit choice but nonetheless improve outcomes. The two key policy tools are again default rules and mandatory disclosure. The libertarian aspect of this approach, they argue, "lies in the straightforward insistence that, in general, people should be free to opt out of specified arrangements if they choose to do so."[24] This approach reached a much broader audience in Thaler and Sunstein's bestseller *Nudge*,[25] in which they self-consciously aspire to fashion libertarian paternalism into a "real Third Way" for policy with broad appeal to both liberals and conservatives.[26]

The "soft paternalism" approach pioneered in these works has become the dominant modus operandi in BLE in both work by legal scholars and in prescriptive work by behavioral economists. Two features characterize this approach. First, it focuses largely on behavioral market failures, hence the "paternalism" terminology adopted by both camps in those early articles. Second, policy analysis in BLE has largely restricted the set of potential regulatory tools considered to this

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[20] *See, e.g.*, Brigitte C. Madrian & Dennis F. Shea, *The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior*, 116 Q.J. ECON. 1149, 1184 (2001).

[21] Camerer et al., *supra* note 8; Cass R. Sunstein & Richard H. Thaler, *Libertarian Paternalism Is Not an Oxymoron*, 70 U. CHI. L. REV. 1159 (2003).

[22] Camerer et al., *supra* note 8, at 1212.

[23] *Id.* As another justification for their minimalist approach, they point out that behavioral economics "is in an early stage of development" and that caution is therefore warranted. *Id.* at 1214.

[24] Sunstein & Thaler, *supra* note 21, at 1161.

[25] RICHARD H. THALER & CASS R. SUNSTEIN, NUDGE (2008) [hereinafter NUDGE].

[26] *Id.* at 252.

new class of tools that the neoclassical model misses. The field focuses on employing these tools to minimize the individual mistakes that create behavioral market failures and to mitigate their negative consequences without reducing choice or harming the rational. The focus is on helping people help themselves.

Soft paternalism is presented in most of this work as optimal policy on the merits. It is possible, though, to imagine second-order justifications for soft tools rather than mandates that focus on "government failure." Either because of behavioral limitations of the government decisionmakers themselves, or because of public-choice concerns about the potential for government capture by rent-seeking concentrated interests, nudges might still be better than traditional regulatory tools once one takes these risks of governmental failure into account.

But BLE does not typically justify its preference for "new" over more "traditional" regulatory instruments on these government-failure grounds. If this second-order government-failure reasoning were to become a primary justification for soft regulatory tools, we would need a critique not of the political economy of traditional instruments standing alone, but a comparative political economy: are there systematic reasons to believe regulators adopting nudges are less likely to reach optimal outcomes than regulators adopting traditional regulation? Indeed, this is a debatable question. Soft paternalist measures run the risk of being less visible than more traditional regulations and mandates, which could make the political dynamics more prone to capture rather than less (or the other way around); soft measures that emerge from agencies might well be less subject to deliberative-process measures designed to enhance sound outcomes — such as notice-and-comment rulemaking and cost-benefit review.

Moreover, while government actors might get the substance wrong when they craft regulations or mandates, either because they lack sufficient information — the famous Hayekian "knowledge problem"[27] — or because of their own behavioral biases, those risks do not disappear just because government actors are setting defaults. Indeed, the danger might be greater: the illusion that the opt-out option provides a safety valve should the default not be optimal might cause policymakers to pay less attention to choosing the level at which to set the default rule than they would to choosing the level of a direct mandate — even though defaults function, in practice, much like mandates.

But we put to the side here these second-order issues about whether the risks of government failure argue for mandates over nudges or the opposite. Because BLE is largely presented as offering optimal policy purely on the merits (as opposed to being a second-best choice

[27] F.A. Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519 (1945).

in light of the risk of government failure), our focus is on revealing the limitations to BLE's treatment of behavioral science at this first-order level of optimal policy design.

Our framework reveals the limits within the structure of the BLE approach. In particular, on political grounds or due to philosophical commitments, the dominant approach to BLE stops short of considering regulatory responses to behavioral market failures that do not preserve choice or that could impose costs on rational actors. These excluded regulatory responses include essentially all the traditional regulatory instruments, such as mandates and taxes. Moreover, somewhat ironically, the nudges recommended by BLE scholars are often not as light touch as advertised. In many cases these seemingly choice-preserving tools function as effective mandates for those whose choices they alter, yet work in BLE has generally not subjected these tools to sufficient analysis to evaluate their effects. Finally, the soft paternalism approach fails to pursue fully the implications of behavioral economics for the optimal response to traditional market failures. Either traditional market failures are not considered at all or, if they are, only nudges are analyzed as potential new responses.

A more complete account of the implications of behavioral economics would include analysis of policy tools that restrict freedom of choice as well as better analysis of nudges that preserve the illusion of choice but operate as effective mandates. Indeed, by documenting the failure of individual choice, behavioral research often points toward more interventionist policy recommendations than the standard BLE tools of disclosure, shifts in default rules, and the like. Moreover, a richer account would consider more fully the implications of behavioral findings for policy in response to traditional market failures.

To be clear, BLE is an enormous, fast-growing field, and not every piece of work is subject to the critique we develop here. Some economists and legal scholars, for example, have applied insights from behavioral economics to analyze and justify policy tools that restrict choice.[28] But as the concrete policy studies that follow demonstrate, much of the most influential social science and legal work applying behavioral economics to policy rests on a strong commitment to regulatory tools that "preserve choice" — with policy consequences we find troubling. We now show this by turning in detail to three of the most important public policy issues of our era, all of which BLE has sought

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[28] *See, e.g.*, Tom Baker & Peter Siegelman, *"You Want Insurance with That?" Using Behavioral Economics to Protect Consumers from Add-On Insurance Products*, 20 CONN. INS. L.J. 1 (2013); Paul Heidhues & Botond Kőszegi, *Exploiting Naïvete About Self-Control in the Credit Market*, 100 AM. ECON. REV. 2279 (2010). Moreover, there are many public policies currently in place that restrict choice, in some cases justified by the failure of individual rationality. Social Security is a prominent example. *See infra* section II.B, pp. 1611–14.

to influence: retirement savings, consumer credit, and environmental protection.

II. RETIREMENT SAVINGS

Federal government policy since the 1930s has reflected the judgment that many people do not save enough for retirement. Starting with the Social Security Act of 1935 and moving to the creation of various tax-subsidized retirement savings accounts such as Individual Retirement Accounts (IRAs) and 401(k)s, federal policy has required or incentivized people to save more for their retirement.

This longstanding policy goal of retirement security was achieved for many decades by supplementing private savings with a mix of Social Security and employer-provided defined benefit (DB) pensions. Neither Social Security nor private DB pensions require individuals to choose whether (or at what level) to participate or to make significant decisions in managing their retirement assets as they accumulate benefits during their working years. Moreover, these retirement schemes take the form of a life annuity during retirement, which both provides insurance against longevity risk and simplifies financial decisions in retirement, as retirees do not have to worry about spending their savings too rapidly or slowly. In other words, these are largely choice-denying or choice-limiting policies.

Beginning in the late 1970s, however, and accelerating throughout the early 1980s, the United States underwent a series of market, demographic, and regulatory shifts that led to the steady decline of DB plans and the rapid proliferation of defined contribution (DC) plans.[29] This shift to DC plans has imposed dramatically greater burdens of sound decisionmaking on individuals with respect to three dimensions of the retirement savings problem: the appropriate rate of savings, the appropriate investment choices, and the appropriate rate of post-retirement dissavings. In response, improving individual decisionmaking with respect to DC plans has been one of the primary focal points of BLE. Moreover, by advocating various switches in default rules, many of which have been adopted, BLE lays claim to retirement savings as perhaps its greatest policy-reform success.

To understand how government retirement policies ought to be structured, a theory of the precise mechanisms that lead individuals to have insufficient financial resources in retirement is essential. Two

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[29] *See* U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-97-1, PRIVATE PENSIONS: MOST EMPLOYERS THAT OFFER PENSIONS USE DEFINED CONTRIBUTION PLANS 4–6 (1996); John A. Turner & Gerard Hughes, *Large Declines in Defined Benefit Plans Are Not Inevitable: The Experience of Canada, Ireland, the United Kingdom, and the United States* 31 (Pensions Inst., Discussion Paper No. PI-0821, 2008), *archived at* http://perma.cc/K9SC-HB33.

types of theories have been offered: (1) neoclassical market-failure theories and (2) "paternalistic" or behavioral market-failure theories. Neoclassical justifications posit collective action obstacles that justify government intervention. Paternalistic justifications assume that the defects reside not at the level of markets but at the level of individual choice.

Not surprisingly, BLE relies on behavioral failures and therefore paternalistic justifications to explain proper public policy regarding retirement financing. Yet when it comes to BLE's specific policy recommendations concerning the particular forms retirement policies ought to take, we seek to demonstrate that BLE loses track of the paternalistic justifications that require these government policies in the first place — or fails to analyze fully the policy implications of those justifications. Because BLE is precommitted to consensual policy recommendations, and to presenting itself as a new "third way" on public policy in general, it endorses soft paternalism in an area, like retirement savings, where fully working through the findings of behavioral social science suggests a greater role for non-BLE tools, including mandates. Moreover, because of BLE's commitment to freedom of choice, it fails to analyze properly the implicit mandates embedded in its preferred defaults.

BLE's principal recommendation is to switch DC plans from opt-in to opt-out programs, thereby harnessing individual inertia to increase savings. This approach is commonly cited as the most successful application of behavioral economics for public policy,[30] and employers have begun adopting it en masse, partly in response to changes to federal law designed to encourage this approach.[31] But we identify at least three serious failings or limitations to BLE's approach in this area.

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[30] *See, e.g.*, William J. Congdon et al., *Behavioral Economics and Tax Policy*, 62 NAT'L TAX J. 375, 375–76 (2009) ("The most celebrated example [of applying behavioral economics to public policy] is the use of defaults in retirement savings: policies encouraging firms to automatically enroll their workers in 401(k) plans, rather than waiting for individuals to sign up on their own, seem to encourage participation and savings in those plans . . . ."); Daniel Kahneman, *Foreword* to THE BEHAVIORAL FOUNDATIONS OF PUBLIC POLICY, at vii–viii (Eldar Shafir ed., 2013) (citing the success of automatic enrollment); Joshua D. Wright & Douglas H. Ginsburg, *Behavioral Law and Economics: Its Origins, Fatal Flaws, and Implications for Liberty*, 106 NW. U. L. REV. 1033, 1056 (2012) ("[T]he most frequently discussed example of a behavioral intervention invoking choice architecture is default enrollment in employer-sponsored savings plans.").

[31] Among companies surveyed by the Plan Sponsor Council of America in its 2010 survey, more than 41% of plans that allow employee elective deferrals reported the use of an automatic enrollment feature. PLAN SPONSOR COUNCIL OF AM., 54TH ANNUAL SURVEY OF PROFIT SHARING AND 401(K) PLANS 60 (2011) [hereinafter PSCA 2010]. The comparable number in the 2005 survey was 16.9% of plans. PROFIT SHARING/401K COUNCIL OF AM., 49TH ANNUAL SURVEY OF PROFIT SHARING AND 401(K) PLANS 38 (2006).

First, BLE is so committed to preserving freedom of choice (or, as we see it, the illusion of choice) that it does not fully recognize how much its default rules in this area function as mandates. Because these implicit mandates have been obscured by a seemingly choice-preserving guise, they have not been designed with the level of care that would typically be used in crafting an explicit mandate. BLE does not devote much direct analysis to determining the appropriate levels at which these defaults should be set; it is more focused on binary issues such as whether participation should be opt in or opt out. And this turns out to be a profound problem. Because of this limitation in focus, the much-heralded automatic enrollment approach appears not only to have failed to address meaningfully the retirement savings problem but also to have exacerbated it. Perversely, in practice these programs appear to *reduce* overall retirement savings, even as they raise the rates of participation.[32] The simple reason is that the default contribution rates in automatic enrollment plans are typically set at 3%, and many employees who would have contributed more than 3% under an opt-in plan instead stick with the default.[33] This problem is not just a minor technical failing, for it reveals a broader structural need to think through more fully the actual implications of behavioral research, lest misguided or even counterproductive policy be adopted.

Second, because BLE is precommitted to preserving choice and avoiding mandates, it stops short of examining certain issues or proposing certain options that behavioral science might suggest. For example, BLE is committed to preserving the choice to opt out but does not examine the reasons people choose to opt out. Yet the evidence that exists suggests that those who opt out do so for the kind of "irrational reasons" behavioral science identifies as so pervasive in this arena. If so, the optimal policy might be mandatory participation without opt-out "freedoms." Similarly, BLE is committed to people having freedom of choice to design their retirement investment portfolios. Although empirical evidence strongly suggests that expert-designed portfolios perform far better, this sounds like heavy-handed government control. Thus, even in the face of this evidence, BLE remains adamant that choice must be preserved. Nor does BLE consider requiring (or creating greater incentives for employers) to, in effect, mandate savings by workers by contributing to their employees' DC plans, a route which has successfully raised retirement savings rates in other countries.

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[32] *See infra* pp. 1623–24.

[33] Madrian & Shea, *supra* note 20, at 1162–64.

Third, because BLE works from within choice-preserving retirement policies, such as 401(k)s and IRAs, it typically does not step back and ask whether the kinds of tax incentives on which these policies rely actually work in the first place. The government subsidizes these voluntary plans to the tune of around $72 billion in annual tax expenditures. This whole venture is based on the assumption that individuals will respond rationally to changed tax incentives regarding retirement savings. But as we discuss below, the best evidence indicates, stunningly, that every dollar of tax expenditure on retirement savings increases total savings by only one cent. If so, that's an enormous waste of public resources. BLE's limited focus on voluntary programs disables it from a comparative analysis of tax subsidies versus other policy options, such as preserving or increasing Social Security benefits. Reducing the tax subsidies by one-third, for example, would be equivalent to the cuts in Social Security benefits that President Obama endorsed in his 2014 budget.[34]

In our view, a common theme links all these limitations. Real tension exists between the social science foundations of BLE and its political aspirations. A combination of implicit judgments about the politically possible and a philosophical commitment to freedom of choice leads BLE to avoid certain options, to be less self-critical of some of its recommendations as evidence suggests it should be, and to fail to pursue fuller analysis of the range of policies the underlying behavioral insights might suggest.

None of these problems are inherent to BLE. Its agenda can be expanded and modified to incorporate and address these concerns. But as our analysis of the retirement savings problem in this Part shows, BLE currently trims the sails of its own behavioral insights.

A. The Neoclassical Account of the Policy Problem

The neoclassical account of retirement economics begins with the assumption that individuals will be rational about their life-cycle work and consumption patterns. Throughout their working lives, individuals are assumed to save and consume in a manner designed to maintain their preferred levels of consumption both before and during retirement.[35]

In their search for a traditional market failure that would justify retirement programs, neoclassical economists have fixated primarily on

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[34] Jackie Calmes, *Obama Budget Opens Rift for Democrats on Social Benefits*, N.Y. TIMES, Apr. 10, 2013, http://www.nytimes.com/2013/04/11/us/politics/obama-budget-seeks-deal-in-mix-of-cuts-and-spending.html, *archived at* http://perma.cc/82SW-Y7E4.

[35] *See, e.g.*, DAVID ROMER, ADVANCED MACROECONOMICS 48, 331 (2d ed. 2001) (describing the Permanent-Income Hypothesis in which individuals spread consumption across time periods of their lives in order to maximize utility given certain constraints).

adverse selection in the private annuities market[36]: because individuals have greater knowledge of their probable longevity than insurers can obtain, annuity purchasers will tend to be those who live longer, causing insurers to lower payouts, which then pushes more people out of the market.[37] Thus, a private annuities market would suffer from the same downward spiral that potentially affects unregulated private health insurance markets.

Social Security is, of course, a mandatory program. This mandate addresses adverse selection by requiring universal participation.[38] A universal and mandatory public system is designed to insure everyone and to be actuarially fair in the aggregate. Once the adverse selection problem is corrected through this government mandate, individuals are still assumed to be rational deciders about other aspects of retirement planning. Or so the neoclassical story goes.

B. The Behavioral Account of the Policy Problem

The neoclassical market failure in the annuities market played no role in the actual creation of Social Security. Indeed, even many economists find this economic justification an unconvincing ex post attempt to rationalize Social Security on neoclassical grounds. As Professor Alan Blinder wryly observes, this attempt does not "help[] much in explaining why social security programs were actually established. It does, however, make economists feel better."[39]

Rather, federal retirement savings policy has always been premised largely on paternalistic grounds. Professor Laurence Kotlikoff explains

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[36] *See* Alan S. Blinder, *Why Is the Government in the Pension Business?*, *in* SOCIAL SECURITY AND PRIVATE PENSIONS 17, 19 (Susan M. Wachter ed., 1988) ("If people have better information about their life expectancies than insurance companies do, companies offering to sell individual life annuities will find that their customers have better longevity than the population as a whole. If so, policies offered at what appear to be actuarially fair premiums will bring losses to the companies."); Zvi Eckstein et al., *Uncertain Lifetimes and the Welfare Enhancing Properties of Annuity Markets and Social Security*, 26 J. PUB. ECON. 303, 325 (1985); Martin Feldstein & Jeffrey B. Liebman, *Social Security*, in 4 HANDBOOK OF PUBLIC ECONOMICS 2245, 2252 (Alan J. Auerbach & Martin Feldstein eds., 2002); R. Glenn Hubbard & Kenneth L. Judd, *Social Security and Individual Welfare: Precautionary Saving, Borrowing Constraints, and the Payroll Tax*, 77 AM. ECON. REV. 630, 632 (1987) (noting the historic work of Michael Rothschild and Joseph Stiglitz on the problem of adverse selection and asymmetries of information in insurance markets); Laurence J. Kotlikoff, *Justifying Public Provision of Social Security*, 6 J. POL'Y ANALYSIS & MGMT. 674, 676–77 (1987).

[37] Indeed, one study of the limited annuities market existing in the United States found that annuity purchasers had a 10% higher probability of living from sixty-five to seventy-five, compared to the population generally. *See* Benjamin M. Friedman & Mark J. Warshawsky, *The Cost of Annuities: Implications for Saving Behavior and Bequests*, 105 Q.J. ECON. 135, 141 (1990).

[38] *See* Kotlikoff, *supra* note 36, at 677; *see also* Blinder, *supra* note 36, at 20 (noting that adverse selection rationalizes the mandatory nature of Social Security).

[39] Blinder, *supra* note 36, at 21. Blinder further notes that "[r]edistributive goals, which can hardly be left to the market, take us farther in understanding social security." *Id.* at 31.

that "[p]aternalistic concern appears to underlie much of the government's intervention in household saving and insurance decisions" due to the "belief that, left to their own devices, a sizeable fraction of households would inadequately save and insure."[40] Though sometimes unstated, this paternalistic account is the best explanation for why governments adopt retirement policies of whatever form, including Social Security.

Determining whether people save too little for retirement requires a normative judgment, external to individuals' revealed preferences, of how much they *ought* to be saving. That question is not as straightforward as it might seem. Should people save enough so that they have the same consumption postretirement as preretirement (in their average year or in their last years before retirement?), or should they plan to consume more in retirement (because they have more leisure time) or less (because this leisure time enables them to do things for themselves they had to pay others to do while working)?

The weight of the evidence shows that many households do save too little. Many households accumulate too little savings to maintain their consumption in retirement; consequently, they experience a sharp drop in consumption after retirement.[41] A majority of working households, 51%, is at risk of being unable to maintain their standard of living in retirement.[42] Indeed, nearly two-thirds of households with heads aged fifty-five to sixty-four have retirement account balances less than their annual income.[43] As we noted above, in principle a drop in consumption at retirement could be consistent with optimal savings decisions. But rational life-cycle factors fail to explain observed variation in the drop in consumption at retirement, which supports the conclusion that many Americans undersave.[44]

Economists have suggested a variety of mechanisms that distort individual choice about retirement savings. These distortions can be crudely classified as ones of bounded willpower (people save too little or spend down too quickly, despite believing that they ought to behave differently) and ones of bounded rationality (people lack the cognitive ability to calculate the optimal decision).

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[40] Kotlikoff, *supra* note 36, at 675.

[41] B. Douglas Bernheim et al., *What Accounts for the Variation in Retirement Wealth Among U.S. Households?*, 91 AM. ECON. REV. 832, 846 (2001); *see also* James M. Poterba et al., *Were They Prepared for Retirement? Financial Status at Advanced Ages in the HRS and AHEAD Cohorts*, *in* INVESTIGATIONS IN THE ECONOMICS OF AGING 21, 38 (David A. Wise ed., 2012).

[42] ALICIA H. MUNNELL ET AL., CTR. FOR RET. RESEARCH AT BOS. COLL., ISSUE BRIEF NO. 12-12, NATIONAL RETIREMENT RISK INDEX: HOW MUCH LONGER DO WE NEED TO WORK? 1 (2012), *archived at* http://perma.cc/VPP4-YNXW.

[43] NARI RHEE, NAT'L INST. ON RET. SEC., THE RETIREMENT SAVINGS CRISIS 1 (2013).

[44] Bernheim et al., *supra* note 41, at 833.

As evidence of bounded willpower, many people report that they would like to save more than they do.[45] One explanation for this is that workers apply a higher discount rate over shorter time horizons than they do over the long run. Such "hyperbolic discounting" produces time-inconsistent behavior — people want to save more, but not until next year, and when next year arrives they again want to save more, but not until next year, and so on.[46] Data on savings and consumption decisions is consistent with the existence of such a self-control problem. People are so inconsistent about their preferences over time that they apply a 40% short-term annualized discount rate but a 4% long-term annualized discount rate, according to the leading study.[47] Moreover, households with DB pensions have much higher retirement wealth on average than households that must choose their own savings rates — consistent with the existence of self-control problems.[48]

Voluminous evidence of bounded rationality in this area also exists. Consider surveys that test basic (failures of) understanding of compound interest: "Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow: more than $102, exactly $102, less than $102?"[49] Only two-thirds of respondents answered the question correctly.[50] More than half of surveyed people did not know that holding a single stock is riskier than holding a stock mutual fund.[51] Only 40% of respondents "could venture a guess about their expected Social Security benefits."[52] And fewer than half of workers reported that they or their spouse have tried to calculate how much money they will need to save so that they can live

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[45] In one recent survey, two-thirds of respondents stated that they should be saving more for retirement. *See* James J. Choi et al., *Defined Contribution Pensions: Plan Rules, Participant Choices, and the Path of Least Resistance*, *in* 16 TAX POLICY AND THE ECONOMY 67, 70 (James M. Poterba ed., 2002).

[46] David Laibson, *Golden Eggs and Hyperbolic Discounting*, 112 Q.J. ECON. 443, 445 (1997) ("Hyperbolic discount functions are characterized by a relatively high discount rate over short horizons and a relatively low discount rate over long horizons.").

[47] David Laibson et al., *Estimating Discount Functions with Consumption Choices over the Lifecycle* 4 (Nat'l Bureau of Econ. Research, Working Paper No. 13314, 2007), *archived at* http://perma.cc/V965-2LQP.

[48] Alan L. Gustman & Thomas L. Steinmeier, *Effects of Pensions on Savings: Analysis with Data from the Health and Retirement Study*, 50 CARNEGIE-ROCHESTER CONF. SERIES ON PUB. POL'Y 271, 316–17 (1999).

[49] Annamaria Lusardi & Olivia S. Mitchell, *Financial Literacy and Planning: Implications for Retirement Wellbeing* 4 (Nat'l Bureau of Econ. Research, Working Paper No. 17078, 2011), *archived at* http://perma.cc/V965-2LQP.

[50] *Id.* at 6. The answer is more than $102.

[51] Annamaria Lusardi & Olivia S. Mitchell, *Baby Boomer Retirement Security: The Roles of Planning, Financial Literacy, and Housing Wealth*, 54 J. MONETARY ECON. 205, 215 (2007).

[52] *Id.* at 214.

comfortably in retirement.[53] Furthermore, a large literature documents systematic mistakes in investment choices.[54] To reconcile these findings with neoclassical assumptions would be a heroic task.

C. The BLE Approach to Retirement Savings Policy

Because Social Security offers so little scope for choice, BLE has largely neglected it.[55] Instead, BLE has focused on improving choices within tax-subsidized DC retirement plans.[56] BLE has offered two central recommendations. The first is to change the default rules within these plans to put the forces of inertia on the side of greater savings. These mechanisms include automatic enrollment plans, which require individuals to participate unless they affirmatively opt out,[57] and Save More Tomorrow–type accounts, which automatically increase savings contributions over time unless the individual opts out.[58] The second recommendation is to improve the choice architecture of DC plans to

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[53] RUTH HELMAN ET AL., EMP. BENEFIT RESEARCH INST., ISSUE BRIEF NO. 384, THE 2013 RETIREMENT CONFIDENCE SURVEY 22 fig.26 (2013).

[54] Research indicates that individuals have a hard time constructing a well-diversified, low-cost portfolio. For example, Professors Shlomo Benartzi and Richard Thaler show that many participants in DC plans follow the "1/*n* rule," dividing their contributions evenly among funds included in the plan. Shlomo Benartzi & Richard H. Thaler, *Naive Diversification Strategies in Defined Contribution Saving Plans*, 91 AM. ECON. REV. 79, 79–80 (2001). Furthermore, employees often overinvest in their employers' stock. *See* Shlomo Benartzi et al., *The Law and Economics of Company Stock in 401(k) Plans*, 50 J.L. & ECON. 45, 55 (2007); James J. Choi et al., *Are Empowerment and Education Enough? Underdiversification in 401(k) Plans*, 2 BROOKINGS PAPERS ON ECON. ACTIVITY 151, 152 (2005). When choosing how to invest, investors commonly fail to give sufficient consideration to the fees charged by alternative mutual funds. *See, e.g.*, Warren Bailey et al., *Behavioral Biases of Mutual Fund Investors*, 102 J. FIN. ECON. 1, 3–5 (2011) (summarizing behavioral biases that lead investors to irrationally invest in high-fee mutual funds, including overconfidence, local bias, and narrow framing); Brad M. Barber et al., *Out of Sight, Out of Mind: The Effects of Expenses on Mutual Fund Flows*, 78 J. BUS. 2095, 2097 (2005) (observing that mutual fund investors are more aware of salient, front-end-load fees than ongoing fees); James J. Choi et al., *Why Does the Law of One Price Fail? An Experiment on Index Mutual Funds*, 23 REV. FIN. STUD. 1405, 1429–30 (2010) (concluding that variation in nonportfolio services, such as high customer service quality, cannot explain the range of mutual fund fees).

[55] *See, e.g.*, Peter R. Orszag et al., *Preface* to AGING GRACEFULLY, at xi (Peter R. Orszag et al. eds., 2006) (summarizing a set of BLE policy recommendations for improving retirement security but stating that "[this book] does not address any issues relating to Social Security reform").

[56] *See, e.g.*, *id.*; *see also* John Y. Campbell et al., *Consumer Financial Protection*, 25 J. ECON. PERSP. 91, 106 (2011) ("[M]uch of the focus [of the behavioral literature on retirement savings] has been on what further regulation might be desirable within the current defined contribution system.").

[57] *See, e.g.*, William G. Gale et al., *The Automatic 401(k): A Simple Way to Strengthen Retirement Savings*, *in* AGING GRACEFULLY, *supra* note 55, at 19–20; Sunstein & Thaler, *supra* note 21, at 1172–73.

[58] *See generally* Richard H. Thaler & Shlomo Benartzi, *Save More Tomorrow™: Using Behavioral Economics to Increase Employee Saving*, 112 J. POL. ECON. S164 (2004) (proposing the Save More Tomorrow plan, under which "people commit in advance to allocating a portion of their future salary increases toward retirement savings," *id.* at S164).

help lead people to wiser investment choices, while at the same time making sure to preserve wide scope for individual choice.[59]

This BLE policy reform program was ultimately realized in the Pension Protection Act of 2006[60] (PPA). The law encourages employers to adopt automatic enrollment 401(k) plans by shielding them from fiduciary liability for plans that automatically enroll employees and default them into an investment option that meets certain regulatory requirements.[61] Moreover, the law provides automatic enrollment plans with a new safe harbor from ERISA's nondiscrimination rules.[62]

The process of enacting the PPA nicely illustrates the political appeal of BLE. Peter Orszag and Mark Iwry of the Retirement Security Project took the lead in synthesizing the behavioral literature that documents the effects of automatic enrollment into a series of policy proposals and in translating them into legislation.[63] The choice-preserving tools utilized in the PPA had broad appeal to both liberals and conservatives, leading Orszag to quip that automatic enrollment "had become like apple pie on Capitol Hill — everyone was for it."[64]

Today the PPA is commonly hailed as a great success in applying behavioral economics to improve public policy[65] and as "an example of good choice architecture."[66] And enthusiasm among policymakers for using default rules to improve retirement savings choices continues unabated: the Obama Administration's 2014 budget includes a proposal to extend the automatic enrollment approach by requiring certain employers to provide a new automatic enrollment IRA that would default employees into contributing to an individual retirement account.[67]

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[59] *See, e.g.*, Shlomo Benartzi et al., *Choice Architecture and Retirement Savings Plans*, *in* THE BEHAVIORAL FOUNDATIONS OF PUBLIC POLICY, *supra* note 30, at 252; William G. Gale & J. Mark Iwry, *Automatic Investment: Improving 401(k) Portfolio Investment Choices*, *in* AGING GRACEFULLY, *supra* note 55, at 33.

[60] Pub. L. No. 109-280, 120 Stat. 780 (codified as amended in scattered sections of 26 and 29 U.S.C.); *see also* Benartzi et al., *supra* note 59, at 261 ("We believe that the PPA is an example of good choice architecture.").

[61] *See* 29 U.S.C. § 1104(c)(5) (2012); 29 C.F.R. § 2550.404c-5 (2013).

[62] I.R.C. § 401(k)(13) (2012).

[63] John Beshears et al., *Public Policy and Saving for Retirement: The Autosave Features of the Pension Protection Act of 2006*, *in* BETTER LIVING THROUGH ECONOMICS 274 (John J. Siegfried ed., 2010).

[64] *Id.* at 287 (quoting Interview with Peter Orszag (July 3, 2007)).

[65] *See, e.g.*, SUNSTEIN, *supra* note 1, at 105 ("In 2006 Congress passed, and President Bush signed, the Pension Protection Act, which draws directly on behavioral findings by encouraging employers to adopt automatic enrollment plans. . . . The result? Countless Americans will have more money in retirement, when they are most likely to need it.").

[66] Benartzi et al., *supra* note 59, at 261.

[67] OFFICE OF MGMT. & BUDGET, FISCAL YEAR 2014 BUDGET OF THE U.S. GOVERNMENT 127 (2013), *archived at* http://perma.cc/F4NU-58NF.

D. The Limits of the BLE Approach

How do these policies and the analysis that underlies them stack up against the nature of the problem and the behavioral failures that BLE itself identifies?

The key issue in retirement policy is how seriously to take behavioral failures: how much to rest these policies on a foundation of individual choice. The precommitments of BLE on this critical question lead it to ground its recommendations in an illusion of choice, but the recommended policies function as implicit mandates for many individuals. This reliance on illusion reflects the ways in which BLE is riven between its political ambitions and its commitment to behavioral realism. The result has been a set of policies that might well have exacerbated the retirement savings problem. Furthermore, the BLE approach does not reflect how profoundly modern tax subsidies for retirement savings have failed to achieve their aims. The social-scientific findings of behavioral work should make this failure unsurprising. A more clear-eyed acceptance of behavioral failures in retirement savings points toward different, more dramatic policy reforms.

1. The Illusion of Choice: Default Rules as Poorly Designed Mandates. — The BLE approach to improving behavior within DC plans relies on policy tools that superficially preserve choice. For the political aspirations of BLE, it is important to present its recommendations as consensual compromises that preserve private choice but simply inform and structure choice in more effective ways. This is the core impetus behind the rhetoric that presents BLE as nudges, soft paternalism, and the like. The intended contrast here is with "older" forms of government mandates or "command-and-control" impositions through legislation and regulation. To be sure, BLE proponents mock an approach to policy based on what they call the "mantra" of Just Maximize Choices.[68] They are not libertarian to that extent. But the reform agenda of BLE itself could fairly be described as Just Maximize Choices Presented in the Right Way.

However, BLE often does more to preserve the *illusion* of choice than to preserve meaningful choice for the many individuals affected by the seemingly light-touch tools it employs. A more realistic explanation for why these tools affect behavior is that, for many, they actually function as effective mandates.

Take the single most celebrated policy recommendation of BLE in the retirement savings area (and more generally): the resetting of default rules and practices to achieve higher savings rates. Conventional DC plans require people to opt in to enroll. Some of the classic behavioral studies in this area reveal the dramatic effects of shifting the de-

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[68] NUDGE, *supra* note 25, at 155.

fault rule to automatic enrollment with the option of disenrolling — a shift to opt-out savings schemes from opt-in ones. In the standard neoclassical account, an individual's level of savings should not be affected by whether he or she must opt in or opt out of a savings program.[69] But behavioralists have convincingly demonstrated the powerful consequences of where the default is set. In a famous study of a company that adopted automatic enrollment, Professor Brigitte Madrian and Dennis Shea found that 86% of a cohort of newly hired employees was enrolled in the company's 401(k) under automatic enrollment.[70] In contrast, for those under the prior and more conventional opt-in approach, the comparable figure was only 37%.[71] For longer-tenured employees under the opt-in scheme, participation rates were much higher, exceeding 80% for those with greater than 10 years of tenure.[72] Hence the effect on participation is largely on the *timing* of enrollment — automatic enrollment results in employees enrolling much earlier in their tenure.

But what should we make of that powerful finding? The standard interpretation of automatic enrollment effects is that the increase in initial participation rates stems from a group of workers who want to save but procrastinate and fail to take prompt action to enroll under an opt-in regime.[73] Under this interpretation, automatic enrollment does not reduce freedom of choice or impose costs on anyone; it only nudges procrastinators to save more, and hence is viewed as an effective policy for improving savings decisions. William Gale, Mark Iwry, and Peter Orszag reflect this view in *Aging Gracefully*, a BLE-inspired retirement policy manifesto proposing many of the policies ultimately enacted in the PPA:

> It is worth stressing that none of these automatic or default arrangements are coercive. Workers would remain free to opt out at any point. More fundamentally, automatic 401(k)s do not dictate choices any more than does the current set of default options, which exclude workers from the plan unless they opt to participate. Instead, automatic 401(k)s merely

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[69] James J. Choi et al., *For Better or for Worse: Default Effects and 401(k) Savings Behavior*, *in* PERSPECTIVES ON THE ECONOMICS OF AGING 81, 81 (David A. Wise ed., 2004).

[70] Madrian & Shea, *supra* note 20, at 1159.

[71] *Id.*

[72] *Id.* at 1163.

[73] *See* John Beshears et al., *The Importance of Default Options for Retirement Saving Outcomes: Evidence from the United States*, *in* SOCIAL SECURITY POLICY IN A CHANGING ENVIRONMENT 167, 170 (Jeffrey R. Brown et al. eds., 2009) ("Recent research suggests that when it comes to savings plan participation, the key behavioral question is not whether individuals participate in a savings plan, but rather how long it takes before they actually sign up."); Madrian & Shea, *supra* note 20, at 1177.

> point workers in a pro-saving direction when they decline to make explicit choices of their own.[74]

But it turns out that switching to automatic enrollment actually *reduces* the retirement savings rates of many employees. How can this be if it unambiguously increases initial participation rates? The reason is simple: many workers do contribute at high rates under a traditional opt-in plan but under automatic enrollment they are instead enrolled at the relatively low default contribution rate of the plan — and then stick with that default.

This perverse effect was documented in Madrian and Shea's original path-breaking study. The automatic enrollment plan they studied defaulted employees into contributing 3% of their salaries.[75] 65% of eligible employees hired under automatic enrollment contributed at the default 3% contribution rate; only 20% contributed greater than 3%.[76] In contrast, a far larger fraction of eligible employees hired under the opt-in regime — 29% — contributed greater than 3%.[77] In effect, switching the default to automatic enrollment at 3% both moves nonparticipants to the 3% contribution rate *and moves many people who would otherwise have contributed even more than 3% to the default 3% contribution rate*.

Similarly, automatic enrollment plans must specify a default investment vehicle for employees who do not make their own choice. Not surprisingly, many employees then stick with the investment plan into which they are defaulted. In Madrian and Shea's study, for example, the default investment fund was a money market fund.[78] Under automatic enrollment, 75% of participants invested their entire account in the money market fund; only 24% had any funds invested in equities. That was true — the default was so sticky — even though under the prior opt-in plan, only 5% of participants invested all their funds in the money market fund, while 92% had some of their plan funds invested in equities.[79] No financial planner would advise most employees to put all their retirement savings into money market funds.

Inertia is so strong in this area that the default rules function much like mandates for many individuals. To be clear, default rules are not formally the same as explicit mandates, as they do allow opt-out by those sufficiently motivated to leave the default. Rather, for the many individuals who will stick with the defaults chosen by the plan design-

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[74] Gale et al., *supra* note 57, at 25 (citing Sunstein & Thaler's original *Libertarian Paternalism* article).

[75] Madrian & Shea, *supra* note 20, at 1151.

[76] *Id.* at 1163 fig.IIb.

[77] *Id.*

[78] *Id.* at 1151.

[79] *Id.* at 1169 tbl.VII.

er, the defaults function as effective mandates. Yet precisely because these plans retain the illusion of choice, policymakers can fail to be realistic enough about how sticky the defaults in fact will be — relying, perhaps, on the opt-out escape valve to bear the weight of any problems in the defaults. Arguably because automatic enrollment preserves the illusion of choice, the plan studied by Madrian and Shea was evidently designed without a full understanding that the 3% default contribution rate and money market default investment fund would in effect mandate reduced savings by many employees. After only a few years, the authors project, the average fund balance of eligible employees under the original opt-in regime would have been higher than under automatic enrollment.[80] A subsequent analysis finds that the competing effects of automatic enrollment were roughly offsetting.[81]

Once we see that default rules act as effective mandates for the many workers who are passive savers, a key question becomes what to mandate as the retirement savings rate — either implicitly through the default (for the passive) or explicitly as a mandatory minimum (for everyone). There is no easy answer, but BLE scholars have not effectively engaged with the question.[82]

The leading study on optimal default contribution rates in the behavioral economics literature is based on assumptions that avoid some

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[80] *Id.* at 1185.

[81] *See* Choi et al., *supra* note 69, at 108–09. This study uses data from a longer timeframe and an additional employer and finds that the relative size of the effects varies from employer to employer.

[82] *See* B. Douglas Bernheim et al., *The Welfare Economics of Default Options in 401(k) Plans* 4 (Nat'l Bureau of Econ. Research, Working Paper No. 17587, 2011), *archived at* http://perma.cc/QR9K-9YJP ("[T]he previous literature on the normative implications of default options [in 401(k) plans] is extremely limited."). Professor B. Douglas Bernheim, writing with Professor Antonio Rangel, has provided an analysis of the welfare-maximizing default contribution rate in a 401(k) plan, but he defined welfare directly in terms of choice rather than well-being. *See* B. Douglas Bernheim & Antonio Rangel, *Beyond Revealed Preference: Choice-Theoretic Foundations for Behavioral Welfare Economics*, 124 Q.J. ECON. 51 (2009) (developing this approach). This approach to welfare analysis does not produce useful guidance for designing 401(k) defaults. For example, one important way that the default contribution rate affects participant choices is through *anchoring*; participants interpret the default as a salient starting point for their own thinking or as implicit "advice" from their employer about the appropriate contribution rate. Bernheim et al., *supra*, at 11. In *The Welfare Economics of Default Options in 401(k) Plans*, the authors show that when workers are influenced by anchoring effects, every potential default choice produces the same level of social welfare under their assumptions. *Id.* at 34 (concluding that "unless one adopts a refinement of the welfare-relevant domain, one cannot say that any default rate is unambiguously better than any other"). This is a consequence of their choice-based definition of welfare. They proceed to make an ad hoc additional restriction on the set of choices relevant for evaluating welfare but admit that "a more complete understanding of anchoring effects would be required to justify it." *Id.* at 35. In our view, given the bounded rationality and bounded self-control that affect savings choices, welfare analysis of alternative retirement plan design choices requires a definition of welfare based on well-being, not on choice. That obviously raises thorny epistemological issues, but Bernheim and Rangel's approach rooted in choice fails to take seriously enough the failure of choice.

of the key issues and do not adequately reflect the underlying social science.[83] The study analyzes a DC retirement savings plan in which individuals face a time cost to making an active decision — the opportunity cost of spending, say, an hour deciding how much to contribute to the retirement account. In the absence of an active decision, each individual makes some default contribution, which could be zero (as in a traditional opt-in plan) or greater than zero (as in an automatic enrollment plan). The employer can also set a default far from anyone's optimal contribution rate, which would induce individuals to actively choose their contribution rate immediately. The optimal savings rate varies across individuals in the model. The only behavioral failing assumed of individuals is that they are present biased and procrastinate in choosing their contribution rate.

Crucially, the authors assume that whenever individuals actively choose their savings rate, they do so optimally and never make a mistake. Oddly, they assume that the present bias applies only to the opportunity cost of the time spent making a decision, not to the tradeoff between current and future consumption embodied in the savings decision itself.[84] Moreover, individuals in their model are unboundedly rational in the sense that they can perfectly calculate the optimal savings rate that maximizes their preferences. These rationality assumptions are plainly inconsistent with the social science in this area, including work by the same authors.[85]

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[83] Gabriel D. Carroll et al., *Optimal Defaults and Active Decisions*, 124 Q.J. ECON. 1639 (2009); *see also* James J. Choi et al., *Optimal Defaults*, 93 AM. ECON. REV. 180 (2003) (developing an earlier version of this model based on the same problematic assumptions discussed below).

[84] The authors note in a footnote that "[a] concern specific to savings rate choices is that present-biased agents will generally want to undersave. But to the extent that an active 401(k) contribution rate choice is a commitment to save in the *future*, starting with the next paycheck, present-biased agents at the point of action will choose the optimal (from the long-run self's perspective) contribution rate." Carroll et al., *supra* note 83, at 1668 n.26. But such an outcome depends on a special set of assumptions, including (1) that agents are sophisticated about (that is, aware of) their time-inconsistency; (2) that the contribution election is in fact a commitment that is sufficiently costly to change; and (3) that the commitment is made far enough in advance that the choice is made optimally from the long-run self's perspective. Each of these assumptions is problematic. Take assumption (2): it is trivial for individuals to later lower their contribution rate to increase their consumption in the present, and so present-biased agents would do so. Moreover, the authors' own evidence shows that many who do make active contribution rate decisions are undersavers, as we discuss in note 85 *infra*.

[85] The authors defend their rationality assumptions by arguing that "workers are probably better informed about their optimal savings rate than planners." *Id.* at 1667. They point to a survey run by four of the five authors in which workers on average reported 14% as their ideal retirement savings rate, which is close to what financial experts generally recommend. *Id.* However, the average target savings rate is the wrong statistic for evaluating how many respondents are well informed, and the authors do not report the variation in responses. Other surveys reflect widespread ignorance on appropriate savings rates. In one, fewer than half of workers reported that they or their spouses had even tried to calculate how much they need to save for retirement. HELMAN ET AL., *supra* note 53, at 21. Almost a quarter of respondents could not estimate their

This assumption of optimal savings decisions, conditional on making a decision, implies that mandates can never be better than defaults. Hence their analysis does not help us understand the choice between defaults and explicit mandates. Moreover, this assumption drives all their analysis of the optimal default contribution rate.[86] The study thus tells us little about how to actually design default contribution rates given the widespread problems of bounded rationality and bounded willpower that lead individuals to choose the wrong savings rates even when they make an active choice.

The literature's lack of serious analysis of the optimal default contribution rate is striking. The need for such an analysis was made plain when the potentially perverse effects of automatic enrollment using a low default contribution rate were documented in the original automatic enrollment study back in 2001. But such an analysis would require explicit acknowledgment that libertarian paternalism is not in fact libertarian — that it entails a social planner making choices that override what individuals would choose on their own.[87] Indeed, it would be a similar analysis to the analysis of the optimal mandatory minimum contribution rate in an explicitly mandatory regime. But once the hard paternalism embedded in the default contribution rate is revealed, the political appeal of BLE might diminish.

Accordingly, instead of recommending an optimal default contribution rate based on empirical social science, the primary response in BLE to the stickiness of default contribution rates is to sidestep the optimal default issue entirely by recommending that employers simply adopt an additional default rule that automatically increases employ-

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optimal retirement savings rate, and the rest reported widely varying percentages. *Id.* at 8. Carroll et al. go on to note that two-thirds of respondents acknowledged that they were saving too little, Carroll et al., *supra* note 83, at 1667–68, "suggesting that widespread undersaving is not primarily driven by ignorance about the need to save," *id.* at 1668. However, under their rationality assumptions, the only people who undersave are those who have not opted out of the default. In contrast, in the survey they cite, the vast majority of the self-described undersavers are people *who have actively chosen their contribution rate* by opting out of the default. Indeed, in their original publication reporting results from this survey, four of the same authors show that the survey provides evidence that respondents undersave because of self-control problems. *See* Choi et al., *supra* note 45, at 74 (reporting that among respondents who said that their savings were too low and that they planned to increase their contribution rate in the next few months, only 14% actually did increase their contributions within four months of the survey).

[86] For example, when the degree of present bias, and hence of the procrastination problem, is high, then the optimal default in the model is a penalty default that triggers immediate decisions. This result would not generally obtain if people make mistakes when they make active decisions, due to either bounded rationality or bounded willpower. If that were the case, then the social planner would have an incentive to *harness* individuals' procrastination in making decisions to get them to stay at a judiciously chosen default.

[87] It is worth pointing out that many libertarians also do not view libertarian paternalism as libertarian. *See, e.g.*, Gregory Mitchell, *Libertarian Paternalism Is an Oxymoron*, 99 NW. U. L. REV. 1245 (2005).

ees' contribution rates each year.[88] Again, mandates can be avoided. The PPA encouraged the adoption of such automatic escalation plans by providing regulatory relief for plans that initially default employees into a 3% contribution rate and then automatically increase the contribution by one percentage point per year up to at least a 6%, and no more than a 10%, contribution rate unless the employee opts out.[89] In response, while about three-fourths of automatic enrollment plans use a default contribution rate of 3% or less, one-third of automatic enrollment plans automatically increase contributions, with most ending the automatic increases once the contribution rate reaches 6%.[90] In the leading paper that proposed automatic escalation plans, Thaler and Benartzi estimate that these plans would increase retirement savings by on the order of $125 billion per year.[91]

But here is a crucial missing fact: the effectiveness of automatic escalation is a function of worker mobility. When workers change employers, their contribution rate resets to the default initial contribution rate of the new employer's plan.[92] Thaler and Benartzi ignore this issue in estimating the potential impact of the program on savings rates.[93]

To see the potential significance of this issue, note that the average person born between 1957 and 1964 held 11.3 jobs from ages eighteen to forty-six.[94] If each of those jobs used the standard automatic escalation 401(k), with an initial default contribution rate of 3% increasing one percentage point per year up to 6%, and the worker stayed with the defaults, the average person in this cohort would contribute 4.3%

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[88] *See* NUDGE, *supra* note 25, at 112–15; Benartzi et al., *supra* note 59, at 252; Gale et al., *supra* note 57, at 28–29.

[89] I.R.C. § 401(k)(3)(j) (2012).

[90] PSCA 2010, *supra* note 31, at 62–63. Another 20% allow workers to opt in to having their contributions automatically increased each year. *Id.* at 62.

[91] Thaler & Benartzi, *supra* note 58, at S185.

[92] Worker mobility also affects the evaluation of standard automatic enrollment plans relative to opt-in plans. One of the positive effects of automatic enrollment is to shift participation to earlier in some employees' tenure at the firm. Hence as worker mobility increases (shortening the typical job tenure), this positive effect of automatic enrollment gets larger. But the standard single-firm evaluations of the effects of automatic enrollment only compare the long-run effects of automatic enrollment on workers who stick with the same employer. *See, e.g.*, Madrian & Shea, *supra* note 20.

[93] *See* Thaler & Benartzi, *supra* note 58, at S182–85. Specifically, in their simulations they assume that 5% of enrollees drop out of the automatic escalation plan each year and that the dropouts simply remain at the contribution rate they had reached in the plan when they ceased automatic escalation. *Id.* at S183.

[94] News Release, Bureau of Labor Statistics, Number of Jobs Held, Labor Market Activity, and Earnings Growth Among the Youngest Baby Boomers: Results from a Longitudinal Survey 2 (July 25, 2012), *archived at* http://perma.cc/U8JQ-MJRL.

on average over ages eighteen to forty-six.[95] By ignoring this issue, Thaler and Benartzi thus dramatically overestimate how effectively "Save More Tomorrow" plans would overcome the (insufficiently appreciated) problems in automatic enrollment plans.

Moreover, the 4.3% average contribution rate produced by the standard automatic escalation plan, given worker mobility, is much lower than any plausible estimate of the average optimal retirement savings rate. Consider, for example, that the average contribution rate chosen by participants in opt-in plans is 7.5%.[96] The true average optimal contribution rate is surely greater than this rate, since no one claims that individuals oversave on average. Hence the standard automatic escalation plan codified as the safe harbor in the PPA substantially undershoots any plausible view of how much people on average *should* be saving.

Ultimately, here is a central empirical question for evaluating whether BLE policies have meaningfully addressed the retirement savings problem: given the countervailing positive and negative effects of automatic enrollment, and the actual defaults chosen by plan designers under the PPA, has the adoption of automatic enrollment in practice increased overall retirement savings?[97]

Apparently not. Vanguard, one of the largest 401(k) plan administrators, reports that from 2007 to 2011 the fraction of plans it administered that used automatic enrollment almost doubled from 15% to 29%.[98] But over this same period, the average total contribution rate (employee and employer) of eligible employees fell from 7.9% to 7.5%,

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[95] We ran a simulation to calculate this result using data from the National Longitudinal Survey of Youth 1979 (NLSY79), *see id.* The NLSY79 provides the average number of jobs started by age, from ages eighteen to forty-six. *See id.*, Supplemental Tbl., *archived at* http://perma.cc/D4ER-48NJ. Our simulation uses these numbers to determine the probability of each individual changing jobs at each age. We simulated 1000 individuals, each transitioning to a new job with these probabilities at each age, with the contribution rate either incrementing by one percentage point if the individual does not change jobs, or resetting to 3% if the individual does change jobs. We then calculated each individual's average contribution rate over ages eighteen to forty-six. The average across these 1000 individuals of these average contribution rates is 4.3%. To be sure, this is only a rough ballpark estimate and ignores many complicating factors such as the wage profile over a worker's lifetime.

[96] VANGUARD, HOW AMERICA SAVES 2012, at 29 fig.31 (2012).

[97] This is not the only question relevant for evaluating current automatic enrollment policies. A full evaluation would include, for example, consideration of the effect of automatic enrollment on the *distribution* of savings rates. As we have discussed, automatic enrollment increases the savings of those who would not promptly opt into a conventional plan but reduces the savings of many who would opt into a conventional plan at contribution rates higher than the default under automatic enrollment. Hence, automatic enrollment reduces the variance in savings rates. Even if it fails to increase average retirement savings, automatic enrollment might still increase welfare if it increases the well-being of those it helps more than it lowers the well-being of those it harms.

[98] VANGUARD, *supra* note 96, at 5 fig.1.

and the median fell from 7.1% to 6.5%.[99] Importantly, these figures include nonparticipants, and hence this decline includes the positive effect of automatic enrollment on initial participation. Vanguard observes, "This decline is . . . attributable in part to the growing use of automatic enrollment and the tendency of participants to stick with the default deferral [that is, contribution] rate adopted by the plan sponsor."[100] To be sure, this evidence is tentative. A large-scale evaluation of the effects of automatic enrollment on overall savings, given the actual plan design decisions made by plan sponsors, is long overdue. But it might be that automatic enrollment has so far *exacerbated*, rather than eased, the retirement savings problem.[101]

There is nothing intrinsic in the logic of setting or switching default rules, of course, that necessarily leads to such policy problems. In principle, we should simply get the defaults right. But our thesis is that the framing of BLE policy interventions as "libertarian" and "choice preserving" contributes to the policy failure represented by the PPA by obscuring the mandatory effects of the defaults. While the underlying social science documented the potentially perverse consequences of automatic enrollment from the first study,[102] BLE proponents continually emphasize that defaults "merely point workers in a prosaving direction when they decline to make explicit choices of their own."[103] Optimal default levels have not received sufficient attention and analysis. Suppose instead that the PPA had explicitly mandated some level of retirement savings by workers. Is there any doubt that such a mandate would have been given more careful analysis than the defaults enshrined in the PPA received? Our concern here is not the logical structure of BLE, but its psychological (for individual analysts),

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[99] *Id.* at 33 fig.39. The total contribution rate (employer plus employee contributions) is the policy-relevant outcome, and automatic enrollment affects both employee and employer contributions. The reason is that employer contributions are typically structured as a match and hence are a function of employee contributions, which are directly influenced by the default under automatic enrollment.

[100] *Id.* at 33. The report continues, "However, it also reflects the decline in some employer contributions during the low part of the recent economic cycle." *Id.* With Vanguard's panel data, it is straightforward to isolate the causal effect of automatic enrollment using methods well established in the literature on default rules, *see, e.g.*, Madrian & Shea, *supra* note 20, but Vanguard does not report the details of their analysis that led to their causal conclusions or break down quantitatively the part of the drop in contribution rates that is attributable to the adoption of automatic enrollment.

[101] A similar problem may beset the U.K.'s recent adoption of automatic enrollment. The U.K. now requires employers to adopt automatic enrollment, but most employers have adopted the minimum possible default contribution levels. *Auto-enrolment Workplace Pension Savings 'Insufficient,'* BBC (Feb. 13, 2014, 8:43 AM), http://www.bbc.co.uk/news/business-26156277, *archived at* http://perma.cc/RS9W-RZFW.

[102] Madrian & Shea, *supra* note 20, at 1185.

[103] Gale et al., *supra* note 57, at 25.

sociological, and political effects if more attention is not devoted to the issue.

2. Defaults vs. Explicit Mandates. — The logic of BLE scholars who embrace the automatic enrollment default rule approach over traditional opt-in plans must either be that (1) the failure to opt out reveals that people are now acting as rational market actors choosing the appropriate savings rate by exercising informed consent not to opt out; or (2) these savings rates are the appropriate ones independent of what individuals would choose. Of course, given all that behavioral research has taught us regarding the reasons people do not make rational choices in deciding whether to opt into these plans, or in deciding whether to change their savings rates after being automatically enrolled, it is difficult to credit the view that the decision whether to opt out is suddenly informed by purely rational calculations. The extraordinary effectiveness of shifting the default rule — the stickiness of behavior on either side of the line — suggests that it is inertia, procrastination, passivity, and the like that lead to the success BLE has had in increasing initial participation rates through opt-out plans. Behavioral realism strongly suggests we should be skeptical about relying on justification (1) to validate these opt-out retirement programs: there is no more reason to believe the decision to stay in is a product of rational calculation than to believe the decision to stay out is.

Instead, the justification for these programs must be (2): they produce the right outcomes, whether people meaningfully consent to those outcomes or not.[104] But if that's the case — if the justification for opt-out programs over opt-in programs is that the default is effectively mandating an outcome that is superior to what the individual would choose otherwise — then should we not be endorsing the hard paternalistic policy of an explicitly *mandatory* savings program rather than straining mightily to preserve the illusion of choice by allowing opt-out of automatic enrollment programs?[105]

The core issue in choosing between a mandatory retirement savings plan and an opt-out one is whether the individuals who would opt out would be making good decisions. When individuals' optimal savings rates are heterogeneous, one potential cost of a mandate is that the mandate might prevent some individuals from choosing their optimal

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[104] Thaler and Sunstein seek to acknowledge the force of inertia and nonetheless claim that the failure to opt out expresses meaningful consent. NUDGE, *supra* note 25, at 109 ("Although the low dropout rate is, of course, partly due to inertia, the fact that so few people drop out does suggest that workers are not suddenly discovering, to their dismay, that they are saving more than they had wanted.").

[105] For a recent philosophical defense of coercive paternalism over libertarian paternalism (or nonpaternalism), see SARAH CONLY, AGAINST AUTONOMY (2013).

savings rate. For example, an individual who has substantial financial resources for retirement from other sources may rationally prefer to contribute less than the mandated minimum contribution rate in a mandatory scheme. On the other hand, an opt-out regime might be doing a disservice to many who do opt out. Are they rationally opting out? Or are they doing so as a result of the pervasive behavioral defects that create the retirement savings policy problem in the first place — in which case, they would be better off forced to stay in the program?

On this issue there is a relative dearth of evidence, in part because BLE scholars have not focused on the question; indeed, that is an example of the more general problem in BLE that we have identified. But the evidence we do have is not encouraging. The central finding of the only study of which we are aware on the reasons people opt out of participation in automatic enrollment plans is that such "quitters" report lower levels of trust in financial institutions than do participants.[106] This seems more likely a reflection of behavioral biases than of rational optimization.

In addition to opting out of participation on the front end, individuals also opt out on the back end of the system through early withdrawals of plan funds. Participants may withdraw funds before retirement by taking lump sum distributions or, if the plan allows, borrowing from their 401(k) or other retirement account. Early withdrawals that do not qualify for an exemption are subject to a 10% penalty on top of the income tax due on the distribution.[107]

Opt-outs through early withdrawals result in substantial leakage of money out of retirement savings plans. Early withdrawals amounted to a staggering $241 billion in 2010.[108] A substantial fraction of those early withdrawals were subject to income tax at the time of the withdrawal as well as the 10% penalty.[109] If these opt-outs through early

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[106] JULIE R. AGNEW ET AL., CTR. FOR RET. RESEARCH AT BOS. COLL., ISSUE BRIEF NO. 7-17, DO FINANCIAL LITERACY AND MISTRUST AFFECT 401(K) PARTICIPATION? 3 (2007) ("Mistrust [in financial institutions] is not important [to participation] in the voluntary plan but very important [to participation] in the automatic enrollment plan; an individual with low trust is 12 percent less likely to participate.").

[107] I.R.C. § 72(t)(1) (2012). If a loan on a 401(k) account is not paid back, it is treated as a lump sum distribution subject to the 10% penalty. *Id.* § 72(p).

[108] Robert Argento et al., *Early Withdrawals from Retirement Accounts During the Great Recession* 8 (Fed. Reserve Bd., Finance and Economics Discussion Series Working Paper No. 2013-22, 2013), *archived at* http://perma.cc/9JPZ-6QSG. These figures include both defined benefit and defined contribution plans, but the bulk of early distributions come from defined contribution plans. ALICIA H. MUNNELL & ANNIKA SUNDÉN, COMING UP SHORT 132 (2004).

[109] Of the $241 billion of early withdrawals in 2010, Argento et al. estimate that 43% was taxable in the current year and 20% was subject to the 10% penalty. Argento et al., *supra* note 108, at 8. In addition, 21% of all 401(k) participants who were eligible for loans had loans outstanding against their 401(k) accounts, as of the end of 2011, amounting to 14% of the remaining account

withdrawals often reflect irrational decisions, driven by bounded rationality and bounded willpower, then limiting choice by prohibiting these withdrawals could well be welfare improving.

The choice between mandatory and voluntary retirement savings plans is thus a first-order public policy issue, yet work in the field has had little to say about it. The hegemony of the automatic enrollment prescription in BLE is nicely illustrated by a recent survey of the literature, which — after a lengthy discussion of the scholarship on automatic enrollment — characterizes mandatory enrollment as "[a] more extreme form of automatic enrollment."[110] While the author observes that "[w]hether to make participation voluntary or mandatory is an important policy question," she provides no discussion of scholarly work in behavioral economics analyzing that issue, evidently because there is none.[111]

The evidence on the choices of those who opt out of the default investment allocation is even more challenging to choice proponents. In one study, Benartzi and Thaler surveyed employees at a company with a savings plan that provided a default asset allocation selected by an investment management firm but allowed employees to opt out of that default and choose their own investment allocation.[112] Employees who opted out were presented with the range of retirement income they could expect if invested in their own portfolio and if invested in the default portfolio, without labeling the ranges as such.[113] Respondents rated the default portfolio significantly higher than their own chosen investment allocation, and the authors conclude that participants lack the skills to choose an investment allocation that reflects their risk preferences.[114]

Watching BLE scholars struggle over how to use choice architecture to improve portfolio management choices further illuminates the internal tension within BLE. On the one hand, the behavioral evidence suggests most people do a terrible job in this area. At the same time, BLE is precommitted to preserving individual choice and to limiting its interventions to those that assist people in making these choices for which they will probably never be properly equipped.

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balance. JACK VANDERHEI ET AL., EMP. BENEFIT RESEARCH INST., ISSUE BRIEF NO. 380, 401(K) PLAN ASSET ALLOCATION, ACCOUNT BALANCES, AND LOAN ACTIVITY IN 2011, at 28 (2012), *archived at* http://perma.cc/ML3L-F3GD.

110 Brigitte C. Madrian, *Matching Contributions and Savings Outcomes: A Behavioral Economics Perspective* 18 (Nat'l Bureau of Econ. Research, Working Paper No. 18220, 2012), *archived at* http://perma.cc/TDF8-73WL.

111 *Id.*

112 Shlomo Benartzi & Richard H. Thaler, *How Much Is Investor Autonomy Worth?*, 57 J. FIN. 1593, 1595 (2002).

113 *See id.* at 1594–95.

114 *Id.* at 1595.

Thaler and Sunstein's chapter-length treatment of a Swedish retirement program offers a good illustration.[115] Participants were able to design their own portfolios by choosing up to five funds from a list of hundreds of funds that met basic fiduciary standards.[116] The government created and managed a default fund for those who did not want to choose a fund, but government and fund advertising encouraged people to choose their own funds.[117] Full information about all funds was readily available.[118] The result was that two-thirds chose to manage their own portfolios while one-third remained in the default fund.[119] From the data, we learn that the default fund performed far better than the average actively chosen portfolio (21.5% compared to 5.1% returns over the relevant time period).[120] We also know, consistent with other studies, that only 1–3% of people tended to change their initial portfolio allocations.[121]

What do Thaler and Sunstein take away from this experiment? They first consider whether the default fund should be the only one offered.[122] They observe that this decision depends on a judgment about how well people are likely to do making their own choices instead.[123] Yet having just demonstrated in detail how badly people make these choices and why, Thaler and Sunstein firmly reject requiring people to accept the default fund. Why? Because doing so "eliminates all choice, and so is inconsistent with libertarian paternalism. We don't recommend it."[124] This tautological precommitment to freedom of choice, in the face of the overpowering empirical evidence they themselves offer, nicely captures the internal conflicts in the dominant approach to BLE.

Next, Thaler and Sunstein show that individuals' preferences for their own chosen funds or the government default fund were highly sensitive to government advertising. Advertising in the early years of the program encouraged people to choose their own funds, and most people did so; as government advertising stopped over the years, people became overwhelmingly likely simply to take the government default fund (in the seventh year of the program, 92% did so).[125] Since

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115 *See* NUDGE, *supra* note 25, at 145–56 ("9: Privatizing Social Security: Smorgasbord Style," *id.* at 145).

116 *Id.* at 146.

117 *See id.*

118 *See id.*

119 *Id.* at 148.

120 *See id.* at 152.

121 *See id.* at 153.

122 *See id.* at 146–47.

123 *Id.* at 147.

124 *Id.*

125 *See id.* at 148–49.

people are so susceptible to this advertising (are they making more informed choices or being brainwashed?), Thaler and Sunstein recommend that governments advertise to encourage people to choose the government default fund.[126] But again, if that's the case, and if people suffer the behavioral failings we know about, why not simply require people to use the default fund?

Finally, the key recommendation Thaler and Sunstein offer for government policies of this sort is that people be better "guided through a simplified choice process."[127] They should first be asked a yes-or-no question regarding whether they want the default fund; if they say no, they are offered a small choice of blended funds; only those who reject these choices should then get access to the full list of funds.[128] Thaler and Sunstein conclude that the key lesson of this Swedish experience is that "[t]he more choices you give people, the more help you need to provide."[129] But perhaps the key lesson, from their own data, is that the fewer choices you give people in this realm, the better off they are.

A philosophical precommitment to freedom of choice also appears to drive in part BLE's unwillingness to seriously consider mandatory policies in this area. Professors Beshears, Choi, Laibson, and Madrian, a group of economists who together have accounted for the bulk of behavioral economics work on retirement savings over the last decade, express this explicitly in a coauthored paper. After first discussing thoughtfully how to do welfare analysis in situations in which individuals' choices are not reliable indicators of their well-being, they then disavow any use of their analysis to fashion choice-limiting policies, writing:

> Authors like Hayek (1944) and Friedman (1962) have convincingly argued that governments are not likely to successfully divine people's preferences and make optimal choices on their behalf. We agree. If we had to choose between government paternalism or consumer autonomy, we would take the latter without hesitation. Like most economists, we worry about the overconfidence, arrogance, and corruption of powerful political decision-makers.
>
> In practice, however, we do not need to choose between the extremes of paternalism and autonomy . . . .
>
> Like doctors, the government (and other influential social institutions, like employers) are in a good position to advise autonomous agents without dictating to those agents. We believe that such advisory roles are appropriate, though they need to be monitored to reduce the likelihood of

126 *See id.* at 155.
127 *Id.* at 156.
128 *Id.*
129 *Id.*

> abuse. Governments could play a constructive advisory role if (1) their advice is only given in circumstances when the many different measures of normative preferences . . . tend to coincide, and (2) their advice is offered without any obligation to obey (e.g., an opt-out default). By contrast, in cases with ambiguous or contradictory measures of normative preference, we side with Hayek and Friedman — government should withdraw.[130]

The high-water mark of government intervention in retirement savings, under this view, is an opt-out default, that is, automatic enrollment. Social Security, then, is a misguided encroachment on individual autonomy and freedom of choice. If asked directly, these scholars might actually endorse Social Security — and on paternalistic grounds.[131] But the view they express here, hostile to government mandates, reflects the influence of a philosophical commitment that has stunted the development of BLE.[132]

3. The Failure of Tax Subsidies for Retirement Savings. — By focusing too narrowly on improving choices within tax-subsidized DC plans, the soft paternalism approach to BLE fails to step back and consider the implications behavioral social science might have for the proper role of the tax subsidies on which these plans are based. Does behavioral social science suggest that tax subsidization of retirement savings is actually effective relative to alternative approaches? Government invests vast amounts in trying to incentivize increased private savings in DC programs. The tax code currently contains subsidies

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[130] John Beshears et al., *How Are Preferences Revealed?*, 92 J. PUB. ECON. 1787, 1793 (2008) (footnote omitted).

[131] Indeed, in response to this paper, two of these scholars, Professors David Laibson and Brigitte Madrian, told us in personal communications that, despite the view they expressed in this earlier paper, they *do* in fact support mandatory savings programs like Social Security on paternalistic grounds.

[132] Another vivid illustration of the unwillingness of behavioral economists to talk about mandates is provided by the study of retirement savings in Denmark by Professor Raj Chetty et al. *See* Raj Chetty et al., *Active vs. Passive Decisions and Crowd-out in Retirement Savings Accounts: Evidence from Denmark* (Nat'l Bureau of Econ. Research, Working Paper No. 18565, 2013) [hereinafter Chetty et al., *Active vs. Passive Decisions*], *archived at* http://perma.cc/W7RN-WBNW; *see also infra* p. 1631. In addition to examining the effect of tax subsidies on retirement savings, the authors examine the effect of both employer-based and government contribution *mandates*. They find that these mandates are very effective at increasing total savings, resulting in very little crowding out of private savings. *See* Chetty et al., *supra*, at 2. But in interpreting the policy implications of their findings, the authors do not mention mandates and instead write: "Our finding that policies that change savings passively do raise total savings thus significantly strengthens the argument for policies such as automatic enrollment and defaults [e.g., Carroll et al., 2009; Madrian, 2012] . . . ." *Id.* at 4. Similarly, the authors wrote a policy brief discussing the policy implications of the study titled, *Subsidies vs. Nudges: Which Policies Increase Saving the Most?*. RAJ CHETTY ET AL., CTR. FOR RET. RESEARCH AT BOS. COLL., POLICY BRIEF NO. 13-3, SUBSIDIES VS. NUDGES: WHICH POLICIES INCREASE SAVINGS THE MOST? (2013), *archived at* http://perma.cc/6DXT-A4E6. As the title suggests, the authors interpret their findings as supporting automatic enrollment, never discussing the implications for mandatory policies, despite the fact that *the actual policy they studied was a mandate* and not an automatic enrollment default. *See id.* at 5.

that cost about $72 billion in 2012 for employer-sponsored DC plans, individual retirement accounts (IRAs), Self-Employed plans, and the Saver's Credit.[133] These tax subsidies all raise the effective returns to retirement savings; rational actors who understand fully the economics of these subsidies and the benefits of retirement savings should therefore be taking advantage of these government-subsidized options in large quantities. But of course, if people were rational savers for retirement, there would be no need for paternalistically justified government retirement policies in the first place. The accounts might also function as a savings commitment device, since early withdrawals are penalized. The initial question, then, is whether nonrational retirement savers respond to additional tax incentives, or take advantage of the implicit commitment device, to save more.

The question is not how much money flows into these tax-subsidized accounts, but rather whether the subsidy motivates a net increase in financial resources in retirement — or whether instead people essentially just shift money from other savings to these accounts. For U.S. programs, the evidence is mixed, at best, on whether rates of savings are responsive to tax subsidies.[134] But the most detailed, comprehensive study of this question by American economists, examining Danish data, concludes that most individuals — around 83% — are passive savers who do not respond to tax incentives to save.[135] For the 17% who do, it turns out these government subsidies do not change their overall savings rate because they offset contributions to subsidized accounts by reducing their savings in other forms.[136]

The shocking numerical conclusion of the study is this: the authors estimate that every $1 of tax expenditure on retirement savings increases total savings by less than 1 cent.[137] If the results of this study carry over fully to the United States, then, for the $72 billion in annual tax expenditures to encourage private retirement savings, we increase private savings by all of $0.7 billion. That is a vast amount of public money spent for a minor increase in total private retirement savings.

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[133] OFFICE OF MGMT. & BUDGET, FISCAL YEAR 2014: ANALYTICAL PERSPECTIVES 246 tbl.16-1, 257 tbl.16-4 (2013), *archived at* http://perma.cc/6WWS-6976. This is composed of about $64 billion for employer-sponsored DC plans, $4.3 billion for IRAs, $2.5 billion for Self-Employed plans, and $1.1 billion for the Saver's Credit available to low- and moderate-income households that contribute to an IRA or qualified DC plan. *Id.* For the tax deductions, these estimates represent the present value of the taxes that are deferred on contributions in 2012 minus the present value of any future taxes when the contribution and accrued earnings are withdrawn. *Id.* at 242.

[134] *See* Eric M. Engen et al., *The Illusory Effects of Saving Incentives on Saving*, 10 J. ECON. PERSP. 113, 114 (1996) (noting that earlier literature "generally overstate[s] the impact of [tax] incentives on saving").

[135] *See* Chetty et al., *Active vs. Passive Decisions*, *supra* note 132, at 2–3.

[136] *See id.* at 3.

[137] *Id.*

None of this should be surprising, however, were we willing to take the findings of behavioral social science more seriously. These findings cast greater doubt on the capacity for sound individual choice concerning retirement savings than BLE policy recommendations reflect. As an example of the depth of these behavioral failings, one U.K. study involved DB plans that employers paid for in full and that required *no* employee contributions but did require employees to opt in to participate; 49% of eligible employees failed to sign up, which is walking away from free money.[138] Similarly, in the United States, workers who are over 59.5 years of age suffer no tax penalty for withdrawing funds from a retirement account.[139] Some firms with matching contribution plans permit employees to withdraw from their retirement accounts while still working.[140] Thus, these employees can join the plan, contribute, get the employer match, and then immediately withdraw their own contributions. Yet, in one study, 36% of eligible employees either did not join or did not save enough to get the full employer match.[141] As BLE scholars admit, these are clear cases of people being "foolish beyond a doubt."[142] But if people are this foolish about understanding retirement plans and making even no-brainer rational choices, what does that imply about tax-subsidized savings programs?

This evidence suggests that we ought to be asking the more foundational question of whether it is sensible to base policy solutions to the failure of people to save rationally on the assumption that people will turn around and rationally take advantage of options that increase the rate of return on retirement savings, particularly when these increases are through a complicated tax-deferral mechanism. The very defects in individual decisionmaking and planning that require government retirement policies in the first place undermine the tax subsidy approach.

E. A More Complete Behavioral Approach

So where do we go from here? What would a broader approach to applying behavioral insights to retirement savings policy look like? We sketch here in brief such a scholarly and policy reform agenda.

1. The Optimal Retirement Savings Architecture. — The right approach to analyzing how to incorporate more accurate behavioral

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138 Shlomo Benartzi & Richard H. Thaler, *Heuristics and Biases in Retirement Savings Behavior*, 21 J. ECON. PERSP. 81, 82 (2007).

139 James J. Choi et al., *$100 Bills on the Sidewalk: Suboptimal Investment in 401(k) Plans*, 93 REV. ECON. & STAT. 748, 748 (2011).

140 *See id.* at 750.

141 *See id.* at 748–49. The authors found that educating a randomly selected treatment group about this foregone compensation had no statistically significant effect on raising contribution rates. *See id.* at 749.

142 NUDGE, *supra* note 25, at 108.

assumptions into retirement savings policy is to start with an empirically based model of human behavior and then consider what set of policies, including explicit mandates as well as defaults, would maximize social welfare at each of the three stages of the retirement savings problem — the appropriate rate of savings, the appropriate investment choices, and the appropriate rate of postretirement dissavings. As noted, key design issues include (1) what rules to use for participation in the program; (2) what savings rate to mandate, either implicitly as the default or explicitly; (3) what scope for individual choice to allow in managing retirement assets; and (4) whether to mandate annuitization of some of the accumulated assets at retirement. Each choice entails tradeoffs. We suspect such an analysis would show a role for mandates, including some explicit mandatory minimum retirement savings rate — likely one higher than the rate represented by current Social Security benefits.

One component of such an analysis is purely descriptive: what distributions of savings outcomes do alternative policy choices produce? Consider for example the choice of default contribution rate in an automatic enrollment regime. A key ingredient in such plan design decisions is an understanding of what set of savings outcomes follows from alternative default contribution rates. A large-scale study on this key question is long overdue.

The more conceptually challenging component of such an analysis is normative: which of these distributions of savings outcomes is most desirable from a social welfare standpoint? Because choices are affected by behavioral biases, well-being cannot be identified simply with what people choose. How to measure so-called "normative preferences" reflecting individuals' true well-being in such contexts is a major challenge, fraught with epistemological difficulties, but there is a growing literature developing a set of methodologies to do so.[143] Plan designers and policymakers are already making such normative judgments, though, implicitly resolving the issues posed by determining normative preferences, with little scholarly analysis to inform them.

2. The Big Picture. — Policy reforms indicated by pushing the behavioral insights further would go beyond the field's current emphasis on tinkering with choice architecture in voluntary tax-subsidized DC plans. Reform plans should also consider the overall federal policy scheme in retirement savings as a whole. For example, a comparative analysis of different modes of structuring government retirement programs, in which behavioral insights into actual savings behavior play a critical role, might lead to very different recommendations about Social Security reform than are currently being discussed. Much of the

[143] For a useful discussion of the issues, see Beshears et al., *supra* note 63.

current debate over the future of Social Security is focused on searching for broadly acceptable means of reducing its growing costs. The Obama Administration's 2014 budget, for example, proposes reducing Social Security benefits by replacing the current metric for cost-of-living adjustments to Social Security payments each year — the traditional consumer price index (CPI) — with the "chained" CPI, which would result in a smaller increase in benefits over time.[144] Another common proposal for reform is to raise the retirement age for receipt of benefits.[145]

If mandatory savings programs like Social Security are more effective than tax subsidies, however, perhaps we should reduce the less effective tax subsidies for voluntary programs rather than reduce spending on Social Security.[146] To give a sense of the amounts of money involved, the nearly $72 billion the government spent in calendar year 2012 on subsidizing IRAs and defined contribution plans[147] dwarfs the $25 billion in annual savings expected from the Administration's proposed cuts to Social Security benefits once those cuts are fully implemented and reach a steady state.[148]

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144 DEP'T OF THE TREASURY, GENERAL EXPLANATIONS OF THE ADMINISTRATION'S FISCAL YEAR 2014 REVENUE PROPOSALS 240 (2013), *archived at* http://perma.cc/KV68-2BKW.

145 For example, the report from the bipartisan National Commission on Fiscal Responsibility and Reform, cochaired by Alan Simpson and Erskine Bowles, recommended increasing the retirement age by indexing it to increases in longevity. THE NAT'L COMM'N ON FISCAL RESPONSIBILITY AND REFORM, THE MOMENT OF TRUTH 50 (2010), *archived at* http://perma.cc/57PU-RQV4. The "Roadmap for America" budget proposal put forth by Representative Paul Ryan speeds up the increase in retirement age under current law so that the retirement age reaches 67 by 2026 and thereafter proposes to increase the retirement age by one month every two years. PAUL D. RYAN, A ROADMAP FOR AMERICA'S FUTURE, VERSION 2.0, at 56 (2010), *archived at* http://perma.cc/MV9E-FKXL.

146 The Obama Administration's 2014 Budget did propose a de minimis reduction in the tax subsidy for DC plans by capping "an individual's total balance across tax-preferred accounts to an amount sufficient to finance an annuity of not more than $205,000 per year in retirement, or about $3 million for someone retiring in 2013." The budget estimates that the proposal would save $0.8 billion in 2014. OFFICE OF MGMT. & BUDGET, *supra* note 67, at 18, 210.

147 *See supra* note 133 and accompanying text.

148 Estimates for the annual savings expected from the Administration's Social Security proposals come from the Office of the Chief Actuary of the Social Security Administration in a letter to Congress. The estimates include the Administration's proposal to change the index for the cost-of-living adjustment to Social Security benefits as well as the proposed benefit increase for beneficiaries after their fifteenth year of benefit eligibility. Letter from Stephen C. Goss, Chief Actuary, Soc. Sec. Admin., to Rep. Sam Johnson, Chairman, Subcomm. on Soc. Sec. of the H. Comm. On Ways & Means (July 11, 2013), *archived at* http://perma.cc/LEV5-GDXH. Annual savings from the combined proposals are expected to gradually increase as more retirement cohorts are phased into receiving benefits under the new cost-of-living adjustment. By 2041, the savings from the proposals are expected to approach a steady state, at which point the Chief Actuary estimates that the proposals will save 0.44% of taxable payroll compared to present law. *Id.* at tbl.1. Taxable payroll in 2012 was $5.697 trillion. THE BD. OF TRS., FED. OLD-AGE AND SURVIVORS INS. AND FED. DISABILITY INS. TRUST FUNDS, THE 2013 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND

Current BLE has had little to say on these large political issues thus far because Social Security is mandatory and therefore off the agenda of BLE. But comparisons of the costs and benefits of different savings programs might bring discussion of Social Security and 401(k)s together into a fuller analysis. Has the trumpeting of default rules as the solution to the retirement savings problem lulled policy elites into a willingness to solve the Social Security funding issues through cuts in benefits rather than increases in revenue? In the same budget in which the Obama Administration proposes cuts in Social Security benefits, it proposes an extension of the automatic enrollment approach to retirement savings through a new automatic enrollment IRA.[149] Perhaps policymakers view increased use of savings defaults as an effective substitute for mandatory programs like Social Security.

3. Mandatory Defined Contribution Plans. — BLE's focus on default rules in voluntary DC plans has led it not only to miss opportunities to encourage mandatory DC plans, but also to discourage them. BLE scholars sometimes characterize DC plans in the United States as voluntary;[150] little appreciated is the fact that historically employers offered DC plans that were mandatory for employees and that many maintain mandatory components today. Our own employer, New York University, for example, makes a nonelective contribution of 5% of our salary to a 403(b) plan. We are not given the option of receiving that money outside of the retirement account instead.[151] Such nonelective employer contributions in effect mandate retirement savings by employees. Moreover, existing work in behavioral economics suggests that such nonelective employer contributions, relative to employer matching contributions, produce little reduction in employee retirement savings contributions.[152] Prior to 1981, when the IRS issued regulations that enabled the subsequent proliferation of 401(k) plans,[153] employers commonly sponsored DC plans based solely on such nonelective employer contributions, often in the form of a fixed percentage of each employee's pay.[154] But the creation of the 401(k)

FEDERAL DISABILITY INSURANCE TRUST FUNDS 205 tbl.VI.F6 (2013), *archived at* http://perma.cc/8D6Z-U3XC. Using these numbers, the total annual savings of the Administration's proposals related to Social Security in steady state form is $25 billion (2012 dollars).

149 OFFICE OF MGMT. & BUDGET, *supra* note 67, at 127.

150 *See, e.g.*, Madrian, *supra* note 110, at 18.

151 We could, in principle, opt out of receiving the free 5% contribution, but there is no incentive to do so, and so the opt-out default rule acts as an effective mandate.

152 John Beshears et al., *The Impact of Employer Matching on Savings Plan Participation Under Automatic Enrollment*, *in* RESEARCH FINDINGS IN THE ECONOMICS OF AGING 311, 325–26 (David A. Wise ed., 2010); Chetty et al., *Active vs. Passive Decisions*, *supra* note 132, at 2–3.

153 *See* 26 C.F.R § 1.401(k)-1 (2013). The provision that became I.R.C. § 401(k) was contained in the Revenue Act of 1978. *See* Revenue Act of 1978 § 135, I.R.C. § 401(k) (2012). It authorizes employees to elect to defer portions of their salary on a pretax basis. *Id.*

154 MUNNELL & SUNDÉN, *supra* note 108, at 16, 23–24.

enabled employers to adopt plans that allowed employees to make pretax contributions, and employers adopted this approach in droves.[155] Hence, at the same time as the transition from the defined benefit to defined contribution retirement savings system in the United States, the defined contribution system shifted from primarily mandatory savings to primarily voluntary savings.[156] Most DC plans today offer employer contributions as a match, but about half continue to provide some form of nonelective contribution.[157]

The U.S. tax code thus already has the infrastructure to implement a defined contribution system with mandatory components, but incentives for employers to participate in this system are lacking. Rules intended to ensure that individuals across the income spectrum benefit from retirement tax subsidies, called nondiscrimination rules, provide only limited incentives for employers to contribute to 401(k) plans.[158]

Rather than the default rule approach of incentivizing employers to adopt automatic enrollment, BLE-inspired reformers might take a mandatory approach by considering changes to the law that would enhance employer incentives to, in effect, mandate increased retirement savings by their employees by making nonelective employer contributions.[159] Instead, the Pension Protection Act of 2006 created a new safe harbor from nondiscrimination testing for automatic enrollment plans that requires *lower* levels of employer contributions than the existing ERISA safe harbor.[160] Furthermore, the automatic enrollment

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155 *Id.* at 23–24.

156 *Id.* at 23 ("[I]nitial coverage by 401(k)s resulted from the addition of 401(k) provisions to traditional thrift and profit-sharing plans . . . .").

157 As of 2010, 40% of DC plans offered matching employer contributions only, 13% offered nonmatching employer contributions only, and 40% offered both matching and nonmatching employer contributions. PSCA 2010, *supra* note 31, at 26.

158 *See, e.g.*, Peter J. Brady, *Pension Nondiscrimination Rules and the Incentive to Cross Subsidize Employees*, 6 J. PENSION ECON. & FIN. 127, 129 (2007).

159 Australia adopted an employer-based, mandatory DC plan scheme in 1992. In addition to a means-tested pension for low-asset individuals, Australia requires employers to contribute 9% of employee earnings to a retirement savings account. WILLIAM G. GALE ET AL., AUTOMATIC 91 (2009). Because Australia has achieved high individual savings rates and broad coverage at low cost to the government, some have called its system "among the best in the world." JULIE AGNEW, CTR. FOR RET. RESEARCH AT BOS. COLL., ISSUE BRIEF NO. 13-5, AUSTRALIA'S RETIREMENT SYSTEM: STRENGTHS, WEAKNESSES, AND REFORMS 1 (2013), *archived at* http://perma.cc/6EMZ-8UTX. This success is not surprising if one takes the lessons of behavioral science seriously.

160 To receive preferential tax treatment, 401(k) plan sponsors must satisfy nondiscrimination requirements that link the benefits that may be received by highly compensated employees with those received by nonhighly compensated employees. The rules ensure that lower-compensated employees receive a substantial fraction of the plan's benefits. *See* I.R.C. § 401(k)(3) (2012). ERISA provided a safe harbor for the nondiscrimination rules that requires the employer to make either (1) matching contributions on behalf of nonhighly compensated employees in the amount of 100% for the first 3% of employee contributions and 50% on the next 2% of employee contributions; or (2) a nonelective contribution for each eligible nonhighly compensated employee of at

IRA proposed by the Obama Administration would *prohibit* employers from contributing to the accounts.[161]

More generally, tax-subsidized DC retirement savings plans appear to do a poor job on all three critical dimensions of retirement policy. They do so for reasons behavioral science scholarship has documented in painful detail. Instead of looking for tweaks to tax-subsidized, employer-sponsored DC plans, then, the true import of behavioral research might very well be that we should be thinking in terms of different policy tools altogether. For example, tax subsidies for employer-sponsored DC plans could be scrapped in favor of a federally sponsored mandatory individual retirement account that is funded by payroll deductions, invested in a state-of-the-art lifecycle investment fund, and paid out upon reaching retirement age in the form of an annuity that supplements Social Security.[162] While these sorts of "individual accounts" have been proposed by conservatives as ways to reform Social Security,[163] behavioral research suggests that such an approach may be better viewed as an alternative to 401(k)s and IRAs.

III. CONSUMER CREDIT

The consumer credit market has received renewed attention in the wake of the recent financial crisis, itself precipitated by a wave of defaults on residential mortgage loans. In response, the Dodd-Frank Act[164] created a new agency charged with regulating consumer loans,

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least 3% of compensation. *Id.* §§ 401(k)(12)(A)(i), 401(k)(12)(B), 401(k)(12)(C). Under the safe harbor added by the Pension Protection Act of 2006, an automatic enrollment plan is deemed in compliance with nondiscrimination requirements if the employer makes either (1) matching contributions on behalf of nonhighly compensated employees in the amount of 100% for the first 1% of employee contributions and 50% on the next 5% of employee contributions; or (2) a nonelective contribution for each eligible nonhighly compensated employee of at least 3% of compensation. *Id.* § 401(k)(13)(D)(i). While the standards for nonelective contributions are identical in the two safe harbors, an employer providing the minimum match sufficient to meet the PPA safe harbor would pay less as a percentage of compensation than would an employer providing the minimum match sufficient under the original ERISA safe harbor (3.5% versus 4.0%).

[161] The budget provides few specifics about the automatic IRA proposal. *See* OFFICE OF MGMT. & BUDGET, *supra* note 67, at 127. However, the original paper that proposed an automatic IRA system recommended prohibiting nonelective employer contributions, ostensibly to avoid crowding out already existing forms of employer-sponsored defined contribution activity. *See* J. MARK IWRY & DAVID C. JOHN, RET. SEC. PROJECT, PURSUING UNIVERSAL RETIREMENT SECURITY THROUGH AUTOMATIC IRAS 10 (2009), *archived at* http://perma.cc/9YX-LLJ7. Moreover, the Obama Administration published an explanatory document making clear that the proposed automatic enrollment IRAs would be funded by employee payroll deductions. *See* DEP'T OF THE TREASURY, *supra* note 144, at 125.

[162] For a reform proposal along these lines, see TERESA GHILARDUCCI, WHEN I'M SIXTY-FOUR 260–93 (2008).

[163] *See, e.g.*, Martin Feldstein & Elana Ranguelova, *Individual Risk in an Investment-Based Social Security System*, 91 AM. ECON. REV. 1116 (2001).

[164] Pub. L. No. 111-203, 124 Stat. 1376 (codified as amended in scattered sections of the U.S. Code).

the Consumer Financial Protection Bureau,[165] which is expected to lead to regulatory change. Moreover, the last decade has witnessed a burgeoning behavioral literature on consumer credit that provides a new intellectual foundation for some form of government intervention. Scholarly work has documented ways that bounded rationality and bounded willpower result in socially costly consumer credit market mistakes. Mortgage loans to consumers who were in no position to pay them off is the most visible example. Those mistakes are then amplified by the strategic behavior of firms, which have powerful incentives to design contracts to exploit these behavioral irrationalities.

The dominant approach in BLE to consumer credit regulation limits itself, yet again, to choice-preserving interventions. The principal policy tool suggested is mandatory disclosure that will, it is argued, enable correction of consumers' systematic mistakes. A second tool is a form of default rule referred to as a "sticky default"; while not mandating use of any particular contractual form, these defaults are designed to make it costly to opt out of a "plain vanilla," easy-to-understand form. As with retirement savings, interventions that would explicitly limit choice are excluded from detailed or sustained analysis from the very start.

Our story here is much the same: the BLE approach fails to take its own behavioral insights seriously enough. BLE inappropriately truncates its policy analysis by excluding policy tools that might be optimal from a social-welfare perspective but that could not be sold as "preserving choice." Mandating new forms of disclosure is unlikely to significantly improve outcomes when (1) the underlying contractual complexity would remain and (2) firms have strong incentives to undermine choice in response to the required disclosures. In addition, the sticky default rule approach is once again, in effect, largely a way to wrap a mandate in a choice-preserving facade. Reliance on the illusion of choice avoids grappling with the difficult tradeoffs that confronting such mandates directly would pose.

A complete behavioral approach would more comprehensively explore alternative regulatory tools, such as product regulation or ways to lower firms' incentives to exploit consumer mistakes, that are perhaps better designed to account for consumer behavioral irrationalities. It would also compare the costs and benefits of disclosure mandates and default rules to those of a full range of regulatory options.

A. The Neoclassical Account of the Policy Problem

In the neoclassical account, consumer credit markets allow households to move income from the future into the present, which enables

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[165] Establishment of the Bureau of Financial Protection, 12 U.S.C. § 5491 (2012).

households to finance purchases of expensive consumer durables like cars and homes, to make investments in education, and to smooth their consumption despite changes in their income over their lifetimes. Consumers are assumed to be able to analyze competing credit offers and choose the product and level of borrowing that maximizes their well-being.

In this account, the primary market failures here are due to asymmetric information and imperfect competition. Asymmetric information stems from consumers having better information than lenders about their own ability to repay and about the actions they take that affect their ability to repay. This market failure entails the borrower using this information advantage to exploit the lender and thus does not justify *consumer* protection regulation. Rather, it explains private arrangements and associated legal institutions that protect lenders, most importantly collateral and security interests. One potential consequence of information asymmetry in this market is an inefficient reduction in credit.[166]

Consumer credit markets may also feature imperfect competition.[167] Searching for and switching to a lower-cost credit card, for example, is costly.[168] As a result, credit card issuers can charge prices above their costs of providing credit, leading to an inefficiently low level of borrowing.

The regulatory scheme for consumer credit markets in the United States has shifted over time from product regulation to mandatory disclosure. State usury laws capping the interest rate allowed on consumer loans were once important regulations.[169] Some states still ban or cap small dollar loans, such as payday loans made by nonbank consumer finance companies.[170] However, the standard neoclassical anal-

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166 *See* Joseph E. Stiglitz & Andrew Weiss, *Credit Rationing in Markets with Imperfect Information*, 71 AM. ECON. REV. 393, 393 (1981).

167 *See* Lawrence M. Ausubel, *The Failure of Competition in the Credit Card Market*, 81 AM. ECON. REV. 50, 75–76 (1991).

168 *Id.* at 68–70; Haiyan Shui & Lawrence M. Ausubel, *Time Inconsistency in the Credit Card Market* 26 (Working Paper, 2005), *archived at* http://perma.cc/9NPN-YSPZ (estimating average consumer switching costs of $150 in the credit card market).

169 For much of American history, the most relevant usury laws were state laws. In the nineteenth century, the average state maximum rate of interest fluctuated between 6% and 11%. *See* Hugh Rockoff, *Prodigals and Projectors: An Economic History of Usury Laws in the United States from Colonial Times to 1900*, at 45 fig.1 (Nat'l Bureau of Econ. Research, Working Paper No. 9742, 2003), *archived at* http://perma.cc/7RWV-ADXR. Many states continue to maintain some form of usury rate ceiling. At the federal level, the National Bank Act, originally passed by Congress in 1863, provides that no association may charge an interest rate above the rate allowed by the state law in which it is located. Where no state law exists, an association may not charge more than 7% interest. 12 U.S.C. § 85 (2012).

170 According to the Consumer Federation of America, eighteen states and the District of Columbia continue to place restrictions on small dollar loans, such as payday loans. *See Legal Sta-*

ysis is that usury laws are inefficient, resulting in high-risk borrowers being cut off from credit.[171] While imperfect competition could explain high interest rates and hence justify caps on rates, neoclassical economists typically view high interest rates as largely stemming from the high credit risk and transaction costs of consumer loans.[172]

Regardless of their neoclassical merits, state usury laws no longer have a substantial impact on consumer credit, in part due to preemption by the National Bank Act.[173] With the notable exception of restrictions on small dollar loans in some states,[174] the principal regulation of consumer lending today takes the form of federal disclosure mandates. For example, the Truth in Lending Act[175] (TILA) mandates that the cost of credit be disclosed using certain forms and summary terms, such as the Annual Percentage Rate (APR).[176] Such mandatory disclosure rules are best understood as responding to the bounded rationality of consumers, as we now describe.

B. The Behavioral Account of the Policy Problem

The behavioral account of consumer credit reveals that consumers are only boundedly rational. Consider the credit cards in your wallet. What are the interest rates that apply to borrowing on each of them? Under the terms of the cardholder agreements, what happens if you are late in making a payment on each card? Does the interest rate change? If you do not know the answers to these questions, you are not alone.

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tus of Payday Loans by State, CONSUMER FED'N AM., http://www.paydayloaninfo.org/state-information (last visited Mar. 1, 2014), *archived at* http://perma.cc/78SS-VCD6.

171 *See, e.g.*, Rudolph C. Blitz & Millard F. Long, *The Economics of Usury Regulation*, 73 J. POL. ECON. 608, 613 (1965) ("While the oft-stated purpose of usury legislation is to help that class of debtors which includes the landless peasants, poor urbanites, and very small businessmen, maximum rates are likely to affect them adversely by excluding them from the market.").

172 *See, e.g.*, Wendy Edelberg, *Risk-Based Pricing of Interest Rates for Consumer Loans*, 53 J. MONETARY ECON. 2283, 2284–85 (2006).

173 In 1978, the U.S. Supreme Court held that a national bank based in Nebraska could charge its credit card customers in Minnesota an interest rate that complied with the applicable Nebraska statutory interest rate even though that rate exceeded the maximum set by the Minnesota Credit Card Act. Marquette Nat'l Bank of Minneapolis v. First of Omaha Serv. Corp., 439 U.S. 299 (1978). The Court based its decision on a provision of the National Bank Act that authorizes a national bank to charge interest rates allowed by the laws of the state "where the bank is located," 12 U.S.C. § 85 (2012). *See Marquette Nat'l Bank*, 439 U.S. at 310–18. The decision effectively deregulated consumer interest rates by allowing lenders based in states without strict usury ceilings to export those rates to consumers in states with strict usury laws. For a historically grounded argument that courts should become much more careful and demanding before finding federal preemption of state laws, including common law, that regulate national banks, see Roderick M. Hills, Jr., *Exorcising* McCulloch*: The Conflict-Ridden History of American Banking Nationalism and Dodd-Frank Preemption*, 161 U. PA. L. REV. 1235 (2013).

174 *See* CONSUMER FED'N OF AM., *supra* note 170.

175 15 U.S.C. §§ 1601–1667f (2012).

176 *Id.* §§ 1637–1638.

Modern credit card contracts are complicated. They employ a complex web of terms including the annual fee, the grace period of interest-free borrowing, the interest rate used to calculate finance charges when the balance is not paid off before the end of the grace period, the minimum payment that must be made each month, the late fee that applies after a certain number of late payments, the elevated default interest rate that applies if certain conditions occur, and many more. While *homo economicus* is assumed to carefully read and understand credit card agreements, many real consumers do not.[177]

Behavioral insights suggest that consumers do a poor job of optimizing borrowing decisions when faced with complex credit contracts because they do not comprehensively understand all the contractual terms they confront. One view is that, faced with these cognitive limitations, consumers focus on only a few salient terms and ignore many of the complicated terms governing fees and penalties.[178] As a result, they systematically underestimate the actual contractual cost of borrowing and borrow too much.[179]

Contractual complexity may also reduce competition. Because competing lenders' products are multidimensional and hard to understand, determining the cheapest-cost credit product is difficult.[180] This difficulty in consumer comparison-shopping for credit might enable lenders to charge supercompetitive prices. Note that, standing alone, this competitive effect on prices would tend to inefficiently *reduce* consumer borrowing.

Compound interest is another source of consumer confusion. Consider consumer survey responses to the following question:

> Suppose you owe $1,000 on your credit card and the interest rate you are charged is 20% per year compounded annually. If you didn't pay anything off, at this interest rate, how many years would it take for the amount you owe to double?
>
> (i) 2 years;
>
> (ii) Less than 5 years;

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177 *See, e.g.*, MACRO INT'L, DESIGN AND TESTING OF EFFECTIVE TRUTH IN LENDING DISCLOSURES, at ii–iii (2008), *archived at* http://perma.cc/PG75-LMJL (finding that certain disclosure methods had a small impact on awareness of relevant terms for many consumers); U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-06-929, CREDIT CARDS: INCREASED COMPLEXITY IN RATES AND FEES HEIGHTENS NEED FOR MORE EFFECTIVE DISCLOSURES TO CONSUMERS 6 (2006) (noting that credit card contracts are often written at a level of complexity beyond the reading ability of the average American and that disclosures are often in small print or otherwise difficult to read).

178 BAR-GILL, *supra* note 10, at 18–19.

179 *Id.* at 98–99.

180 *See, e.g., id.*; Cass R. Sunstein, *Boundedly Rational Borrowing*, 73 U. CHI. L. REV 249, 251 (2006); Lauren E. Willis, *Decisionmaking and the Limits of Disclosure: The Problem of Predatory Lending: Price*, 65 MD. L. REV. 707, 751–54 (2006).

(iii) Between 5 and 10 years;

(iv) More than 10 years;

(v) Do not know;

(vi) Prefer not to answer.[181]

Straightforward calculation using a spreadsheet tells us that the doubling time is three years and ten months, so the correct answer is "(ii) Less than 5 years." But figuring this out without a spreadsheet is hard; fewer than 36% of respondents chose the correct response.[182] 32% chose a longer period, a mistake that could lead to excessive borrowing.[183] 18% reported that they did not know.[184]

But behavioral insights demonstrate that it is not just cognitive calculative failings that we have to worry about in credit markets: self-control problems constitute another behavioral market failure. Economists typically model these self-control problems by assuming a form of myopia or present-bias. If consumers were able to take long-run views, looking at their future consumption and borrowing decisions, they might prefer a more modest amount of consumption and little or no borrowing. But faced with the decision whether to swipe a credit card and make a purchase in the moment, such consumers often choose to borrow a considerable sum.[185] Moreover, consumers are frequently naïve about the extent of their self-control problems: they regularly underestimate how much they will borrow in the future.[186]

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[181] Annamaria Lusardi & Peter Tufano, *Debt Literacy, Financial Experiences, and Overindebtedness* 5 (Nat'l Bureau of Econ. Research, Working Paper No. 14808, 2009), *archived at* http://perma.cc/TAM3-8NNW.

[182] *Id.* One way to get this approximately right without resort to a spreadsheet is to apply the "Rule of 72": to find the amount of time it takes for an investment to double, divide seventy-two by the interest rate (e.g., 72 / 20 = 3.6). *Id.* Additionally, applying 20% interest each year without compounding would lead to a 100% interest rate in five years, so the sum must double in less than five years if interest is compounded. *Id.*

[183] *Id.* at 30 tbl.1.

[184] *Id.* at 5.

[185] *See, e.g.*, Laibson, *supra* note 46, at 461–63 (showing that present-biased consumers with access to instantaneous credit will borrow and consume more than their long-run selves prefer).

[186] *Id.* Professors Haiyan Shui and Lawrence Ausubel report additional evidence from the credit card market on consumer self-control problems. The credit card issuer in the study randomly assigned a set of potential new customers to receive different credit card offers. Substantially more consumers who were offered a 4.9% introductory interest rate for six months accepted the offer than did those who were offered a 7.9% introductory interest rate for twelve months. Consumers' actual borrowing and payment behavior under the cards showed that the group with the lower but shorter-term teaser rate paid more in interest on average than they would have with the higher but longer-term teaser rate card, and most consumers did not switch out of the contract after the end of the introductory period. One explanation for the observed results is that consumers are naïve about how long they will carry a balance on their credit cards and have self-control problems in limiting spending when they have access to credit. Shui & Ausubel, *supra* note 168, at 27–29. Another study developed a measure of borrower overconfidence based on the discrepancy between the borrower's intention to pay off his credit card balance each month and his

Such self-control problems make consumers worse off by their own lights. Generally, economists take the perspective of the consumer's long-run self in evaluating the welfare costs of this behavior.[187] Rather than respecting the preferences of present-biased consumers for immediate gratification, economists evaluate welfare from the perspective of the consumer's long-run preference *not* to borrow and consume so much. From that perspective, consumers with self-control problems borrow too much.[188] And there is growing evidence that self-control problems do indeed play an important role in consumer borrowing decisions.[189]

So credit markets start with *two* sources of consumer decisionmaking pathologies — bounded rationality and bounded self-control. Moreover, these irrationalities are compounded by the strategic behavior of lenders. When profit-maximizing firms meet imperfectly optimizing consumers in the credit market, competition gives firms strong incentives to design their contracts in ways that exacerbate consumers' decisional limitations.[190] Lenders may exploit bounded rationality, for example, by increasing the complexity of the credit contract and lowering the price of the salient contract terms, while packing more of the overall contract cost into nonsalient, poorly understood terms.[191] Indeed, the fact that contracts are structured in

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actual past behavior. The study found that, compared to other borrowers, the unrealistically optimistic borrowers were less sensitive to the APR, and more sensitive to the annual fee, in choosing among credit card offers. Sha Yang et al., *Unrealistic Optimism in Consumer Credit Card Adoption*, 28 J. ECON. PSYCHOL. 170, 171–72 (2007).

187 *See, e.g.*, Ted O'Donoghue & Matthew Rabin, *Optimal Sin Taxes*, 90 J. PUB. ECON. 1825, 1829 (2006).

188 Heidhues & Kőszegi, *supra* note 28, at 2280.

189 *See, e.g.*, Laibson et al., *supra* note 47, at 5; Paige Marta Skiba & Jeremy Tobacman, *Payday Loans, Uncertainty, and Discounting: Explaining Patterns of Borrowing, Repayment, and Default* 2 (Vanderbilt Univ. Law Sch. Law & Econ., Working Paper No. 08-33, 2008). In another recent study, participants' degree of present bias was measured through an incentivized choice experiment. Participants were asked to indicate whether they preferred to receive a certain sum of money today or an even larger sum of money in one month, for a large number of such pairs. Then their preferences for receiving a sum of money in six months versus a larger sum of money in seven months were similarly elicited. To give participants an incentive to truthfully respond, a lottery was held and the winners were actually paid according to one of their choices. This measure was then compared to the participants' actual credit card borrowing using credit bureau reports. The study found that present-biased participants borrowed significantly more on their credit cards than participants who did not exhibit such a self-control problem. Stephan Meier & Charles Sprenger, *Present-Biased Preferences and Credit Card Borrowing*, 2 AM. ECON. J.: APPLIED ECON. 193, 195–98 (2010).

190 *See* BAR-GILL, *supra* note 10, at 8; Michael S. Barr et al., *Behaviorally Informed Regulation*, *in* THE BEHAVIORAL FOUNDATIONS OF PUBLIC POLICY 440, 444 (Eldar Shafir ed., 2013).

191 *See* BAR-GILL, *supra* note 10, at 18–23; Xavier Gabaix & David Laibson, *Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets*, 121 Q.J. ECON. 505, 506 (2006).

ways that are hard to explain from the perspective of neoclassical economics, but that are profit maximizing when consumers make systematic mistakes, constitutes important evidence that these decision-making problems play a significant role.[192]

Lenders also have an incentive to exploit borrowers' self-control problems. When borrowers are present biased and do not fully appreciate their self-control problems, lenders increase profits by offering credit contracts in which the borrower would pay little for credit if the loan were paid off quickly but that become very expensive if the borrower instead ends up paying the loan off more slowly than he anticipated.[193] Teaser rates are one example.[194] Lenders commonly provide an initial low "teaser" interest rate for a temporary period followed by a higher "go-to" rate that applies later. A randomized field experiment run by a large credit card issuer, for example, provides strong evidence that teaser interest rates result in consumer mistakes.[195] Similarly, lenders offer adjustable rate mortgages that start at seductively low rates but that can then spike upward. This results in naïve present-biased consumers underestimating the cost of credit and borrowing *more* than is socially optimal. This interaction between profit-maximizing firms and present-biased consumers thus exacerbates consumer mistakes.

C. The BLE Approach to Regulating Consumer Credit

The dominant BLE approach in this area is to reform mandatory disclosures. Some BLE scholars remain forever hopeful that these deep problems in consumer rationality and willpower, combined with strategic behavior by producers, can nonetheless be solved with even more, or better, disclosure. Other BLE scholars do not analyze optimal policy responses but instead self-consciously focus on disclosure alone out of political hopelessness that optimal policy — whatever it might be — could be adopted. For example, in his recent book, Professor Oren Bar-Gill, a leading contributor in the consumer credit arena, limits his prescriptive analysis to disclosure, partly (and expressly) for these political reasons.[196]

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192 *See, e.g.*, BAR-GILL, *supra* note 10, at 2; Michael D. Grubb, *Selling to Overconfident Consumers*, 99 AM. ECON. REV. 1770, 1770 (2009); Stefano DellaVigna & Ulrike Malmendier, *Contract Design and Self-Control: Theory and Evidence*, 119 Q.J. ECON. 353, 390–91 (2004); Heidhues & Kőszegi, *supra* note 28, at 2280–81.

193 *See* Heidhues & Kőszegi, *supra* note 28, at 2280.

194 *See* DellaVigna & Malmendier, *supra* note 192, at 377–79.

195 *See supra* note 186.

196 BAR-GILL, *supra* note 10, at 32 ("[D]isclosure mandates are the least intrusive form of regulation and, thus, the form of regulation most likely to be adopted."). It is noteworthy that in describing this limitation, Bar-Gill cites to the two foundational articles that established the soft paternalism approach to the field, which illustrates their influence in establishing this paradigm. *Id.*

Bar-Gill's main, and provocative, policy innovation is to require lenders to disclose product *use* information.[197] Traditional disclosure regulation, such as TILA, requires lenders to disclose product attributes in particular ways, like the now-ubiquitous APR. But because part of behavioral market failure entails consumers' misperceptions of their own use of the product, Bar-Gill advocates that lenders be required to disclose either statistical information about average use or the borrower's own specific historical use of their product.[198] As a further step, Bar-Gill suggests that lenders be required to combine product-use and product-attribute information to disclose summary Total Cost of Ownership (TCO) and Total Benefits of Ownership (TBO) measures.[199] One proposal is that credit card issuers be required to disclose annually the total interest and fees charged to the borrower on the account over the past, say, three years.[200] Other BLE scholars have recommended similar disclosure reforms.[201] Indeed, some behavioral scholars argue that "personalized disclosure" of this sort will generally be the wave of the future and resolve inefficiencies in credit markets.[202]

The main benefit recited for such reforms is that they would improve the ability of consumers to comparison shop for credit, which would facilitate competition in the consumer credit market.[203] Bar-Gill also hypothesizes that such a reformed summary disclosure mandate would result in competition between lenders focused on providing the product with the lowest TCO and hence would remove the incentive of lenders to make their products more complex. That, he argues, would result in a simplification of contracts.[204] In addition to reforming mandatory disclosure provided directly to consumers, BLE scholars have also advocated so-called "smart disclosure": requiring lenders

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at 32 n.31. In work co-authored with one of us, Bar-Gill has analyzed and endorsed one intervention — a ban on credit card teaser rates — that goes beyond nudges, further reinforcing that his restriction to disclosure in his recent book is not based on a view that such policies are optimal. *See* Oren Bar-Gill & Ryan Bubb, *Credit Card Pricing: The Card Act and Beyond*, 97 CORNELL L. REV. 967, 1005–11 (2012).

197 BAR-GILL, *supra* note 10 at 33–39; Oren Bar-Gill & Franco Ferrari, *Informing Consumers About Themselves*, 3 ERASMUS L. REV. 93, 93 (2010); *see also* Emir Kamenica et al., *Helping Consumers Know Themselves*, 101 AM. ECON. REV. 417, 418–19 (2011).

198 BAR-GILL, *supra* note 10, at 106–07.

199 *Id.* at 37–40.

200 *Id.* at 111.

201 *See, e.g.*, NUDGE, *supra* note 25, at 143–44; Elizabeth Renuart & Diane E. Thompson, *The Truth, the Whole Truth, and Nothing but the Truth: Fulfilling the Promise of Truth in Lending*, 25 YALE J. ON REG. 181, 219 (2008); Sunstein, *supra* note 180, at 260–61. Professor Lauren Willis also advocates for a disclosure reform but pairs it with product regulation. Willis, *supra* note 180, at 821–23; *see infra* p. 1659.

202 *See* Sunstein, *supra* note 12, at 1871.

203 *See, e.g.*, BAR-GILL, *supra* note 10, at 39; NUDGE, *supra* note 25, at 139–41.

204 BAR-GILL, *supra* note 10, at 38–39.

to disclose information on consumers' past usage of the product in machine-readable format in order to enable competitors and intermediaries to use that information to enhance competition in the market.[205]

A second BLE policy recommendation is a form of default rule.[206] Professors Barr, Mullainathan, and Shafir, after first noting that direct product regulation might prohibit good products and stifle innovation, propose instead what they call a "sticky opt-out mortgage system" to address behavioral failures regarding mortgage loans.[207] In their scheme, lenders would be required to offer consumers some standard, "plain-vanilla" mortgage contract, such as a fixed rate mortgage.[208] This standard contract corresponds to the default under their system. Nonetheless, lenders and borrowers would remain free to opt out of this default and use a different mortgage contract. But to make the default contract "sticky," lenders would be subject to more stringent disclosure requirements aimed at conveying effectively the risks and terms of the contract to the borrower if he opts out and uses a different contract.[209] The theory is that this creative approach would again facilitate comparison shopping — to compare competing "plain-vanilla" contract offers would be relatively straightforward — as well as prompt more careful consumer decisionmaking by putting the consumer on notice when he accepts a nonstandard contract.[210]

The Obama Administration included a "sticky opt-out" mortgage system in its financial reform proposals,[211] but this "plain-vanilla" requirement was left out of the Dodd-Frank legislation after complaints from the financial industry. Nonetheless, a version was included through two provisions of the Dodd-Frank Act: the Act defined the terms of a Qualified Mortgage[212] and directed regulators to define the

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[205] *See id.* at 111; Samuel Issacharoff, *Disclosure, Agents, and Consumer Protection*, 167 J. INSTITUTIONAL & THEORETICAL ECON. 56, 64–67 (2011); Memorandum from Cass R. Sunstein, Adm'r, Office of Info. & Regulatory Affairs, to The Heads of Exec. Dep'ts & Agencies, Informing Consumers Through Smart Disclosure (Sept. 8, 2011). The general hope that disclosing information in simpler, more effective forms to consumers can overcome behavioral biases has been around for many decades, of course. *See, e.g.*, Richard H. Pildes & Cass R. Sunstein, *Reinventing the Regulatory State*, 62 U. CHI. L. REV. 1, 107–12 (1995) (cataloguing studies on how to more effectively design information to inform consumers of environmental, health, and safety risks).

[206] *See, e.g.*, Campbell et al., *supra* note 56, at 99.

[207] *See* Barr et al., *supra* note 190, at 449.

[208] *Id.* at 450.

[209] *Id.* One approach they offer is to allow borrowers who opted out to challenge the disclosures in bankruptcy or foreclosure proceedings: "[I]f 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 the loan contract." *Id.*

[210] *Id.*

[211] *See* DEP'T OF THE TREASURY, FINANCIAL REGULATORY REFORM: A NEW FOUNDATION 66 (2009).

[212] 15 U.S.C. § 1639c(b)(2)(A) (2012).

terms of a Qualified Residential Mortgage.[213] Compliance with the former results in a presumption that the lender has complied with the required underwriting standards,[214] while compliance with the latter qualifies the mortgages for exemption from new rules that require securitizers to retain an interest in mortgage-backed securities they sponsor.[215] Together, these rules might result in a version of a "sticky opt-out" mortgage system: standard mortgage forms and costs imposed on lenders who opt out of them.[216] A similar "sticky default" approach has been recently applied to reduce the use of costly overdraft loans in the deposit account market, as we discuss at length below.

D. The Limits of the BLE Approach

BLE's focus on disclosure and sticky default rules (with opt-outs) in this area suffers from many of the same analytic problems as does the field's approach to retirement savings. First, the disclosure reforms that are the primary focus of BLE are unlikely to significantly improve outcomes in consumer credit markets. Second, BLE scholars advocate for sticky default rules that clothe implicit mandates in a choice-preserving guise. As a result, they do not analyze the important tradeoffs posed by such implicit mandates and, moreover, fail to consider seriously whether explicitly mandatory product regulation would perform better than a sticky default.

Consider mandatory disclosure first. The hope here is that policymakers can perfect a set of required disclosures so that one source of behavioral irrationality — consumer cognitive defects that affect the accuracy of calculations — can be overcome. For credit products, the main BLE enhancement of disclosure is to simplify and summarize.[217] Bar-Gill would boil down your credit card agreement to a TCO number that reflects the all-in expected cost of the contract based on the lender's information about your likely future use patterns.[218]

But we are skeptical that such an approach would be effective,[219] ironically for the very behavioral reasons BLE itself identifies. First,

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[213] *Id.* § 78o-11(e)(4)(B).

[214] *Id.* § 1639c(b)(1).

[215] *Id.* § 78o-11(e)(4)(A).

[216] *See* Barr et al., *supra* note 190, at 449–53.

[217] *See* Cass R. Sunstein, Essay, *Empirically Informed Regulation*, 78 U. CHI. L. REV. 1349, 1402–04 (2011).

[218] BAR-GILL, *supra* note 10, at 37–40.

[219] *See* Pildes, *supra* note 9, at 862 (arguing that "better information disclosure [about mortgage structures] hardly seems an adequate, or even an effective, response to the most dramatic financial crisis the U.S. has faced since the Great Depression" because disclosure focuses only on the consumer demand side, not on the incentive structures that led financial institutions to supply these complex products). Professors Omri Ben-Shahar and Carl Schneider's forthcoming book on disclosure provides a wide-ranging critique of the ineffectiveness of disclosures across a broad set

the underlying complexity of the product, both in terms of its inherent features and the ways individual consumers would actually behave under the contract, would remain. (And of course, under basic rules of contract law, those contractual details must be disclosed as well.) Consumers care not just about some mandated summary measure of the cost of credit but also about the underlying details of the contract. For example, consumers care about the monthly payment as a way to evaluate the affordability of the loan, consumers care about the introductory interest rate if they plan on paying off the loan prior to its expiration, and consumers care about the interest rate charged in the event they make every payment on time if they plan and expect to do so.[220]

Second, this market will not remain static. As BLE scholars and others have documented, policymakers cannot discount the incentives lenders have to undermine the effectiveness of the summary disclosure measure. Lenders make a living by studying consumer psychology and figuring out how to manipulate it.[221] As Professor Ed Glaeser succinctly puts it, "One should expect to see a proliferation of misleading signals and other cues when incorrect beliefs are complements to buying sellers' commodities . . . ."[222] In consumer credit markets, consumers who underestimate how much and how long they will borrow will use credit more, providing the complementarity that incentivizes lenders to actively encourage such false beliefs. Accordingly, we expect lenders facing a new disclosure mandate to find ways to make

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of domains. OMRI BEN-SHAHAR & CARL E. SCHNEIDER, MORE THAN YOU WANTED TO KNOW (forthcoming).

[220] Ben-Shahar and Schneider persuasively make this point with respect to the current summary measure mandated in mortgage disclosures: the APR. They write:

> [W]hile this APR lets you compare, say, several 30-year fixed rate loans, it does not help with some crucial dilemmas. A few examples: long-term loans have higher interest rates but lower monthly payments than shorter loans. So do you care more about a low APR (paying less interest) or a low monthly payment? If interest rates fall and you refinance, you may owe a prepayment penalty. Do you want a cheaper loan with that penalty or a costlier loan without it? How much costlier? You can lower your monthly payments by buying points (a kind of prepaid interest). Their value turns on your likelihood of paying off the loan early or refinancing, which turns on things like interest rates and your income. The adjustable-rate mortgage presents similar problems. Its interest rate fluctuates, so you cannot anticipate your payments. Moreover, ARMs sometimes offer tasty teaser rates and negative amortization, which make a house more affordable now but can increase the total you pay.

BEN-SHAHAR & SCHNEIDER, *supra* note 219, at 18–19.

[221] Bar-Gill quotes a former executive from Citigroup's card unit: "No other industry in the world knows consumers and their transaction behavior better than the bank card industry. It has turned the analysis of consumers into a science rivaling the studies of DNA." BAR-GILL, *supra* note 10, at 108 (quoting Duncan A. MacDonald, *Viewpoint: Card Industry Questions Congress Needs to Ask*, AM. BANKER, Mar. 23, 2007, at 10) (internal quotation mark omitted).

[222] Edward L. Glaeser, *Psychology and the Market*, 94 AM. ECON. REV. 408, 410 (2004).

other features of the contract more salient to consumers than the mandated summary measure.[223]

But third, and even more fundamentally, enhanced disclosure deals with only one of the two dimensions of consumer irrationality that behavioral work itself has identified over and over. Mandatory disclosure is simply not well suited to solving self-control problems. Yet in their precommitment to only choice-preserving regulatory tools, BLE disclosure advocates suddenly put the self-control problem to the side when considering policy reforms.

Given the structure of the self-control problem, solving it requires forcing or enticing the consumer not to engage in a transaction that, even with a clear-eyed understanding of the terms and risks, the consumer in the moment wants to make. But while Odysseus could have himself forcibly lashed to the mast, no easy way exists for consumers to commit themselves not to open that store line of credit promising "no payments and no interest for the next 12 months."[224] Disclosure certainly offers no real commitment device. After all, Odysseus did not instruct his sailors to provide him with a "Total Cost of Swimming with the Sirens" disclosure as soon as he got within earshot. Deferred-cost contractual structures are going to remain attractive to present-biased consumers — even if they understand fully the nature of the contract and their future behavior.

Disclosure might succeed at making consumers more aware of their self-control problem. Moreover, some of the canonical papers in the literature on self-control problems and credit contracting suggest that awareness of one's self-control problem — "sophistication," in the parlance of the field — is sufficient to eliminate the costs of the problem.[225]

However, there are several reasons to be skeptical of the "sophistication by disclosure" approach. First, consumer overoptimism works against it. Voluminous evidence from psychology shows that individuals systematically overestimate their ability and competence.[226] A classic finding is that most people believe that they are better than average drivers.[227] Thus, even when faced with disclosures based on

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[223] The reaction of banks to new rules on overdraft fees provides a nice illustration of how lenders can undermine disclosure rules. *See infra* notes 243–267 and accompanying text.

[224] Some consumers reportedly freeze their credit cards in blocks of ice as a commitment device that keeps them from making impulsive purchases. Ausubel, *supra* note 167, at 72.

[225] *See, e.g.*, DellaVigna & Malmendier, *supra* note 192, at 355; Heidhues & Kőszegi, *supra* note 28, at 2296–97.

[226] *See, e.g.*, Pauline Austin Adams & Joe K. Adams, *Confidence in the Recognition and Reproduction of Words Difficult to Spell*, 73 AM. J. PSYCHOL. 544, 547 (1960) (finding that people are approximately 80% accurate at spelling words when they rate themselves as 100% confident that they produced the correct spelling).

[227] *See* Ola Svenson, *Are We All Less Risky and More Skillful than Our Fellow Drivers?*, 47 ACTA PSYCHOLOGICA 143, 145 (1981).

individualized assessments of the consumer's likely future behavior, many consumers will be tempted to believe that "this time it's different" — that the teaser rate is all that matters since this time they will pay the loan off promptly. Naïveté and overconfidence persist despite consumers' accumulated experience of their own weakness of will. Printed words on a page are unlikely to cure what painful experience has not. As one psychological study concludes, "any attempt to change risk perceptions is hampered by the variety of strategies individuals can use to arrive at optimistic conclusions. People prefer to believe that their risk is below average and are reluctant to believe anything else."[228]

Second, the theoretical results showing that awareness of one's self-control problem eliminates its costs are based on unrealistic institutional assumptions. In particular, the models assume that once consumers accept a contract offer, they are locked into an *exclusive* relationship with the lender and that no competing lender can later make additional offers.[229] This exclusivity assumption allows the private market to supply perfect commitment devices. When consumers are perfectly sophisticated about their self-control problems and lenders can propose exclusive contracts, lenders will design contracts that commit the consumer to the consumer's long-run preferred level of borrowing.[230]

But this exclusivity assumption is inconsistent with how actual consumer credit markets function, as most people can attest based upon the never-ending teaser rate balance transfer offers that they receive. And once you allow competing lenders to make additional offers later, this private market in commitment devices breaks down.[231] The key reason is that, after signing an initial contract purportedly committing to a given level of borrowing, consumers will later have the ability and incentive to undo the commitment by refinancing the debt through contracts with competing lenders offering new terms.[232]

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[228] Neil D. Weinstein & William M. Klein, *Resistance of Personal Risk Perceptions to Debiasing Interventions*, 14 HEALTH PSYCHOL. 132, 139 (1995).

[229] *See* Heidhues & Kőszegi, *supra* note 28, at 2283–84. A similar assumption drives Professors Stefano DellaVigna and Ulrike Malmendier's result that self-control problems produce no welfare losses when consumers are aware of their problems. In particular, they assume that once a consumer enters into a contract with a producer in period 0, that contract is implemented in period 1 without competing firms having an opportunity to make a competing offer prior to the consumer's consumption decision in period 1. *See* DellaVigna & Malmendier, *supra* note 192, at 358. If instead a competing firm can offer the good at a lower cost in period 1, that firm can undo the commitment to lower consumption in the original contract. *See* Daniel Gottlieb, *Competition over Time-Inconsistent Consumers*, 10 J. PUB. ECON. THEORY 673, 674–75 (2008).

[230] Heidhues & Kőszegi, *supra* note 28, at 2287–88.

[231] Gottlieb, *supra* note 229, at 675.

[232] *Id.*; *see also* RAND SPIEGLER, BOUNDED RATIONALITY AND INDUSTRIAL ORGANIZATION 34–36 (2011). Analyzing a more general model of a market in which consumers suffer

Third, even a small amount of naïveté can have large welfare consequences, even with the unrealistic assumption of perfect commitment to the initial contract. The reason is that lenders can exploit even small mispredictions about future behavior by designing contracts that pack much of the cost of borrowing into terms that the consumer does not think she will trigger. As a result, the consumer substantially underestimates the cost of credit and overborrows.[233] This means that unless disclosure is *perfectly* successful at correcting consumers' understanding of their self-control problems, those problems still pose significant social costs.

Ultimately, the extent to which mandatory disclosure is effective at improving the operation of the consumer credit market is an empirical question. And the most rigorous study to date supports our skepticism — enhanced disclosure has little effect. Behavioral economists partnered with a large payday lender to conduct a randomized field experiment evaluating three different disclosure interventions designed on the basis of behavioral research.[234] In one, loan applicants were shown a comparison between the APR of the typical payday loan (443%) and the APR of alternative sources of credit like credit cards (16%).[235] The second compared the typical finance charge on a $300 payday loan over various periods (e.g., $270 for three months) to the cost of borrowing that sum on a typical credit card (e.g., $15 for three months).[236] The final treatment focused specifically on borrowers' underestimation of their future borrowing due to a self-control problem.[237] Applicants were given a simple figure showing the number of times a typical new payday borrower refinances the loan before paying it back.[238]

The only treatment with a statistically significant effect was the dollar-cost disclosure. Those participants borrowed in 48% of pay cycles, compared to 54% in the control group.[239] While statistically signifi-

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from self-control problems, Professor Botond Kőszegi finds that "the attempt of one firm to provide self-control to a consumer is undermined by the incentive of other firms to profit from the very self-control problem the consumer is trying to solve." Botond Kőszegi, *On the Feasibility of Market Solutions to Self-Control Problems*, 12 SWEDISH ECON. POL'Y REV. 65, 69 (2005).

233 Heidhues & Kőszegi, *supra* note 28, at 2288–89.

234 Marianne Bertrand & Adair Morse, *Information Disclosure, Cognitive Biases, and Payday Borrowing*, 66 J. FIN. 1865, 1866 (2011).

235 *Id.* at 1871.

236 *Id.* at 1871–73.

237 *Id.* at 1873.

238 The text of the graphic reads: "Out of 10 typical people taking out a new payday loan . . . 2 ½ people will pay it back without renewing[,] 2 people will renew 1 or 2 times[,] 1 ½ people will renew 3 or 4 times[, and] 4 people will renew 5 or more times." *Id.* at 1872 fig.2.

239 *Id.* at 1880–82.

cant, the magnitude of this effect is small. The effects of the other two disclosure treatments were statistically indistinguishable from zero.[240]

And yet, even this study represents a *best-case* scenario for disclosure. Here, the lender *agreed* to let a team of behavioral economists redesign its disclosures and not to work actively to undermine them. Disclosure mandates imposed on lenders in the wild are likely to be even less effective.[241]

Recognizing that better and more disclosure might not modify the behavior of individual consumers, some behavioralists and policymakers have begun to justify disclosure on second-order grounds: intermediaries will come into existence that *will* be able to make use of disclosed information and aggregate it effectively enough to enable rational individual consumer choice. Building on existing intermediaries like Yelp or air-travel sites, both the federal government and some academics suggest that the "smart disclosure" approach will work because it will enlist intermediaries and competitors to act on the consumer's behalf.

Although it is too early to know which fantasies about big data and the information economy will be realized, we are skeptical that intermediaries will succeed in dramatically reducing behavioral biases in consumer credit markets. The switch to intermediaries just moves the problem down a step: these intermediaries must then use disclosed information to fashion their own disclosures to consumers. An intermediary would thus face the same set of challenges as regulators in making disclosure effective. The underlying complexity of the product, for example, would still undermine any TCO disclosure devised by an intermediary; competing lenders would continue to have incentives to exploit mistakes by making certain features of the product like teaser rates salient to consumers; and so forth. Moreover, more effective dis-

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[240] *Id.* at 1882. The authors interpret these effects as "nontrivial." *Id.* at 1867. They write, "How large our 11% [6 percentage point] reduction in borrowing is relative to how much irrationality exists in payday borrowing is left to interpretation." *Id.* at 1868. We think the right interpretation is that the effects they found are insubstantial, particularly when two of the three treatments had no statistically significant effect. *See also* Campbell et al., *supra* note 56, at 102 ("Overall, these results raise questions about the form and efficacy of disclosure."); Issacharoff, *supra* note 205, at 62 ("[The Bertrand & Morse paper] suggests that even carefully designed messages about one of the most disadvantageous forms of consumer debt — payday lending, and its attendant exorbitant interest charges — has a frustratingly small influence on actual consumer behavior.").

[241] Professors Marianne Bertrand and Adair Morse argue that the opposite is true:

> [A]lthough the disclosure interventions we presented in this paper might be more "flashy" than what typically comes out of the regulatory process, there are also reasons to believe that a formal disclosure policy might be more effective than our experimental interventions. In particular, a formal policy would imply a permanent change, which could strengthen the effectiveness of the disclosure thanks to repeated exposure.

Bertrand & Morse, *supra* note 234, at 1891. They do not discuss the incentive of lenders to undermine mandatory disclosure, which we think is the first-order issue.

closure deals at best with bounded rationality, not with bounded willpower. In the retirement savings area, for example, intermediaries with strong financial incentives to educate people about appropriate rates of retirement saving, like Fidelity Investments, have long existed. Yet people still save too little. And while the decision of how much to save for retirement is not the same as the decision of which mortgage to take out or credit card to use, neither is the choice of a hotel room.

Default rules are likely to be ineffective for similar reasons. Borrowers would remain attracted to alternative contractual forms, and lenders would remain highly motivated to offer them. Any disclosure-based approach to making the default "sticky" would fail for the reasons outlined above. Most importantly, lenders would have strong incentives to make the default "slippery."[242]

The case of automated overdraft services provides an instructive example of the failures of both the sticky-default and total-cost-disclosure approaches of BLE. Historically, banks extended loans to cover overdrafts on an ad hoc basis and only for check transactions. Banks simply declined ATM withdrawals and debit card transactions that would have taken the consumer's balance below zero.[243] But in recent years banks have instituted automated overdraft protection services that both automatically enroll depositors in the service and automatically cover overdrafts caused not only by checks but also by debit card and ATM transactions.[244]

Banks typically charge a fixed fee per transaction — a median of $27 as of 2007,[245] which typically amounts to an APR of over 1,000% on the loan.[246] Consumers can avoid these fees by linking a savings account or credit card to their deposit account to handle overdrafts — a service provided by most banks at much lower cost (typically $5 per transaction, sometimes free) than their automated overdraft service.[247] But many consumers do not take action to sign up for these alternative lower-cost overdraft services. As a result, automated overdraft services have been major revenue generators for banks, amounting to some $2 billion in 2006 alone.[248]

Banks' automated overdraft services for debit card and ATM transactions are used to exploit consumer mistakes and arguably pro-

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[242] *See* Lauren E. Willis, *When Nudges Fail: Slippery Defaults*, 80 U. CHI. L. REV 1155, 1185–1200 (2013).

[243] Overdraft Opt-In Final Rule 2009, 74 Fed. Reg. 59,033, 59,034 (Nov. 17, 2009) (codified at 12 C.F.R. § 205.17(b) (2014)).

[244] FED. DEPOSIT INS. CORP., FDIC STUDY OF BANK OVERDRAFT PROGRAMS, at iii (2008).

[245] *Id.*

[246] *Id.* at v.

[247] *Id.* at iii.

[248] *Id.* at iii–iv.

vide little social value. About half of consumers do not know that ATM and debit card overdrafts will be automatically approved and charged; they instead believe that such transactions will be declined.[249] And the Federal Reserve's consumer testing reveals that consumers would prefer that such transactions be declined.[250] Analysis of data on those who trigger overdraft fees reveals "nearly all could have avoided fees by using a much cheaper source of liquidity (usually a credit card with available credit)."[251]

Not surprisingly, a 2006 FDIC study found that banks structured their overdraft programs in misleading ways. Banks sometimes operated "nonpromoted" services, meaning they automatically enrolled customers in the service without informing them of their participation in the program or their ability to opt out.[252] More deviously, half of large banks processed consumer overdrafts in a single daily batch and processed them by transaction size rather than in chronological order. Because banks charge a fixed fee on each transaction after the one that puts the consumer below zero, this opportunistic reordering of transactions results in even more fees.[253] Although the technology is available to inform consumers of an overdraft and a potential fee before their ATM or debit transaction is completed, most banks instead notify consumers by mail or email subsequent to the transaction.[254]

After identifying these problems, the Federal Reserve took an approach in 2009 that reflects the standard BLE "solutions" to consumer credit problems. First, the Federal Reserve mandated more disclosure, including a disclosure much like the "total cost" disclosure Bar-Gill advocates: beginning in 2010, banks must disclose in customers' periodic statements the total overdraft fees incurred in the year to date.[255] Second, the Federal Reserve created a "sticky default": banks may no

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[249] Overdraft Opt-In Final Rule 2009, 74 Fed. Reg. 59,033, 59,035 n.15 (Nov. 17, 2009) (codified at 12 C.F.R. § 205.17(b) (2014)).

[250] *Id.* at 59,034–35.

[251] Victor Stango & Jonathan Zinman, *What Do Consumers Really Pay on Their Checking and Credit Card Accounts? Explicit, Implicit, and Avoidable Costs*, 99 AM. ECON. REV. 424, 425 (2009).

[252] FED. DEPOSIT INS. CORP., *supra* note 244, at iv & n.4.

[253] *Id.* at iii.

[254] *See id.* at 41.

[255] 12 C.F.R. § 230.11 (2014). The Federal Reserve promulgated a rule in 2005 that required similar disclosures from depository institutions that promoted or advertised overdraft services. *See* Final Rule on Overdraft Fee Disclosure 2005, 70 Fed. Reg. 29,582 (May 24, 2005) (formerly codified at 12 C.F.R. § 230.11 (2009)). Additionally, the 2005 rule required that depository institutions disclose the categories of transactions for which an overdraft fee may be imposed. It also required that advertisements for overdraft services include applicable fees or charges, the categories of transactions covered, the time period in which consumers might pay the overdraft, and the circumstances in which the institution would not pay the overdraft. *Id.* In addition to other changes, the 2009 rule extended the mandatory disclosures to all depository institutions and not just those that promote or advertise the overdraft services. 12 C.F.R. § 230.11 (2014).

longer automatically enroll customers and instead must switch the default to *not* providing overdraft protection for ATM and debit card transactions.[256]

To make this new default sticky, the rules require consumers to act affirmatively to opt into the overdraft program.[257] In addition, banks must disclose the terms and costs of the overdraft service, as well as those of alternatives, such as linking a credit card to the account to cover overdrafts.[258] The Federal Reserve considered allowing banks to continue automatically enrolling customers as long as they clearly gave the consumer notice and an opportunity to opt out, but chose the opt-in approach because:

> [T]he large majority of overdraft fees are paid by a small portion of consumers who frequently overdraw their accounts. These consumers may have difficulty both repaying overdraft fees and bringing their account current, which may in turn cause them to incur additional overdraft fees. An opt-in approach could therefore best prevent these consumers from entering into a harmful cycle of repeated overdrafts.[259]

Notably, in adopting the rule, the Federal Reserve gave no consideration to a mandatory product regulation alternative, such as capping overdraft fees or requiring overdraft protection for ATM and debit card transactions to be provided using linked account products.

Professor Lauren Willis provides a damning account of the failure of this regulatory approach.[260] In response to the new sticky default rule, banks used a variety of aggressive marketing tactics to induce many consumers to opt into the bank's automatic overdraft program. First, for new customers, many banks effectively undid the new legal default (nonenrollment) by forcing consumers to make an affirmative choice whether to enroll in the overdraft service or not.[261] For existing customers, particularly those with a history of frequent overdrafts, banks aggressively marketed the benefits of opting in (through phone calls and in-person client interactions at bank branches).[262] And they were persistent. As Willis puts it:

> Consumers quickly realized that there is an immediate intangible benefit to opting [in to the automatic overdraft program] — the marketing will

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[256] 12 C.F.R. § 205.17(b). Interestingly, in the final rule adopting the default rule approach, the Federal Reserve cited the success of the default rule approach in improving the functioning of 401(k) plans. Overdraft Opt-In Final Rule 2009, 74 Fed. Reg. 59,033, 59,038 & n.25 (Nov. 17, 2009) (codified at 12 C.F.R. § 205.17(b)).

[257] 12 C.F.R. § 205.17(b)(1)(iii).

[258] *Id.* §§ 205.17(b)(1)(i), 205.17(d)(1)–(5).

[259] Overdraft Opt-In Final Rule 2009, 74 Fed. Reg. 59,033, 59,038 (Nov. 17, 2009) (codified at 12 C.F.R. § 205.17(b)).

[260] *See* Willis, *supra* note 242, at 1186–87.

[261] *See id.* at 1187.

[262] *See id.*

> stop. The calls and emails will cease, the tellers will stop asking, and those who bank on-line will be able to navigate directly to their personal account without clicking through a computer screen asking whether they would like to opt [in] first.[263]

Banks also used marketing materials suggesting that failure to enroll in the automated overdraft service for ATM and debit card transactions would mean that the consumer would also not be protected from check overdrafts.[264] Some bank employees were paid bonuses for convincing past overdraft users to enroll.[265]

According to one survey, 45% of those who had overdrafted more than ten times during the first half of 2010 had opted in to an automated overdraft program by the end of 2010, compared to an opt-in rate of only 15% for all customers.[266] As Willis aptly concludes, "Choice architecture is powerful if you are the one designing it. The difficulty is for the law to design it — the actual designers are often firms selling products or service to consumers, and they can run circles around the law."[267]

One can imagine alternative approaches that make opting in costly enough so that the default of nonenrollment *is* sticky.[268] But such an approach, like default rules for retirement savings, is really based more on the illusion of choice than on actual choice. The presumption underlying the policy is that consumers should use the default term to help mitigate the behavioral market failure. Although the default is not explicitly mandated — feel free to opt in — penalties for opting in are set high enough so that the default is "sticky," that is, few opt in.

While one might think that this could in principle operate similarly to a Pigouvian tax that, with proper calibration, would deter from opting in only those who should not opt in,[269] behavioral failures work against this possibility.[270] In particular, a firm would be willing to

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[263] *Id.* at 1188. Willis cites a survey finding that almost half of those who enrolled in the overdraft service did so in part to stop this barrage of marketing. *Id.* at 1186–87 & n.143.

[264] *Id.* at 1187–88.

[265] *Id.* at 1190–91.

[266] CONSUMER FIN. PROT. BUREAU, CFPB STUDY OF OVERDRAFT PROGRAMS 31 (2013), *archived at* http://perma.cc/5LL-YN46.

[267] Willis, *supra* note 242, at 1228.

[268] For a careful theoretical analysis of sticky defaults focusing mostly on neoclassical assumptions, on which we build, see Ian Ayres, *Regulating Opt-Out: An Economic Theory of Altering Rules*, 121 YALE L.J. 2032 (2012).

[269] *Id.* at 2091–92.

[270] *See* Willis, *supra* note 242, at 1215 ("It would be difficult to calibrate a cost [for opting in] that would deter those who ought to stick with the default and not those who ought to opt [in to an automated overdraft program]."). Moreover, while he gives a more optimistic account of sticky defaults than we do here, Professor Ian Ayres acknowledges that behavioral biases may interfere with optimal consumer sorting under a sticky default regime. Ayres, *supra* note 268, at 2096 ("[I]n many contexts, lawmakers will not have available an impeding tool that produces the appropriate

bear the costs of inducing opt-in if and only if its profit net of that cost were positive. And in a market with behaviorally biased consumers, the firm's profit from the product feature is not the same as the social value created by the feature; indeed, the more biased the customer, the larger the firm's profit.[271] Typically, then, if the opt-in cost is set high enough to deter its use by behaviorally biased consumers — the subjects of regulatory concern — it will also deter opt-in by those for whom opting in creates a net social gain.

The evidence on automated overdraft programs helps make this point more concrete. The FDIC found that 5% of consumers were charged twenty or more overdraft fees in a twelve-month period.[272] Those charges amounted to $1610 per year on average and accounted for 68% of banks' overdraft fee revenue.[273] After significant investigation, the Federal Reserve concluded that it was these frequent overdrafters who needed to be prevented from enrolling in the overdraft programs.[274] In contrast, the Federal Reserve "recognize[d] that, for some consumers, coverage of occasional overdrafts and paying occasional overdraft fees may be preferable to having transactions declined."[275] It is these occasional overdrafters that the Federal Reserve wants its sticky default approach to allow to opt in.

And therein lies the rub. To make much of a difference for the recurrent overdrafters that the Fed is rightly targeting, we need to set the costs of opting in at on the order of $1000 or more to deter banks from inducing likely overdrafters to opt in.[276] But at that level, those costs will also deter consumers who use automated overdrafts at much lower levels and for whom it is a socially valuable service. To do any good in this context, then, sticky defaults must serve as effective mandates.[277]

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separating equilibrium — where only the subset of contractors with lower paternalism or externality concerns, or higher added value, contract around the socially preferred default.").

271 *See* DellaVigna & Malmendier, *supra* note 192, at 355.

272 FED. DEPOSIT INS. CORP., *supra* note 244, at iv. Among low-income consumers, 7.5% had greater than twenty overdraft fees. *Id.* at v.

273 *Id.* at 81.

274 *See supra* note 259 and accompanying text.

275 Overdraft Opt-In Final Rule 2009, 74 Fed. Reg. 59,033, 59,039 (Nov. 17, 2009) (codified at 12 C.F.R. § 205.17(b) (2014)).

276 As a first approximation, the $1610 revenue number can be taken as profit, ignoring the bank's cost from default on these loans. The loans are indeed very low risk since banks can refuse to cover overdrafts in high-risk situations and moreover take repayment from the next deposit into the account. Willis, *supra* note 242, at 1175. Note also that $1610 is an average; many customers in this group incur higher overdraft charges.

277 Ayres, *supra* note 268, at 2096 ("When no impeding altering rule is available that appropriately discriminates among the potential contractors, lawmakers will need to face the more traditional decision of whether to suspend freedom of contracting altogether and make the socially-preferred rule mandatory.").

For effective sticky defaults in this area, choice is often a façade. To paraphrase the characterization of automatic enrollment above, explicitly mandating a standard form contract is just a more extreme form of a sticky default.[278] We do not mean to overstate the point; it is certainly possible that in some instances regulators can devise mechanisms that effectively sort consumers into and out of a particular default, and such tools should be included in the set of policies considered. But in BLE work that fails to consider the possibility that sticky defaults effectively serve as mandates, scholars use the façade of choice to avoid directly analyzing the costs and benefits of such direct mandates. As we noted earlier, relying on the rhetoric and illusion of choice, when the reality — behaviorally speaking — is overwhelmingly otherwise, might be a political strategy (conscious or not) or, less likely, a reflection of libertarian commitments. But that comes with the costs we noted earlier: a failure to analyze whether only the "right" consumers will take advantage of the option to opt out of the default; whether producers will exploit this opt-out to entice the "wrong" consumers into it; whether the administrative costs of policing the opt-out system to ensure it is used "properly" are worth the benefits of leaving this escape valve open; and whether, on balance, a direct mandate is the optimal policy. The apparent precommitment to preserving the illusion of choice truncates policy analysis in all these ways and others.

E. A More Complete Behavioral Approach

The dominant BLE approach, focusing largely on disclosure and defaults, is not likely to significantly improve consumer credit markets. To be clear, the problems are indeed hard to solve; we are under no illusions that public policy can achieve consumer nirvana. But policy can offer more here than just disclosure and defaults, and the unwillingness to seriously analyze regulatory tools that go beyond nudges limits the role BLE should be playing in fashioning welfare-improving interventions. To illustrate, we consider two policy tools that go beyond disclosure and defaults: regulating products and reshaping firm incentives.

1. Product Regulation. — One reason, discussed above, that summary disclosure rules standing alone are ineffective is that underlying contractual complexity would remain. And the appeal of the sticky default approach is that it would reduce contractual complexity — by, in effect, mandating a simpler contractual form, at least for a subset of consumers — if the cost of opting out were made sufficiently high.

But this is also the appeal of explicit contractual mandates. The reaction to such product regulation in work by mainstream BLE

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[278] *See supra* p. 1627.

scholars is varied. Some simply decline to analyze policy tools like product regulation that go beyond disclosure and defaults.[279] Others reject product bans outright.[280] Given the very defects in consumer decisionmaking that behavioral insights have documented so persuasively, it is odd — and striking — that few BLE scholars have then even considered whether choice-denying options, such as bans on certain contractual terms or products, will actually enhance total social welfare more than other options. With due respect, we think the field should more seriously engage with whether, and under what circumstances, such more traditional forms of regulation would be optimal.

The traditional approach to regulating the pricing of credit is to focus on prices that are in some sense too high. Usury laws, for example, have historically capped interest rates. Similarly, the CARD Act of 2009[281] focused on limiting the size of fees and finance charges in consumer credit cards.[282]

Concern over high prices for credit also motivates a recent proposal by Willis that bucks the soft paternalism orthodoxy. She proposes to require mortgage lenders to disclose four key terms and, importantly, to prohibit the lenders from offering certain forms of mortgage contracts for which these four terms would not be sufficient to evaluate the loan.[283] Balloon payments, negative amortization loans, and prepayment penalties would all be banned under her proposal.[284] The goal of this proposal, much like the goal of mandatory disclosure, is to facilitate comparison shopping and competition in the credit market and thereby to lower prices.[285] As she explains, the efficiency cost of overpricing in the consumer credit market is "the deadweight loss of consumers who borrow less than they efficiently should because they see inflated prices."[286] Similar reforms, based on standardizing con-

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[279] *See, e.g.*, BAR-GILL, *supra* note 10, at 105 ("[The CARD Act] imposed substantive restrictions, banning practices, and limiting prices . . . . [D]ebates [over such rules] are beyond the scope of this [book].").

[280] *See, e.g.*, NUDGE, *supra* note 25, at 137 ("[I]t is hard to implement any such ban without depriving many deserving but high-risk borrowers from any source of financing. And of course, we libertarian paternalists do not favor bans. Instead, we prefer an improvement in choice architecture that will help people make better choices and avoid loans that really are predatory . . . .").

[281] Pub. L. No. 111-24, 123 Stat. 1734 (codified as amended in scattered sections of 15, 16, and 31 U.S.C.).

[282] For example, the CARD Act imposes limits on how high late fees can be, 15 U.S.C. § 1665d (2012), and restricts the number of over-the-limit fees issuers can charge an account to one per billing cycle, *id.* § 1637(k)(7).

[283] Willis, *supra* note 180, at 821–23. The four terms are (1) total loan proceeds; (2) total upfront fees, points, and costs; (3) maximum monthly payment; and (4) loan length in years. *Id.* at 821.

[284] *Id.* at 823.

[285] *See id.* at 826.

[286] *Id.* at 815.

tracts, have been proposed for other forms of consumer credit.[287] Unsurprisingly, scholars from the dominant strain of BLE reject Willis's proposal.[288]

This general approach, mandating a relatively simple structure for consumer credit contracts, is worth full consideration. The main concern with regulating the structure of credit contracts is that such regulation might undermine innovative and efficient contractual structures. For example, the late fees and default interest rates targeted by the CARD Act have a plausible efficiency justification: they help issuers price credit risk. One potential unintended consequence of the CARD Act is that issuers will shift more of the cost of borrowing into the interest rate charged and other unregulated terms, which might result in less efficient risk-based pricing and a reduction in the availability of credit.

But initial empirical analyses show that the CARD Act has had its desired effects on the directly regulated fees without causing any increase in interest rates or other terms of consumer lending or, evidently, any decrease in the availability of credit.[289] Hence the consumer benefits of this product regulation appear to far exceed its costs; in addition, direct product regulation was much more beneficial than reformed disclosure. Indeed, these studies conclude that the *mandatory* rules in the Act generate about three hundred times the economic benefits to consumers that the Act's main disclosure nudge generates.[290]

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[287] *See, e.g.*, Ronald J. Mann, *"Contracting" for Credit*, 104 MICH. L. REV. 899, 927 (2006).

[288] NUDGE, *supra* note 25, at 137 ("Although we see some merit in this proposal, and are sympathetic with the goal of making shopping easier, Wilkins's [sic] proposal does not qualify as libertarian paternalism because it prohibits contracts that may be mutually beneficial. Variable-rate mortgages, even with teaser rates, are not inherently bad. For those who are planning to sell their house or refinance within a few years, these mortgages can be highly attractive.").

[289] *See* Bar-Gill & Bubb, *supra* note 196, at 972. One explanation for why other contract terms did not adjust is that credit card issuers have market power, perhaps due to consumer switching costs, which results in excess profits so that issuers are not forced to raise interest rates or other prices in response to the loss in revenue from the new regulations. *See id.* at 982, 1000–01. A subsequent study estimates that these regulations save U.S. credit card borrowers almost $21 billion annually; this study moreover finds no reduction in the availability of consumer credit in response. Sumit Agarwal et al., Regulating Consumer Financial Products: Evidence from Credit Cards 3 (Oct. 3, 2013) (unpublished manuscript), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2330942.

[290] The CARD Act requires credit card issuers to disclose the total cost of paying off the card if only the minimum payment is made each month as well as the cost if the balance is paid off in thirty-six months. 15 U.S.C. § 1637(b)(11)(B) (2012). The study found that there was a 0.5% increase in the percentage of consumers making the thirty-six-month payment amount in response. Agarwal et al., *supra* note 289, at 4. The authors estimate that this disclosure nudge saved consumers only $0.07 billion per year. *See id.* at 4–5. The study also estimates the savings to consumers produced by a set of mandatory product regulations, including caps on late fees and over-the-limit fees, as well as a new default rule that requires consumers to affirmatively opt in to over-the-limit programs before the lender can charge an over-the-limit fee. They find that these provisions saved consumers $20.8 billion annually. *Id.* at 21. The vast majority of this $20.8 bil-

Thus, direct product regulation deserves serious consideration in BLE and holds perhaps more promise (even if it is less novel) than new disclosure.

Moreover, behavioral economics suggests some low-hanging fruit in a different form of product regulation. In this form, the focus should be not on prices that are too high, but on prices that are in a sense *too low*.[291] As discussed above, teaser rates are attractive to present-biased consumers, particularly those who underestimate their future borrowing. Thus, they result in inefficient overborrowing. What is more, we are aware of no plausible efficiency rationale for teaser interest rates.

The main rational-choice explanation offered for teaser rates in the academic literature is that they represent a healthy form of price competition in a market in which consumers face switching costs.[292] In the presence of such switching costs, in order to gain customers, lenders must pay customers to switch. However, there is no reason that customers must be paid to switch in the form of temporary interest-free loans. Lenders could instead simply pay in cash.[293]

The only plausible explanation for the use of teaser rates in consumer credit contracts is that they exploit consumers' bounded rationality and bounded self-control. Banning teaser rates in credit cards and mortgages — a sort of "reverse-usury" law, if you will — would

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lion stems from mandatory rules. To see this, note that Table 4 of the study shows that over-the-limit fees fell by 1 percentage point of average daily balances when the new default rule came into effect in February 2010. *Id.* at 63 tbl.4. Multiplied by the $744 billion in outstanding credit card lending in the first quarter of 2010, this reduction in over-the-limit fees saved consumers about $7.4 billion on an annual basis, leaving the remaining $13.4 billion in annual savings produced by the CARD Act clearly attributable to explicit mandates. Moreover, over-the-limit fees have essentially disappeared from the credit card market following the CARD Act. Figure 5 shows that over-the-limit fees fell to approximately 0% of average daily balances. *Id.* at 41 fig.5. Hence, the switch in default rule for over-the-limit fees effectively functioned as a mandate, so we consider the entire $20.8 billion in savings to be properly understood as stemming from effectively mandatory product regulation in the CARD Act.

[291] *See* Bar-Gill & Bubb, *supra* note 196, at 1005–11.

[292] *See, e.g.*, Victor Stango, *Pricing with Consumer Switching Costs: Evidence from the Credit Card Market*, 50 J. INDUS. ECON. 475, 477–79 (2002).

[293] Indeed, many do so. For example, credit card issuers commonly offer rewards benefits and cash back for customers who open new accounts and meet certain minimum requirements. Chase Freedom Card provides $100 cash back after spending $500 in the first three months. *Sign Up and Apply for Chase Freedom*, CHASE, https://creditcards.chase.com/freedom/learnmore (last visited Mar. 1, 2014), *archived at* http://perma.cc/GY3P-ZNG9. Bank of America offers a Cash Rewards Signature Visa card that pays new customers $100 after they spend $500 in the first three months after opening the account. *BankAmericard Cash Rewards™ Visa Signature® Card*, BANK AM., https://consumer.bankofamerica.com/USCCapp/Ctl/entry?cid=2103541 (last visited Mar. 1, 2014), *archived at* http://perma.cc/E5YS-TAXM. The Chase Sapphire Preferred Card gives $500 toward travel rewards after spending $3000 during the first three months. *Apply for a Chase Sapphire Card*, CHASE, https://creditcards.chase.com/sapphire (last visited Mar. 1, 2014), *archived at* http://perma.cc/C4RW-WFSB.

produce social benefits at little social cost. And we suspect that careful analysis by BLE scholars could reveal other choice-limiting interventions that, while having nonnegligible costs, would also have positive net benefits.

The current dominant approach in BLE of excluding product regulation from consideration *a priori*, or avoiding analyzing the tradeoffs by hiding behind a façade of choice, exemplifies our more general critique. Because of an implicit political or philosophical commitment to choice-preserving regulatory tools, BLE does not take its own behavioral insights seriously or rigorously enough. Prematurely truncating its analysis, BLE fails to give serious attention, if any at all, to the possibility that choice-denying tools might be welfare enhancing in some domains. Nor does it compare the costs and benefits of these options to its preferred choice-preserving alternatives.

2. Firm Ownership. — As we have noted, problems in the consumer credit market stem from the interaction of consumer limitations and the strategic behaviors of lenders. The dominant organizational form in consumer finance today is the investor-owned business corporation, the managers of which have strong incentives to adopt contractual forms that exploit consumer biases.

In the nineteenth century, the predominant forms in consumer financial services were instead mutual and nonprofit firms.[294] In mutuals, customers own the firm; in nonprofits, those who control the firm are denied a claim to its profits. Over the twentieth century, a series of regulatory developments resulted in a steady erosion of the market share of mutuals and nonprofits.[295]

Today investor-owned firms are the dominant players, but mutually owned credit unions and mutually owned insurance companies remain significant.[296] These alternatives to investor ownership reduce firms'

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[294] HENRY HANSMANN, THE OWNERSHIP OF ENTERPRISE 246 (1996).

[295] Most importantly, in the late 1970s and early 1980s, rules inhibiting the conversion of mutual savings and loan associations to investor-owned corporations were removed, and the managers of mutuals were allowed to personally capture much of the accumulated assets of the mutuals upon conversion. Bradford D. Jordan et al., *Returns to Initial Shareholders in Savings Institution Conversions: Evidence and Regulatory Implications*, 11 J. FIN. RES. 125, 126 & n.2 (1988); *see also* JAMES A. WILCOX, FILENE RESEARCH INST., CREDIT UNION CONVERSIONS TO BANKS 44–53 (2006), *archived at* http://perma.cc/P8LS-3KPA. Unsurprisingly, mutuals converted to stock-form en masse. *See* Lawrence R. Cordell et al., *Corporate Ownership and the Thrift Crisis*, 36 J.L. & ECON. 719, 719 (1993).

[296] The National Credit Union Administration's 2012 directory of federally insured credit unions lists numerous licensed credit unions with millions of members and billions of dollars in assets. NAT'L CREDIT UNION ADMIN., 2012 DIRECTORY OF FEDERALLY INSURED CREDIT UNIONS (2012), *archived at* http://perma.cc/VJ8R-ALPT. The National Association of Mutual Insurance Companies, the trade group for mutual insurance entities, consists of 1400 property/casualty insurance companies serving more than 135 million auto, home, and business policyholders, accounting for an estimated 50% of the automobile and homeowners market and 31% of

incentives to exploit consumer mistakes. And indeed, contractual features used to exploit consumer mistakes are less prevalent in the consumer credit contracts used by mutually owned firms.[297] The teaser rates so common among investor-owned credit card issuers are rarely employed by mutuals.[298] Moreover, the default APR used by mutuals is only 2.5 percentage points higher (on average) than the standard APR, whereas the default APR used by investor-owned credit card issuers is 12.2 percentage points higher.[299]

Use of firm ownership to mitigate the incentive of lenders to exploit consumer biases is thus a potential private-ordering solution to the problem. But it suffers from at least two key limitations. Adept policy could address both.

First, unlike investor-owned firms, there is less incentive for entrepreneurs to start mutual and nonprofit firms. In the case of mutuals, familiar collective action obstacles generally prevent groups of customers from forming mutuals. Credit unions, for example, historically have been established by employers, who foot the startup costs to create a customer-owned financial institution to serve their employees.[300]

But policy can address this collective action problem. Indeed, examples exist of current policies aimed at encouraging the development of mutual and nonprofit financial service providers. The Patient Protection and Affordable Care Act of 2010[301] provides subsidies to fund the startup costs of nonprofit health insurers.[302] Similarly, the Credit Union Membership Access Act of 1998[303] enables credit unions to expand by allowing federal credit unions to serve multiple groups of consumers.[304] And credit unions are exempt from corporate income taxa-

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the business insurance market. NAT'L ASS'N MUT. INS. COS., 2012 THE YEAR IN REVIEW 2 (2012), *archived at* http://www.perma.cc/NX23-HGQY.

297 *See* Ryan Bubb & Alex Kaufman, *Consumer Biases and Mutual Ownership*, 105 J. PUB. ECON. 39, 39–40 (2013).

298 In a sample of credit card contracts, only 5% of credit union contracts had a special introductory APR compared to 40% of investor-owned issuer contracts. *See id.* at 46 tbl.3.

299 *See id.* These averages include contracts in which there is no default APR (for which the increase is zero).

300 *See* HANSMANN, *supra* note 294, at 259–60.

301 Pub. L. No. 111-148, 124 Stat. 119 (codified as amended in scattered sections of the U.S. Code).

302 42 U.S.C. § 18042 (Supp. V 2011). As of January 1, 2014, the Centers for Medicare & Medicaid Services reported that twenty-three entities servicing twenty-four states had received awards under the program. *New Loan Program Helps Create Customer-Driven Non-Profit Health Insurers*, CENTERS FOR MEDICARE & MEDICAID SERVICES, http://www.cms.gov/CCIIO/Resources/Grants/new-loan-program.html (last updated Jan. 1, 2014), *archived at* http://perma.cc/J7Y4-79R9.

303 Pub. L. No. 105-219, 112 Stat. 913 (codified as amended in scattered sections of 12 U.S.C.).

304 12 U.S.C. § 1759 (2012).

tion,[305] which compensates in part for their inability to raise outside equity capital.

Second, mutual firms suffer from a demand-side limitation: when mutuals and investor-owned firms compete, the contracts used by investor-owned firms will offer lower salient prices than those used by mutuals. Investor-owned credit card issuers offer low introductory interest rates and pack more of the contract cost into less salient terms, like the default APR. Consumers who suffer from behavioral biases will be attracted to these investor-owned firm contracts.[306] Only consumers who are sophisticated about their vulnerability to these back-end fees and penalties will recognize that the mutual contract actually offers a better deal.[307]

An admittedly drastic, though not unprecedented, response could, in theory, be to ban investor-owned firms from lending to consumers, limiting the consumer credit market to mutuals and nonprofits.[308] But less drastically, we can imagine experiments with exclusively mutual consumer financial services that would shed more light on the costs and benefits of such an approach.

Concern over payday lending to members of the military, for example, led Congress to cap the annual interest rates of payday loans to active duty service members at 36%.[309] An alternative would be to ban investor-owned firms from making payday loans to members of the military. Some of the largest credit unions primarily serve the military,[310] and many credit unions located near military installations offer alternatives to payday loans.[311] Such an approach would create a market niche dominated by credit unions, which lack the high-

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[305] *Id.* § 1768 ("The Federal credit unions organized hereunder, their property, their franchises, capital, reserves, surpluses, and other funds, and their income shall be exempt from all taxation now or hereafter imposed by the United States or by any State, Territorial, or local taxing authority . . . .").

[306] *See* Bubb & Kaufman, *supra* note 297, at 43.

[307] *Id.*; *cf.* Sunstein, *supra* note 12, at 1832 ("In identifiable cases, those who do *not* exploit human errors will be seriously punished by market forces, simply because their competitors are doing so and profiting as a result.").

[308] For example, some countries, including Bosnia-Herzegovina and Honduras, restrict microfinance lending to nonprofit institutions. STEFAN STASCHEN, DEUTSCHE GESELLSCHAFT FÜR TECHNISCHE ZUSAMMENARBEIT (GTZ) GMBH, REGULATORY REQUIREMENTS FOR MICROFINANCE 18 (2003), *archived at* http://perma.cc/FC4H-UUGP.

[309] *See* 10 U.S.C. § 987(b) (2012).

[310] For example, Navy Federal Credit Union is the largest credit union in the nation with more than 3.8 million members and total assets of nearly $47 billion in 2011. NAT'L CREDIT UNION ADMIN., *supra* note 296, at 158. Pentagon Federal Credit Union has more than one million members and total assets of $15 billion in 2011. *Id.*

[311] DEP'T OF DEF., REPORT ON PREDATORY LENDING PRACTICES DIRECTED AT MEMBERS OF THE ARMED FORCES AND THEIR DEPENDENTS 31–34 (2006), *archived at* http://perma.cc/7QB3-GJX2 (providing examples of credit unions that offer alternatives to payday loans).

powered incentives of traditional payday lenders to exploit consumer mistakes. Experience under such a regime would provide evidence on the tradeoffs posed by such policies.

Despite all this, we recognize that investor ownership creates good incentives as well as bad. The lower-powered incentives produced by mutual ownership and nonprofit status may result in higher costs and less socially valuable innovation.

But while it is important to recognize that, in theory, the social costs of weaker firm profit incentives could be significant, experience suggests that the issue is not so straightforward. In particular, if mutual ownership were substantially less efficient, then competition in the product market would force mutuals out of the financial industry. Instead, credit unions in particular have maintained significant market share.[312] Moreover, studies find only mixed evidence on the relative efficiency of investor-owned versus mutual banks.[313] Thus, consumer finance may be one industry in which the benefits of the strong incentives produced by investor ownership are fairly small.

IV. FUEL ECONOMY

Fuel economy regulation is one of many areas of environmental policy in which traditional "command-and-control" regulatory tools continue to dominate, to the consternation of most economists.[314] In the United States, automobile manufacturers are subject to Corporate Average Fuel Economy (CAFE) standards that, to simplify, mandate that the average fuel economy of each manufacturer's fleet achieves some minimal level[315] (in effect, this is analogous to an intrafirm "cap-and-trade" system, but not an interfirm one). On the neoclassical eco-

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[312] *See supra* note 296.

[313] There are various empirical and methodological challenges to comparing the efficiencies of stock versus mutual thrifts. The literature provides mixed results. Professor Loretta Mester finds evidence that on average stock savings and loan entities are less efficient than mutual savings and loan entities. Loretta J. Mester, *Efficiency in the Savings and Loan Industry*, 17 J. BANKING & FIN. 267, 267 (1993). Another study uses a stochastic model to find that operating inefficiency is not significantly related to form of ownership. A. Sinan Cebenoyan et al., *The Relative Efficiency of Stock Versus Mutual S&Ls: A Stochastic Cost Frontier Approach*, 7 J. FIN. SERVICES RES. 151, 151 (1993). Professors James Sfiridis and Kenneth Daniels use a Bayesian approach to find that stock thrifts operate at a lower cost point (that is, more efficiently) than mutuals. James M. Sfiridis & Kenneth N. Daniels, *The Relative Cost Efficiency of Stock Versus Mutual Thrifts: A Bayesian Approach*, 39 FIN. REV. 153, 153 (2004).

[314] *See, e.g.*, T.H. TIETENBERG, EMISSIONS TRADING (1985) (reviewing empirical literature and computer simulations of environmental policies and concluding that command-and-control regulation imposes significant social costs vis-à-vis market-based regulation); Scott R. Milliman & Raymond Prince, *Firm Incentives to Promote Technological Change in Pollution Control*, 17 J. ENVTL. ECON. & MGMT. 247, 257–58 (1989) (using an economic model to demonstrate that command-and-control regulation imposes inefficiency by discouraging technological innovation).

[315] *See* 49 U.S.C. § 32902 (2006 & Supp. V 2011).

nomics account, such performance standards are inefficient, costing substantially more than a gas tax that would achieve the same reduction in pollution.[316] The neoclassical paradigm has shifted the conventional wisdom on environmental regulation more generally to favor market-based tools like taxes and tradable permits over traditional regulatory mandates.[317] Nonetheless, regulatory practice has moved only slowly in the direction of this paradigm — and in fuel economy regulation, hardly at all.[318]

The neoclassical case for market-based tools over regulatory mandates depends critically on the behavioral response of consumers to incentives.[319] In the case of fuel economy, for market-based tools like a gas tax to work properly, consumers must respond by making cost-justified investments in cars with higher fuel economy.[320] Empirical evidence indicates, however, that many consumers are unwilling to buy pricey fuel-efficient vehicles even when the reduction in fuel costs would eventually more than cover the increased up-front cost.[321] Fuel economy regulation would therefore appear to be a particularly fertile area for incorporating insights from behavioral economics. Analytically, it is an interesting case in which a traditional market failure — externalities — interacts with a behavioral market failure — consumer mistakes in vehicle fuel economy choices — so that the conventional neoclassical approach to addressing the market failure does not function as theorized.

The prevailing BLE approach to this problem, however, treats these two market failures as completely separate. It adopts the neoclassical view of how to solve the traditional market failure (taxes) and focuses on correcting the behavioral market failure solely through changes to the relevant choice architecture, such as through more effective product labeling.[322] This inappropriately truncated approach to applying behavioral insights in this area limits the policy contributions that BLE could be making in fuel economy regulation and analogous regulatory issues.

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316 Mark R. Jacobsen, *Evaluating U.S. Fuel Economy Standards in a Model with Producer and Household Heterogeneity*, 5 AM. ECON. J. ECON. POL'Y, May 2013, at 148, 177 & tbl.9.

317 *See, e.g.*, Jody Freeman & Charles D. Kolstad, *Prescriptive Environmental Regulations Versus Market-Based Incentives*, *in* MOVING TO MARKETS IN ENVIRONMENTAL REGULATION 3, 4 (Jody Freeman & Charles D. Kolstad eds., 2007).

318 *See* 49 U.S.C. § 32902 (imposing average fuel economy standards on automobile manufacturers).

319 *See* A. Lans Bovenberg & Lawrence H. Goulder, *Environmental Taxation and Regulation*, *in* 3 HANDBOOK OF PUBLIC ECONOMICS 1471, 1478–81 (Alan J. Auerbach & Martin Feldstein eds., 2002).

320 *See id.*

321 Gloria Helfand & Ann Wolverton, *Evaluating the Consumer Response to Fuel Economy: A Review of the Literature*, 5 INT'L REV. ENVTL. & RESOURCE ECON. 103, 122 (2011).

322 *See, e.g.*, NUDGE, *supra* note 25, at 188–93.

A fuller account of the implications of behavioral economics in this domain would potentially include new policy recommendations for the traditional market failure itself. Rather than moving us toward regulatory tools that preserve choice, the interaction between behavioral biases and traditional market failure should suggest a reexamination of the superiority of market-based environmental regulation. A full incorporation of behavioral insights might rehabilitate more traditional command-and-control policies that reduce, or intervene more heavily in, individual choice.

A. The Neoclassical Account of the Policy Problem

Fuel consumption imposes external costs not mediated by a market — a textbook market failure. Pollution is the most obvious externality.[323] Burning a gallon of gasoline produces local pollution, such as ozone and particulate matter, as well as greenhouse gases that have global effects.[324] Absent governmental intervention, individuals will consume too much fuel and produce too much pollution.[325] This occurs through two primary types of consumer decisions: vehicle choice and vehicle use.[326] First, when choosing which vehicle to buy, consumers will undervalue fuel economy, because part of the social benefit of fuel economy lies in unpriced reductions in pollution. Second, consumers will drive too much. This problem is of course generalizable: other energy-using consumer durables, such as appliances and lightbulbs, pose the same type of market failure.

Under the neoclassical approach, the optimal policy response is a tax on fuel equal to the size of the externality, which makes the private cost of fuel equal to the social cost.[327] Such a tax would, in theory, get behavior right in terms of both vehicle use and vehicle choice. Facing a Pigouvian tax, an individual consumer would only *use* fuel when it is worth more to him than the after-tax price, which now incorporates pollution costs.[328] For the same reason, the consumer is theorized to be willing to make all positive net present value (NPV) investments in

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[323] Additional, more speculative fuel consumption externalities cited in the literature include national security effects arising from reliance on oil imports and economic costs from increased vulnerability to oil price volatility. Ian W.H. Parry et al., *Automobile Externalities and Policies*, 45 J. ECON. LITERATURE 373, 377–78 (2007).

[324] *See id.* at 374–77.

[325] *See, e.g.*, Don Fullerton & Sarah E. West, *Can Taxes on Cars and on Gasoline Mimic an Unavailable Tax on Emissions?*, 43 J. ENVTL. ECON. & MGMT. 135, 135–36 (2002) (noting hope that technological advances would allow for an emissions tax that "would reduce pollution efficiently," *id.* at 136).

[326] *See id.* at 136.

[327] *See* Gloria E. Helfand et al., *The Theory of Pollution Policy*, *in* 1 HANDBOOK OF ENVIRONMENTAL ECONOMICS 249, 252–54 (Karl-Göran Mäler & Jeffrey R. Vincent eds., 2003).

[328] *See id.* at 253.

fuel efficiency technology when choosing a car *to buy* in the first place. This private NPV calculation includes not only savings on the resource cost of fuel but also, through the tax, reductions in pollution harm.[329] Private decisions on both these dimensions would thus be socially efficient.

Moreover, a conventional Pigouvian tax has important theoretical advantages over command-and-control regulatory tools, such as fuel economy performance standards. First, taxes respond to differences in consumer preferences, whereas a centralized performance standard cannot vary at the individual level.[330] Consumers differ in their valuation of driving (for example, some face long commutes by car) and in their valuation of other vehicle characteristics that manufacturers must trade off to achieve increased fuel economy. Given this heterogeneity, the socially optimal fuel economy varies from consumer to consumer. Yet little variation exists in the external pollution costs of driving. Taxes equal to these external costs force consumers to internalize them while also then applying their own subjective valuations of the car they buy and how much they drive: thus, a tax of this sort generates the first-best outcome.[331]

Second, while a conventional tax in theory operates efficiently on both vehicle choice and vehicle use, a fuel economy standard instead has perverse consequences for vehicle use.[332] With the higher mandated fuel economy, but no change in fuel prices, driving becomes cheaper for consumers; hence, they drive more. This "rebound effect" blunts the reduction in pollution created by the fuel economy standard.[333] As a result, conventional economic analysis argues that a standard tax (or a cap-and-trade scheme) will achieve reductions in pollution at substantially lower cost than a fuel economy standard will.[334]

B. The Behavioral Account of the Policy Problem

The neoclassical approach is premised on the ability of consumers to understand and optimize the trade-off between immediate capital

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[329] *See* Fullerton & West, *supra* note 325, at 136.

[330] *See* Helfand et al., *supra* note 327, at 275–77.

[331] *See* Louis Kaplow & Steven Shavell, *On the Superiority of Corrective Taxes to Quantity Regulation*, 4 AM. L. & ECON. REV. 1, 3–4 (2002).

[332] *See* Jacobsen, *supra* note 316, at 149 & n.4.

[333] *See, e.g.*, Hunt Allcott & Michael Greenstone, *Is There an Energy Efficiency Gap?*, 26 J. ECON. PERSP. 3, 16 (2012) (describing the rebound effect in the context of home weatherization and energy use).

[334] One recent analysis estimated that the cost per ton of CO_2 avoided after ten years under the policy would be $67 for a Pigouvian tax compared to $222 under the CAFE standard without a Pigouvian tax. Jacobsen, *supra* note 316, at 177 tbl.9. However, note that the Pigouvian tax is being compared to the actual CAFE program, not an optimally designed fuel economy program, and hence this conclusion overstates the difference between taxes and fuel economy standards as regulatory tools.

costs and longer-term operating costs of varying fuel economy. Is it worth paying an extra $1000 up front for a car that gets 35 miles per gallon instead of 31 miles per gallon? For theoretical rational actors, such a decision problem is easily solved. As a result, taxes take advantage of disaggregated information about costs and benefits more effectively than a regulatory standard can.

But consumers who are boundedly rational or present biased fail to make this trade-off correctly. At the time of purchase, the up-front cost of the more fuel-efficient car is salient, easy to understand, and immediate. In contrast, the savings in operating costs are uncertain and delayed. Evaluating those long-term savings requires the consumer to consider the uncertain future path of gas prices, uncertain future utilization levels, and the uncertain lifetime of the vehicle — and to discount the difference in expected operating costs to present value in order to compare it to the additional up-front cost of the more fuel-efficient vehicle. Compounding this complexity is that more fuel-efficient car designs typically entail a trade-off with other vehicle attributes. For example, lighter cars are more fuel efficient but less safe.[335]

Some early evidence that real consumers cannot appropriately process the information necessary to this type of decision problem came from analysis of data on home air conditioner purchase and usage decisions by consumers.[336] The idea that consumers and firms are not taking advantage of positive NPV investments in energy efficiency has been termed the "energy paradox"[337] and the "Energy Efficiency Gap."[338] Perhaps the most convincing evidence for the existence of such inefficiency in the automobile market comes from the response of

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[335] *See* TOM WENZEL, ENERGY ANALYSIS DEP'T, LAWRENCE BERKELEY NAT'L LAB., ANALYSIS OF THE RELATIONSHIP BETWEEN VEHICLE WEIGHT/SIZE AND SAFETY, AND IMPLICATIONS FOR FEDERAL FUEL ECONOMY REGULATION 26 fig.4, 27 figs.4-9 & 4-10 (2010), *archived at* http://perma.cc/Z455-STN4.

[336] *See* Jerry A. Hausman, *Individual Discount Rates and the Purchase and Utilization of Energy-Using Durables*, 10 BELL J. ECON. 33 (1979). This study found that the average discount rate implied by observed behavior is about 25% per year — higher than the relevant interest rate in consumer credit markets. For example, according to the Federal Reserve consumer credit dataset, the average interest rate for forty-eight-month new car loans from commercial banks was 11.6% in February 1979. *Historical Data: Terms of Credit at Commercial Banks and Finance Companies*, BOARD GOVERNORS FED. RES. SYS., http://www.federalreserve.gov/releases/g19/HIST/cc_hist_tc_levels.html (last updated Feb. 7, 2014), *archived at* http://perma.cc/98WK-GCFM. The Federal Reserve did not begin tracking credit card interest rates, which would be closer to the relevant interest rate, until 1994. Subsequent studies showed similar results for other energy-using consumer durables, such as home heating systems. Jeffrey A. Dubin & Daniel L. McFadden, *An Econometric Analysis of Residential Electric Appliance Holdings and Consumption*, 52 ECONOMETRICA 345, 354 (1984) (finding a predicted discount rate of 20.5%).

[337] Adam B. Jaffe & Robert N. Stavins, *The Energy Paradox and the Diffusion of Conservation Technology*, 16 RESOURCE & ENERGY ECON. 91, 91 (1994).

[338] *See* Allcott & Greenstone, *supra* note 333, at 4.

car prices to variation in gas prices. One recent study finds that consumers will pay only an extra 76 cents for a car that saves them $1 on fuel over the lifetime of the car, discounted to present value.[339]

Several distinct explanations exist for why consumers may fail to make positive NPV investments in fuel economy. First, they might have bounded cognitive capacities. Thus, they simply misunderstand fuel economy and are unable to calculate an appropriate willingness to pay for fuel economy increases.[340] One study interviewed fifty-seven households and asked what they were willing to pay for a 50% increase in fuel economy for a particular vehicle.[341] Only two of the fifty-seven households "offer[ed] plausible willingness to pay answers arrived at through a process that could be described as economically rational (rather than through simple guessing)."[342] Consider this revealing exchange between one couple — both of whom work in financial services — who are considering their willingness to pay for an increase from 11 to 17 miles per gallon for an SUV:

> B., the male head of household, starts by saying, "$2000 . . . I'm so wanting a spreadsheet right now." He laughs. . . .
>
> Then M. [the female head of household] says, "$4000 . . . it's a gut feeling."
>
> B., "I was trying to calculate it [in my head], but I didn't carry it through very far."
>
> M., "We probably drive each car about 7000 or 6000 miles every year."
>
> She then suggests they might save 1000 gallons per year [for one car]; B. thinks this might be too much.
>
> B. summarizes their initial responses, saying, "$2000 to $4000."

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339 Hunt Allcott & Nathan Wozny, *Gasoline Prices, Fuel Economy, and the Energy Paradox* 5 (Nat'l Bureau of Econ. Research, Working Paper No. 18583, 2012), *archived at* http://perma.cc/6UM9-S74N. Professor Hunt Allcott & Nathan Wozny amass a dataset of eighty-six million annual automobile sales between 1999 and 2008, as well as data on the characteristics of different car models and gas prices. *See id.* at 16–17. Using this time-series data, the authors measured whether demand for low–fuel economy vehicles drops to the degree predicted by changes in gasoline price forecasts. Other studies have relied on cross-sectional data to make similar estimates and have reached conflicting results. *See, e.g.*, Mark K. Dreyfus & W. Kip Viscusi, *Rates of Time Preference and Consumer Valuations of Automobile Safety and Fuel Efficiency*, 38 J.L. & ECON. 79, 101 (1995) (finding that consumers will pay only 35 cents for every $1 they save on gasoline); James A. Kahn, *Gasoline Prices and the Used Automobile Market: A Rational Expectations Asset Price Approach*, 101 Q.J. ECON. 323, 337 (1986) (finding that consumers' demands for automobile types are highly responsive to fuel prices); James M. Sallee et al., The Effect of Gasoline Prices on the Demand for Fuel Economy in Used Vehicles: Empirical Evidence and Policy Implications 18 (June 18, 2010) (unpublished manuscript), *archived at* http://perma.cc/MV7A-9TEN (finding that consumers will pay 79 cents for a $1 decrease in gasoline costs).

340 *See* Helfand & Wolverton, *supra* note 321, at 126.

341 Thomas S. Turrentine & Kenneth S. Kurani, *Car Buyers and Fuel Economy?*, 35 ENERGY POL'Y 1213, 1216–18 (2007).

342 *Id.* at 1219.

Then, in unison, M. and B. say, "Call it $3000."[343]

This sort of guesswork, common among respondents, is not the optimizing behavior assumed by the neoclassical model. The authors found no household that reported analyzing their fuel costs in a systematic way in recent vehicle purchases.[344] Similarly, 40% of Americans in a recent survey reported that they "did not think about fuel costs at all" when purchasing their most recent vehicle.[345]

In addition, a common misunderstanding about fuel economy is that fuel cost is linear in miles per gallon.[346] In fact, it is linear in gallons per mile, not in miles per gallon.[347] Over a distance of 1,000 miles, a change from 10 to 15 miles per gallon will save more than 33 gallons of gas, but the change from 30 to 35 miles per gallon saves less than 5 gallons over the same distance. Consumers subject to this confusion will dramatically undervalue improvements in fuel economy for relatively low–fuel economy vehicles.[348]

Faced with these complex decisions and trade-offs, consumers might resort to relatively simple rules of thumb or otherwise structure their decision process to simplify the choice. One theory is that, instead of simultaneously optimizing around all relevant vehicle features, consumers make a series of "nested" decisions when selecting vehicles.[349] A consumer might first decide whether to purchase a new versus used vehicle.[350] Given that choice, she may then decide to purchase either a passenger car or an SUV; then select among economy, midsize, or fullsize; then proceed to an ensuing series of decisions within the confines imposed by earlier choices.[351] There is some evidence that fuel economy rests relatively low in this hierarchy and that consumers "satisfice" on fuel economy after maximizing around more salient attributes.[352] Relatedly, vehicle attributes are bundled together; consumers often must choose between various combinations of attributes rather than specifying the exact level of fuel economy they would like in a given model. One result of this structure of decisionmaking is

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[343] *Id.* at 1213 (second and third bracketed alterations in original).

[344] *Id.* at 1219.

[345] *See* Hunt Allcott, *Consumers' Perceptions and Misperceptions of Energy Costs*, 101 AM. ECON. REV. 98, 100 (2011).

[346] Richard P. Larrick & Jack B. Soll, *The MPG Illusion*, 320 SCI. 1593, 1593 (2008).

[347] *See id.* at 1594.

[348] *Id.*

[349] *See* Helfand & Wolverton, *supra* note 321, at 110–12.

[350] *See id.* at 110.

[351] *See id.*

[352] *See id.* at 128–29. There is nothing irrational about prioritizing safety, say, over fuel economy. But such a nested decision process might not reflect the structure of underlying preferences (that is, preferences are not really lexicographic), but rather a simplified decision process that fails to choose the vehicle that maximizes the consumer's underlying preferences.

that consumers have relatively low willingness to pay for improvements in fuel economy.

A distinct explanation for why consumers might undervalue investments in fuel economy is that consumers suffer from bounded willpower: they are present biased.[353] That is, rather than use standard exponential discounting of future consumption, consumers discount more over shorter time horizons than they do over longer ones. If high purchase prices are financed in part out of current consumption, and fuel costs reduce consumption in future periods, such present bias can result in underinvestment in fuel efficiency.[354]

The extent of the energy efficiency gap in the automobile market remains uncertain and controversial, given the difficulties in empirically estimating it.[355] But let us assume that such a behavioral market failure exists — that on average, consumers underinvest in fuel economy relative to their private optimum — in addition to the standard pollution externality problem. We now consider the implications of that circumstance for optimal regulatory policy.

C. The BLE Approach to Fuel Economy Policy

The nudge approach in this area is to focus on correcting consumer mistakes in fuel economy investments using choice-preserving interventions.[356] One way of conceptually understanding this approach — and seeing its limits — is to recognize that it assumes a sharp separation between the traditional market failure caused by externalities and the behavioral market failure induced by consumer-decision problems. In BLE, these two distinct market failures are solved separately: The analyst first diagnoses the traditional market failure and uses the neoclassical model to prescribe the appropriate cure, assuming consumers are rational.[357] Then he cures the residual problem of consumer mistakes through regulatory tools that preserve freedom of choice but nonetheless improve outcomes.[358]

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[353] *See id.* at 126–27.

[354] Garth Heutel, *Optimal Policy Instruments for Externality-Producing Durable Goods Under Time Inconsistency* 2–3 (Nat'l Bureau of Econ. Research, Working Paper No. 17083, 2011), *archived at* http://perma.cc/9HTZ-GB2W.

[355] See Allcott & Greenstone, *supra* note 333, at 12, for a useful review of other causes of market failure and how they influence consumer behavior. Importantly, the authors question whether the longstanding belief in the energy paradox has sufficient empirical support. After surveying the cost effectiveness of utility-run energy conservation programs, empirical data on returns to actually observed investments, estimated demand patterns for consumer durables that use energy, and engineering estimates of returns on potential investments, Professors Hunt Allcott and Michael Greenstone conclude that "the size of an Energy Efficiency Gap [the energy paradox] is situation-specific, mixed, and often inconclusive." *Id.* at 22.

[356] *See* NUDGE, *supra* note 25, at 188–93.

[357] *See, e.g.*, *id.* at 186–87.

[358] *See, e.g.*, *id.* at 188–93.

We call this approach the "behavioral two-step." Applied to fuel economy, the behavioral two-step would first prescribe Pigouvian taxes to correct the externality and then prescribe changes to the choice architecture to make sure consumers properly understand and process this price signal.[359]

The main nudge relevant here is product labeling. The Energy Policy and Conservation Act of 1975[360] mandated that auto manufacturers label all new vehicles according to EPA specifications, which require prominent display of the vehicles' miles per gallon.[361] The EPA recently updated the labels to include data on fuel consumption and expected fuel savings or costs relative to the average vehicle.[362]

Analogous nudges may affect to some extent how consumers use their vehicles. Vehicle gauges that give real-time feedback on fuel economy may change driving habits in the direction of greater conservation.[363] Moreover, BLE writers note that one can imagine public awareness campaigns that harness social preferences to reduce fuel consumption.[364]

D. A More Complete Behavioral Approach

This behavioral two-step is analytically sensible only if the nudges work effectively (at low cost) to produce behavior in line with the rational-actor assumption. However, there is little concrete evidence thus far to support the belief that reformed product labels on cars will improve consumers' fuel economy choices. For the reasons we pointed

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[359] This is the approach taken, for example, by Sunstein and Thaler in *Nudge*. They endorse taxation of fuel over command-and-control fuel economy regulation on both efficiency and freedom-of-choice grounds. *See id.* at 186. But they note political difficulties with increasing gasoline taxes to the efficient level and propose (either as a supplement to taxes or, if no tax hike is forthcoming, as a substitute) revised fuel economy disclosures that make the fuel costs more salient to consumers at the time of purchase as a method of improving consumers' ability to weigh fuel economy when choosing among vehicles. *See id.* at 188–93.

[360] Pub. L. No. 94-163, 89 Stat. 871 (codified as amended in scattered sections of the U.S. Code).

[361] 49 U.S.C. § 32908 (2006 & Supp. V 2011).

[362] Revisions and Additions to Motor Vehicle Fuel Economy Label, 76 Fed. Reg. 39,478 (July 6, 2011) (codified at 49 C.F.R. pt. 575). The EPA did not field test these new product labels, however, and admits that "[u]ntil the newly revised labels enter the marketplace with MY 2013 vehicles (or optionally sooner), [the EPA] may not be able to determine how vehicle purchase decisions are likely to change as a result of the new labels." 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 76 Fed. Reg. 75,115 (proposed Dec. 1, 2011) (to be codified at 40 C.F.R. pts. 85 86 600, 49 C.F.R. pts. 523 531 536 537).

[363] *Cf.* NUDGE, *supra* note 25, at 193–94 (discussing methods by which to directly inform consumers of their energy usage).

[364] Elke U. Weber, *Doing the Right Thing Willingly: Using the Insights of Behavioral Decision Research for Better Environmental Decisions*, *in* THE BEHAVIORAL FOUNDATIONS OF PUBLIC POLICY 392 (Eldar Shafir ed., 2013).

out in discussing "smart disclosure" in the consumer credit context,[365] there is reason to be skeptical that information presented in a different form will make consumers better optimizers or more able to overcome bounded willpower limitations. Indeed, in a detailed literature review prepared by the EPA as part of its fuel economy label redesign effort, not a single study documenting the effect of fuel economy labels on buyer choices was cited or discussed.[366] The EPA also did not engage in any field testing of these reformed labels to study their actual effects (or noneffects). When nudges fail to work well for behavioral reasons, the full policy-optimization approach that considers both traditional and behavioral sources of market failure *together* will generally produce different and better policy recommendations. And this would be true for all consumer products subject to the "energy paradox," such as refrigerators, air conditioners, and the like.

To see this, suppose that even with the optimal mandatory disclosure scheme and other nudges in place, consumers continue to underinvest in fuel efficiency when buying cars. Given the insights of BLE into behavior, this would not be a surprise. Once again, BLE assumes a kind of rationality, in response to a tax and better information disclosure, that BLE itself casts in doubt.

Once we take these behavioral insights seriously enough, however, and pursue their full implications, the standard Pigouvian tax no longer obviously results in efficient fuel economy choices. Cars will be less fuel efficient than socially (or privately) optimal. Socially efficient fuel economy decisions require investing in all positive NPV fuel efficiency technologies (given a tax equal to the externality), but actual consumers might not respond in this way to the tax.

Some economically inclined analysts might be tempted to address this problem by simply adding a "kicker" to the Pigouvian tax, raising the tax to some level even higher than the external social harm imposed by consuming fuel. If set high enough, this tax would induce even a biased consumer who undervalues fuel economy to make efficient fuel economy choices (precise calibration issues aside). But now, this strategy must confront an important downside: a consumer facing this super-Pigouvian tax will drive *less* than is socially efficient. In seeking to align fuel economy decisions ex ante, the high fuel tax distorts driving decisions ex post.

In this context, then, the full implications of behavioral insights are that we need two policy instruments to get behavior right on both decision fronts. We could try to do so by still staying within a market-

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[365] *See supra* section III.D, pp. 1647–58.

[366] *See* EPA, FUEL ECONOMY LABEL LITERATURE REVIEW (2010), *archived at* http://perma.cc/MP4P-KRLN.

based approach. Such an approach would be to subsidize fuel efficiency investments at the stage of the initial car purchase and to impose a Pigouvian fuel tax targeting the use of the car.[367] Such an approach can potentially implement more efficient fuel economy while preserving efficient incentives for fuel consumption.

To see the intuition, consider the relatively simple case in which there is no heterogeneity in behavioral biases — all consumers undervalue investments in fuel efficiency by some fixed percentage — but some heterogeneity in how much consumers will use their cars in response to gas prices.[368] To keep things simple, suppose a choice between two car models, one traditional, the other a hybrid. They differ only in fuel economy and price; the hybrid costs more but has better fuel economy. Then, a fuel tax equal to the marginal social harm from the externality will get all consumers' driving decisions right ex post (taking advantage of consumers' private information about their utilization values), while an appropriately calibrated subsidy for the hybrid can get all consumers' fuel economy choices right ex ante.[369] The subsidy ensures that a consumer buys the right car; the tax ensures that she does not drive it too much.

But in some models of behavioral bias, this fuel efficiency subsidy still would not be optimal or efficient. For example, suppose that some consumers rationally take into account fuel economy when buying a car; others completely ignore fuel economy. A subsidy then is counterproductive. In particular, at any subsidy level less than the amount that equalizes the price of the two models, the subsidy will only distort rational consumers' choices without improving those of consumers whose behavioral failings lead them to focus only on the initial purchase price.[370]

To see this effect, note that rational consumers make efficient decisions if they face just the Pigouvian fuel tax and no hybrid subsidy. Thus, any subsidy will inefficiently distort these consumers' purchase decisions toward hybrids. And inattentive consumers will simply ignore fuel efficiency and choose the cheaper nonhybrid model. If the subsidy were instead set so high that the hybrid model is cheaper, then

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[367] Indeed, subsidies for hybrid and electric vehicles have been used in the United States. *See* Energy Policy Act of 2005, Pub. L. No. 109-58 § 1341, 119 Stat. 594, 1038–49 (codified as amended in scattered sections of 26 U.S.C.).

[368] This special case is worked out formally in Hunt Allcott et al., *Energy Policy with Externalities and Internalities* 8–12 (Nat'l Bureau of Econ. Research, Working Paper No. 17977, 2012), *archived at* http://perma.cc/BGD7-R28J.

[369] Allcott et al. show that the optimal subsidy in this setting is one set so that the marginal consumer — defined as the consumer whose utilization value is such that if he acted rationally he would be indifferent between buying the fuel efficient technology and not — is made indifferent between investing in the fuel efficient technology and not. *Id.* at 17–18.

[370] *See id.* at 22.

all consumers would choose the hybrid, which is also inefficient. Note the parallel here with our analysis of sticky defaults above[371]: behavioral biases undermine market-based approaches that attempt to accommodate heterogeneity, in some cases resulting in those approaches functioning more like (poorly designed) mandates. If this undermining is the mechanism through which mistakes in fuel economy investments are made, the second-best policy may be to combine a Pigouvian fuel tax with a command-and-control performance standard that either mandates a shift toward hybrids or increases the fuel economy of both models.

The upshot of this analysis is that incorporating insights from behavioral economics into policy analysis of the pollution-externality problem might turn out to justify traditional command-and-control approaches, rather than more modest disclosure nudges. While the neoclassical account maintains that fuel economy standards like the CAFE program are inferior in all respects to a pollution-based externalities tax, evidence that consumers do not rationally take into account future fuel costs implies that a regulatory structure similar to current law might — contrary to conventional economic analysis — be optimal policy.[372]

Moreover, it is important to notice that our analysis and justification for fuel economy subsidies and performance standards are not paternalistic at all: ours is purely a conventional externalities argument about pollution's harm to others, but modified to take behavioral social science more fully into account. That is, even someone who is opposed to paternalism in any form, whether "hard" or "soft," could accept our argument. Private mistakes by individual consumers in fuel economy investments result in socially harmful levels of pollution. To solve the traditional externality-based market failure, given *actual* consumer behavior in response to alternative regulatory tools, a combination of Pigouvian taxes and mandates (as in current law) might be optimal. This approach will also, nicely, make consumers better off by their own lights. But here that is a byproduct of a behaviorally informed externalities analysis; no reference to paternalism is needed to justify regulatory tools like CAFE standards.[373]

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[371] *See supra* section III.D, pp. 1647–58.

[372] This justification for fuel economy standards has long been recognized. For an early defense of the CAFE standards based in part on consumer undervaluation of fuel economy, see David L. Greene, *Why CAFE Worked*, 26 ENERGY POL'Y 595 (1998).

[373] Accordingly, when the standards set by the joint national program that integrates the National Highway Traffic Safety Administration's CAFE standards and the EPA's greenhouse gas emissions standards for vehicles were recently updated, the agencies estimated that the mandated increase in fuel economy would yield substantial net benefits stemming from both the private benefits to consumers from reduced fuel consumption as well as benefits from reduced pollution. 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Aver-

To explain further our behavioral-externalities argument and situate it in the larger regulatory context, note that the potential role of fuel economy standards also depends on what other regulatory interventions are already in place to address the externality. As we have discussed, even with an externalities tax on fuel in place, fuel economy standards might still be justified on externality grounds. But suppose instead we had a cap-and-trade system already in effect, which imposes a binding economy-wide cap on fuel consumption. Now, fuel economy standards would not be justified as a means to reduce pollution externalities — the cap already determines the amount of pollution. Rather, fuel economy standards would then have to be justified purely on paternalistic grounds (plus an allocative-efficiency justification that operates through the price system).[374]

Our main point, however, is not to advocate for fuel economy standards. The jury is still out on the extent of the problems consumers have in making fuel economy decisions. Our principal aim is to illustrate problems with the dominant soft paternalism approach to BLE and to show that a more complete framework for incorporating behavioral insights can lead to policy prescriptions that go beyond *both* nudges and neoclassical prescriptions.

CONCLUSION

Social-scientifically driven behavioral work in law and policy remains among the most significant recent breakthroughs in academic work and applied public policy. Many of its insights and suggestions about disclosure, defaults, choice architecture, and attention to salience have already improved policy outcomes, with the promise of more to come. But BLE is deceptively appealing precisely because of its seductive mix of social-scientific realism and minimalist political aspirations. Whether out of philosophical conviction or acceptance of the perceived political constraints of the moment, embedded within BLE is a precommitment to regulatory tools that "preserve choice."

In some contexts, social science and effective politics might converge so that choice-preserving tools are, from a social-welfare perspective, optimal. We are not arguing in general against these tools or in favor of others, such as regulations or mandates. We are arguing

age Fuel Economy Standards, 77 Fed. Reg. 62,912–19 (Oct. 15, 2012) (codified at 40 C.F.R. pts. 85 86 600, 49 C.F.R. pts. 523 531 533 536 537).

374 In particular, the reduction in fuel consumption caused by fuel economy standards would lower the demand for, and therefore the price of, fuel. This change in the price of fuel would then induce more efficient fuel use and technology investments in other parts of the economy. So with a background cap-and-trade regulatory regime in place, fuel economy standards might be justified both by the savings to consumers and by an improved allocation of resources elsewhere in the economy, but not on environmental grounds.

instead for greater transparency of reasoning and for a fuller comparison of the costs and benefits of different regulatory instruments, without a precommitment to preferring those that privilege choice.

The judgment of academics regarding what is politically realistic is not necessarily a vice. But we have tried to show across three major policy areas, the various specific limits that do result from BLE's internal tension between social science and other possible goals, such as offering policies thought likely to be broadly consensual and realistic, or preserving libertarian philosophical values. There are risks, in areas such as consumer credit, that BLE suggests policy proposals that would enable political actors to claim credit for fixing problems (and to believe perhaps they have fixed them) that behavioral insights suggest run too deep for BLE remedies to resolve. So too there are risks, as in retirement savings, that BLE's fascination with its success on participation rates has led it to avoid broader questions about the optimal structure of government-supported retirement policies and to encourage policies that might have made the problem worse, not better. In other contexts, such as fuel economy and the energy paradox more generally, BLE might miss important synergies between market and behavioral failures it could exploit. For BLE proponents and those who rely on its policy recommendations, greater awareness of tensions between philosophical commitment, or perceived political realism, and the full force of the behavioral social science insights that have poured out of many disciplines in recent years can help continue to move the field forward.