Good Policies For Bad Governments:
Behavioral Political Economy

Daniel J. Benjamin
Harvard University

David I. Laibson
Harvard University and NBER

Abstract: Politicians and policymakers are prone to the same biases as private citizens. Even if politicians are rational, little suggests that they have altruistic interests. Such concerns lead us to be wary of proposals that rely on benign governments to implement interventionist policies that "protect us from ourselves." We recommend paternalism that recognizes both the promise and threat of activist government. We support interventions that channel behavior without taking away consumers' ability to choose for themselves. Such "benign paternalism" can lead to very dramatic behavioral changes. But benign paternalism does not give government true authority to control our lives and does not give private agents an incentive to reject such authority through black markets and other corrosive violations of the rule of law. We discuss five examples of policy interventions that will generate significant welfare gains without reducing consumer liberties. We believe that all policy proposals should be viewed with healthy skepticism. No doctor would prescribe a drug that only worked in theory. Likewise, economic policies should be tested with small-scale field experiments before they are adopted.

I.   Introduction

Behavioral economics goes by many names, including 'psychology and economics' and 'psychological economics'.[1] But even if the name is in doubt, most practitioners seem to agree on the following principles. Economic agents make good decisions but not perfectly rational ones. Economic research should use reasonable assumptions about agents' cognitive abilities. Economic models should make predictions that are consistent with micro-level data on decisions, including experimental evidence. Finally, economists have much to learn from psychologists.[2]

The current effort to give economics a psychological microfoundation began in the 1970's. At first behavioral economists focused primarily on laboratory research, which generated an ever-expanding list of experimental anomalies. This early experimental research strengthened the case for a psychological approach to economics and gave behavioral economists some legitimacy. Behavioral economists have subsequently turned their attention to the world outside the laboratory. Real markets and field data have been the engine of growth in recent years.

Behavioral economists now routinely combine experimental data, field data, and theory to construct their arguments. The development of the field has progressed to the point where many if not most of its basic insights are widely accepted within the profession. As behavioral economics continues to gain acceptance, behavioral economists will increasingly find themselves participating in policy discussions. Economics is a policy science and behavioral economics has a great deal to say about how economic institutions like markets sometimes fail to produce efficient outcomes.[3] Behavioral economics also has much to say about how economic institutions will sometimes perform better than standard theory predicts they should, for example when reciprocal altruism or identity effects lead to cooperative behavior.

This essay discusses some of the issues raised by this anticipated step into the policy realm. Section II contains a discussion of some broad conceptual issues, including

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[1] We prefer the name psychological economics because it suggests a unified body of research with economics at its heart. The name behavioral economics unfairly implies that mainstream economics is not about behavior.

[2] This definition is closely based on one provided in Laibson and Zeckhauser (1998, p. 7).

the critical point that the behavioral approach does not necessarily imply that policy makers should be particularly paternalistic or interventionist. In a behavioral world, policy has the ability to do good or to create great mischief, depending on who is in charge of making the rules. Indeed, in some cases the findings of behavioral economists suggest that activist policies may be quite harmful. We begin the essay by working through some of these paradoxical implications.

Section III discusses five policies that are examples of interventions that we support. All of these policies have the desirable feature of benign paternalism (Choi et al 2003c). They encourage good decision-making without being coercive. Such policies have the desirable feature that they encourage unsophisticated actors to make good decisions while allowing sophisticated actors to do whatever (or almost whatever) they want.

Section IV discusses several behavioral consequences for policy evaluation. We emphasize that psychologically realistic actors will not respond very quickly to policy changes, implying that policy evaluation may be different in the short and long run. Section V discusses behavioral implications for forecasting. We emphasize that forecasters should consider variables like consumer confidence that do not fit into traditional economic modeling frameworks. We also argue that economists have been too willing to largely abandon forecasting as a topic of academic research. It has been easier to ignore the challenges of forecasting than to acknowledge the failings of our favorite models, which have consistently made bad forecasts relative to ad hoc statistical forecasts that are used in the private sector (Zarnowitz & Braun 1993). Section VI concludes.

II.   Behavioral economics and paternalism.

Successful policy analysis should consider the motives of private actors (e.g., consumers and firms) and the "public" or governmental actors that formulate and enforce policy (e.g., regulators, bureaucrats, politicians). Policy analysis must also carefully

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[3] This is not an entirely new development. See Thaler (1994) for an early step in this direction.

consider the institutional environment in which these private and public actors interact (e.g., markets, elections, bureaucracies).

Private actors. To date, behavioral economics research has been most closely focused on the decisions of private actors like consumers and firms. A quick glance at the behavioral literature would lead one to conclude that these actors often make bad decisions, where "bad" decisions are defined as decisions that run counter to the self-acknowledged interests of the agent. Four particular sources of mistakes are highlighted below --- bounded rationality, (slow) learning, framing, and lack of self-control. Decision-making mistakes that derive from these sources will play a prominent role in the policy analysis in section III.

Economic actors often exhibit bounded rationality (Simon 1957). Specifically, actors fail to optimally use available information to solve decision problems. The behavioral economics literature is rife with examples of decision-making errors, including errors by expert decision makers.

For example, most doctors don't know how to interpret medical diagnostic tests. Eddy (1982) documents that not only physicians, but also prominent medical textbooks and reference books, frequently confuse accuracy rates,

$$\text{Pr(positive test result | disease)}$$
$$\text{Pr(negative test result | no disease)}$$

with the diagnosis,

$$\text{Pr(disease | positive test result)}.$$

For example, assume that a disease is present in 1% of the population and a diagnostic test has accuracy rates of 95% so that,

$$\text{Pr(positive test result | disease) = Pr(negative test result | no disease) = 95\%.}$$

What is the chance of disease, conditional on a positive test result? Few doctors can correctly answer such questions.[4]

Other examples of statistical confusion abound in the behavioral economics literature. For example, Tversky & Kahneman (1971) asked researchers in Mathematical

Psychology what they would recommend to a doctoral student who found a t-statistic of 2.70 in a difficult, time-consuming experiment on 40 animals and then a t-statistic of 1.24 in a replication with 20 additional animals. The most common recommendation was to try to find an explanation for the difference. In fact, the two results are not statistically different (t = 0.53), and the combined result is still large and significant.

The second source of mistakes is slow learning. Even if actors can be taught to make rational inferences, it typically takes a long time for them to learn these lessons. As a consequence, people make many bad decisions before they get things right. For example, in zero sum games it typically takes hundreds of rounds of play before a population of subjects settles into an equilibrium distribution of play (Erev & Roth 1998). Indeed, in many cases, the population of subjects continually cycles for the duration of the experiment. In some games, convergence is relatively quick (e.g., Nagel's p-beauty contest; Nagel 1995), but even in these games convergence still takes many rounds of play. In addition, actors do not appear to generalize insights across domains of application, dramatically limiting the power of learning (e.g., Novick 1990).

Anomalous sensitivity to the way a problem or an opportunity is framed provides a third source of decision-making mistakes. Tom Sawyer's success in getting his friends to whitewash a fence for him demonstrates Tom's mastery of framing effects. Ariely et al (2003) report a contemporary variant of Tom's experiment. The psychology and economics literature contains hundreds of experiments in which framing effects drive subject preferences. For example, when lotteries are framed as gains subjects exhibit risk aversion, but when lotteries are framed as losses subjects exhibit risk seeking.

Kahneman and Tversky (1979) report a classic version of this finding.[5] Subjects who have already been given $1000 (hypothetically) are subsequently asked to choose one of two lotteries: a certain reward of $500 or a 50% chance of earning $1000. The overwhelming majority (84%) of subjects make the risk-averse selection. A different sample of subjects are given $2000, and also asked to choose either a certain loss of

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[4] Applying Bayes rule one can show that the implied probability of illness is 16%.
[5] Harbaugh et al (2001) find that Prospect Theory's "four-fold pattern" of risk attitudes holds in pricing tasks (subjects report their willingness to pay for a gamble) but the opposite pattern obtains in their experiment when people choose between a gamble and its expected value. For example, consider a gamble that gives an 80% chance of winning $20. As predicted by Prospect Theory, subjects are risk-averse when

$500, or a 50% chance of losing $1000. Faced with this second lottery, an overwhelming majority (69%) makes the risk-seeking selection. But the two scenarios are actually identical. By collapsing lotteries, it is clear that both sets of subjects have been asked to choose between a certain reward of $1500 and a lottery with a 50% chance of paying off $1000 and a 50% chance of paying off $2000. See Tversky & Kahneman (1986), Johnson et al (1993), and Ariely et al (2003) for many more examples of framing effects.

Fourth, people suffer from internal conflicts between patient long-run goals (e.g., quitting smoking, dieting, exercising, finishing projects on time) and impatient short-run impulses for instant gratification. This apparent self-control problem may be generated by discount functions with a high short-run discount rate and a low long-run discount rate (Ainslie 1992).[6] This qualitatively "hyperbolic" model has been used to explain a wide-range of behaviors that are self-destructive (e.g., excessive credit card borrowing, Angeletos et al 2001; undersaving, Laibson 1997, Laibson 2003 and Choi et al 2002; substance abuse, Gruber and Koszegi 2002; and procrastination, Akerlof 1990 and O'Donoghue and Rabin 1999).

We have listed four sources of bad decision-making: bounded rationality, (slow) learning, framing, and lack of self-control.[7] With these effects in mind, one might conclude that government can easily improve consumers' welfare by paternalistically helping consumers make better decisions. Such paternalistic policies improve consumer welfare by enhancing an individual's likelihood of maximizing her own welfare. This stands in contrast to most public policies, which address externalities or public goods problems that arise because of interactions among economic agents.

In section III of this essay we will propose some paternalistic policies. However, first we wish to temper the optimistic interventionism of section III with three important caveats about the drawbacks of activist policies.

First, though the behavioral literature is rife with examples of bad consumer decisions, it is not clear whether this literature is representative of consumer decisions.

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reporting WTP (median is $12). By contrast, subjects are risk-seeking when choosing between the gamble and its expected value (56% chose the gamble).

[6] Behavioral economists do not believe that discount functions actually are hyperbolas. The hyperbolic function was originally used by psychologists, and this earlier literature generated the name.

Behavioral economists are naturally drawn to the aspects of human behavior that contradict the predictions of the classical (rational) economic model. Hence, the behavioral literature has focused on behavioral "anomalies." This focus is appropriate, because it helps to identify the practical boundaries of the rational actor model. But, policy analysis requires more than just a demonstration that irrational choices sometimes occur. Some policy analysis requires that we try to gauge the relative frequency and economic importance of irrational decision-making.[8]

For example, from the beginning of their research collaboration, Kahneman and Tversky often wrote that most decisions are made quite sensibly, and that heuristics are effective shortcuts that generate cognitively inexpensive, but nevertheless sophisticated choices. Kahneman and Tversky noted that heuristics sometimes backfire, and they set out to study these exceptions in order to identify the heuristics. Naturally, one would like to know how frequently heuristics lead to bad decisions before encouraging the government to institute policies like making decisions for us, reducing our choice sets, or educating us to stop using heuristics. One wonders whether we would be better off on average if we spent much more time making decisions by slowly calculating Bayesian posteriors instead of using our lightning fast (non-Bayesian) intuitions.

Second, consumers exhibit a great deal of heterogeneity in both tastes and in decision-making ability. An activist government might be able to make better decisions for consumers if it could identify each consumer's true tastes, but how would a government do this? Is a consumer gambling because she has a gambling addiction or because she really gets a great deal of pleasure out of a weekend in Las Vegas? Theory and intuition tell us that many consumers in Las Vegas are hurting themselves, but in practice it is hard to distinguish the self-destructive gamblers from the rational gamblers. Moreover, most consumers embrace the notion of consumer sovereignty and view themselves (if not their neighbors) as inspired decision-makers.

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[7] We omit discussion of other behavioral phenomena (e.g., fairness, identity) since we do not discuss related policy implications in this essay. However, we imagine that other authors will find such policy connections in the future.

[8] See Akerlof and Yellen (1985a, 1985b) for a theory of how second-order private mistakes can generate first-order aggregate effects.

Third, even if consumers do make bad decisions it is not always clear that the government is either rational enough or benign enough to make better decisions. We turn now to this critical player in the policy debate.

Governmental actors. Economists and political scientists (not to mention talk-show hosts) have long recognized the fallibility of government actors. Two issues stand out. First, governments are unlikely to be benevolent, since government actors have their own narrow interests at heart (e.g., Frye & Shleifer 1997, Shleifer & Vishny 1998). Second, government or "public" actors are likely to be vulnerable to many of the same biases that plague private actors.[9]

Warfare represents a good example of such biases. For example, at the start of World War I leaders on both sides of the war were overwhelmingly confident that they would emerge victorious in only a few months.[10] Such irrational warfare is quite common. Only two decades after the end of World War I, a second world war began, started by confident leaders in Germany and Japan who wrongly anticipated a favorable outcome.

Prohibition represents another canonical, albeit less extreme, example of bad governance. Few of the supporters of the 1919 Prohibition Amendment anticipated the perverse consequences of this law. Similarly, most of the large public housing experiments of the 1960's failed to attain their progressive promise. On a larger scale, centrally planned economies never met the expectations of the socialist leaders that championed them. With examples like these in mind, one wonders if government is reliably rational and farsighted enough to correct the mistakes of private agents.

Such concerns are heightened by the special dangers that activist governments pose in a behavioral world. If we believe that private actors often make bad decisions, then we should also worry about decisions at the ballot box. Moreover, we should expect psychological biases to be even stronger at the ballot box than in the mall because free-rider problems weaken incentives to make sophisticated voting decisions. Social pressures are also sometimes influential in elections, leading voters to support candidates for reasons that have little to do with good policies.

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[9] See Laibson and Zeckhauser (1998) for an early variant of these arguments.
[10] Add cite here.

If private actors sometimes elect bad leaders, how much power do we want governments to have? Naturally, we want good governments to have lots of power and bad governments to have no power, but such contingent authority is not a realistic option. In a behavioral world it might be best to have a relatively powerless government, circumscribed by checks and balances and constitutional hurdles, rather than an activist government that is empowered to intimately regulate the lives of its citizens. It is sobering to recall that the Nazi Party came to power through an imperfect but still substantially democratic electoral process. In retrospect, Germany would have been much better off if its government had been more hamstrung and less able to carry out its activist policy agenda.

The dangers of activist government are even more apparent when one considers the marketing tools available to powerful leaders. The modern state has a vast array of mechanisms for shaping the thoughts of its citizens and exploiting their psychological vulnerabilities. Biased journalism, political advertising, political patronage, political demagoguery, and other forms of propaganda campaigns all have the ability to create incumbent governments that can ultimately determine their own destiny by subverting the independent voice of the electorate.

Even if one optimistically believes that authoritarian governments are not a real threat anymore, one still has to contend with the much more common threat of corrupt governments. Irrational or uninformed consumers may be easily seduced by unethical leaders who use their power as an opportunity to extract financial rents for themselves and their confederates. Whether the threat is totalitarianism or simple theft, policies that constrain government (e.g., constitutions) may be a key piece of behavioral policy advice.

Institutions. Any discussion of policy must also consider the institutional setting in which policy is implemented. For example, we have already mentioned the critical role of political institutions. Dysfunctional, corrupt governments should not be encouraged to be more paternalistic, since such paternalism may well provide cover for rent extraction and other counter-productive government activities.

Likewise, electoral institutions play a key role in determining the optimal scope of paternalism. If elections sometimes empower demagogues, then we may want our governments to have relatively little power. By contrast, if elections lead to rational

national policy discussions and good government, then we will want democratically elected governments to have relatively great authority to intervene in the lives of their citizens.

Markets represent another key institution with ambiguous implications for the paternalism debate. In many ways markets protect behavioral agents, mitigating the need for activist government policies. But in other ways, markets create special vulnerabilities for behavioral agents, increasing the need for paternalism. To see these two countervailing effects, consider the following examples.

First, imagine a naïve consumer who is willing to pay $1,000,000 to buy an orange (the consumer thinks that eating an orange will make her live to age 100 and that oranges are scarce). Without markets, this consumer will quickly be cheated of her life savings. But, if this consumer conducts her transactions in the marketplace, then savvy traders will compete to do business with her. At the end of the day, the naïve consumer will be overjoyed to find that seemingly stupid traders have competed with each other to the point where they were ultimately willing to sell her an orange for the unimaginable price of 69 cents. This is a special case of the general property that markets protect irrational agents if goods are homogeneous and markets are competitive (Laibson and Yariv 2003).

By contrast, some markets can be exploitative. Consider the same example as above, but now imagine that a very successful advertising campaign has convinced a consumer that oranges grown on a particular tree (and only oranges from that tree) will make you live to age 100. This naïve consumer is willing to pay $1,000,000 for such an orange, and this price will be realized since competition is not possible. The consumer falsely believes that the oranges from that special tree are not substitutable oranges grown in any grove in Florida.

These two examples reveal both the bright and the dark side of free markets. Free markets protect us against some mistakes (e.g., a willingness to pay $1,000,000 for an orange), but fail to protect us against other mistakes (e.g., a willingness to pay $1,000,000 for a *particular* orange). The usefulness of governmental paternalism depends on which types of vulnerabilities we exhibit.

Benign paternalism. Up to this point, we have discussed both the pros and the cons of paternalism. We now turn our attention to specific governmental interventions that we support. We emphasize however, that our support presupposes a well-functioning government that is not prone to authoritarianism, corruption, or just plain stupidity. Many of the proposals that follow could become counterproductive if they were implemented poorly.

Before proceeding to the specific proposals, we first want to describe a fundamental criterion for good behavioral policy, which has been called benign paternalism (Choi et al 2003c). Benign paternalism encourages "desirable" behavior without eliminating the ability of consumers to ultimately choose for themselves. We believe that most successful behavioral interventions can be structured in a benignly paternalistic way. In other words, it is almost always possible to design policies that channel behavior constructively without fundamentally reducing consumers' ability to choose for themselves.

Such policies work by introducing small behavioral hurdles to counter-productive choices. Research in both the psychology literature and the economics literature demonstrates that these small hurdles can make an enormous difference in influencing behavior (Ross and Nisbett 1991). However, small hurdles are easy to overcome if a consumer has a strong preference. Hence, such hurdles influence behavior without effectively taking away consumers' choices or encouraging the creation of a black market in the target activity. The rest of this essay contains several examples of such soft or benign paternalism.

Gambling policy provides a case study with which to introduce benign paternalism. Banning gambling outright would be an example of strong paternalism, and we are confident that such a policy would not be desirable. Under such a strict regime many people would gamble illegally, undermining the behavioral goals of the gambling ban, undercutting respect for the law, and strengthening organized crime. In our view, banning gambling would work as poorly as the attempt by Prohibitionists to ban alcohol.

By contrast, the libertarian approach of completely legalizing gambling also seems like a bad policy to us. For many people, gambling is a self-destructive compulsion. Reducing the availability of gambling would help such consumers.

Keeping gambling opportunities out of sight and out of mind would help these compulsive gamblers avoid financial ruin.

A middle ground between criminalization and legalization could be implemented. A policy of benign paternalism might help compulsive gamblers reduce the harms of their habit without generating the adverse consequences of an outright gambling ban. We now discuss an example of such benignly paternalistic policies in the domain of gambling.

This policy addresses the self-control problems associated with compulsive gambling. This proposal requires that gamblers choose gambling liquidity limits. Such a policy helps gamblers who intend to limit their losses, but who in the heat of the moment rack up much larger losses by raiding their ATM accounts or taking cash advances from their credit cards. The policy works by preventing gamblers from buying chips if they have exceeded pre-determined liquidity lines. The limits on these lines would be set by the gambler *herself* some time in advance (say a week). Gamblers without a self-control problem would set large liquidity limits, since they don't need any external disciplining device. By contrast, gamblers with a problem would set small limits, thereby regulating themselves.[11] Such limits could be practically implemented by issuing all US citizens a gambling chip debit card, on which consumers would deposit liquidity for buying chips. Such deposits would work with a one-week lag.

Simpler liquidity-reducing policies can also be devised. For example, all-night gambling binges with unexpectedly heavy losses could be reduced by simply shutting down the chip windows at midnight.[12] Under this regime, gamblers who anticipate and desire risking large sums will buy ample chips before midnight and wager freely, while those who hadn't planned such an extravagant evening will go to bed when their limited supplies of chips run out.

The policies of facilitating self-imposed limits on chip access satisfy the requirements of benign paternalism. These policies discourage self-destructive gambling, without generating the adverse consequences of an outright or even a partial ban on

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[11] The incentive to create small limits could be increased by creating a very small tax for carrying a large limit (say 1% of the value of the liquidity limit per week). This additional twist would benefit naïve compulsive gamblers who falsely think they don't have a problem and hence don't mind cutting back their credit limit in advance.

gambling. Such benign paternalism helps boundedly rational consumers without imposing strongly paternalistic criminalization or even meaningfully reducing the effective opportunities available to "rational" gamblers.

Benign paternalism has the additional benefit of providing a partial safeguard against bad government. If governments are only able to adopt interventions that are weakly paternalistic, then bad policies will necessarily have limited impact. Highly motivated consumers will be able to override the goals of such policies. Moreover, such overrides will not generate harmful black markets, consumer stigma, or opportunities for organized crime. In practice, "benignly paternalistic" policies may have bad goals if the policies are chosen by bad governments, but such policies never threaten our fundamental liberties.

Policies that are benignly paternalistic create a little bit of behavioral friction (e.g., a chip window that is closed at midnight). As we will demonstrate below, such slight frictions will not stop behaviors that consumers highly value, but will stop behaviors about which consumers feel ambivalent or confused. We will discuss examples of policies in which the slightest frictions make enormous differences in productively channeling behavior.

Benign paternalism is closely related to other policy frameworks that have been proposed in recent years. "Asymmetric paternalism" (Camerer et al 2003) argues that policies should have a relatively large effect on irrational agents and a relatively small effect on rational agents. Benign paternalism follows this approach and makes it more stringent, arguing that government interventions should be required to protect our ability to choose for ourselves. As we will argue below, we believe that succesful paternalistic interventions are consistent with freedom of choice. "Anti-antipaternalism" (Jolls et al 2002) advocates "a skepticism about antipaternalism, but not an affirmative defense of paternalism." Like Jolls et al, we reject the straitjacket of pure libertarianism and acknowledge the risks of governmental activism. "Optimal paternalism" (O'Donoghue and Rabin 2003) recognizes that paternalism has costs and benefits, which need to be weighed against each other. Our approach seeks to aggressively minimize the costs of paternalism.

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[12] All of these polices also require enforcement of a policy of no chip resales.

III.   Five proposals for new policies.

1.   *Encouraging saving.* In recent years, several research groups have studied practical interventions that influence savings rates (Madrian and Shea 2001, Choi et al. 2002, 2003b, and Benartzi and Thaler 2003). This research demonstrates that psychological variables like defaults, deadlines, and automatic accelerators, have an enormous impact on savings behavior. By comparison, traditional economic variables like interest rates and match rates hardly matter at all.

Madrian and Shea (2001) and Choi et al (2002, 2003b) show that 401(k) defaults can transform savings outcomes. Choi et al (2002) report the results of natural experiments at three different companies. With a default of non-enrollment, employees with six months of tenure at the respective firms had enrollment rates of 38%, 40% and 50%. When the default was changed to 401(k) participation, enrollment rates jumped higher, despite the fact that employees were free to opt out of the default. Under "automatic enrollment" employees with six months of tenure had enrollment rates of 93%, 86%, and 96%. However, these automatic enrollment interventions tended to have little effect on the *average* savings rate across *all* employees at the firm (including participants and non-participants) since employees who were automatically enrolled tended to accept the conservative default saving rate of 2% or 3%. The effect of the *higher* participation rate roughly offset the effect of the *low* default saving rate, so the average saving rate did not rise.

Benartzi and Thaler (2003) report the results of an intervention in which employees were encouraged by a financial advisor to enroll in a plan that automatically raised their 401(k) contribution rate at each future pay increase. This "Save More Tomorrow" plan or "SMART" was optional and employees who signed up were free to opt out at any time. Eighty percent of the employees who were offered the SMART plan signed up and those who opted in raised their saving rate from 3.5% to 11.6% over three years.

Benartzi and Thaler's intervention was remarkably successful, but the intervention utilized a costly financial advisor who gave employees strong advice. Choi et al (2003c) report the results of a much more passive intervention that they call Active Decision. Specifically, employees at a firm were told that they had to fill out a form within a month of their hire date indicating whether they wanted to enroll or not to enroll in the 401(k) plan. Thus, employees were simply told that they had to make a (temporary) decision about 401(k) enrollment. This Active Decision raised enrollment rates dramatically relative to a regime in which employees were given a default of non-enrollment. Under the non-enrollment default, employees with six months of tenure had an enrollment rate of 45%. Under Active Decision, employees with six months of tenure had an enrollment rate of 70%. The Active Decision intervention also raised the average saving rate across all employees. Active Decision raised the average saving rate from 3.6% to 4.8% for employees with nine months of tenure.[13]

All of these interventions meet the requirements of benign paternalism, since the interventions do not impose outcomes on the intended beneficiaries. Employees are free to opt out of defaults or automatic accelerators. The Active Decision intervention is particularly neutral since this intervention only requires that employees make decisions for themselves. It is surprising that such a soft intervention can have such a significant impact on savings choices.

The large impact of these interventions leads to two contradictory conclusions. First, since these interventions were conducted by private firms, it may not be necessary for any government involvement. On the other hand, the substantial impact of these interventions implies that employers effectively have enormous influence on the savings decisions of their employees. We do not believe that private firms should be exclusively entrusted with this critical national role, particularly since private firms do not have a strong incentive to make sure that their employees "get it right."

In light of these considerations, we recommend the following governmental role in the regulation of 401(k) saving. First, we propose that all large firms (200 or more employees) be compelled to have a 401(k)-style plan. Such plans have the key feature of implementing savings choices by routinely deducting money from employees' paychecks

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[13] Comparisons of savings rates are not possible at six months of tenure because of data limitations.

and directly depositing that money in the savings plan. This automatic deposit feature is a critical tool in facilitating saving.

Second, we propose that firms be required to adopt one of two systems for new employees. Either new employees should be defaulted into the plan with an age-specific savings rate regulated by the government,[14] or new employees should be required to make an Active Decision about enrollment.

2. *Regulating asset allocation.* Two blatant errors plague asset-allocation decisions. First, employees hold far too much of their retirement wealth in own-company stock. In the Choi et al 401(k) database as of 1998, 32.4% of total 401(k) assets were invested in company stock. But that fraction conveys only part of the picture, because the denominator includes 401(k) plans with no company stock options. Among firms with company stock as an option in their 401(k) plan, 36.2% of total 401(k) assets were invested in company stock. Finally, among firms that made matching contributions in company stock, 53.0% of total 401(k) assets were invested in company stock. Perhaps even more strikingly, these numbers have slightly *risen* since the beginning of the bear market in 2000 and the advent of prominent bankruptcies including Enron and WorldCom (Choi et al 2003). Perhaps this should not surprise us, since surveys find that most 401(k) participants believe that own-company stock is less volatile than a stock mutual fund.[15] Moreover, firms face tax incentives that perversely *encourage* their employees to hold company stock. Executives also report that stock held by employees in their 401(k) plan is less likely to be voted in a takeover battle.

The second error applies to mutual funds in general, whether or not they happen to hold 401(k) funds. A simple way to achieve an inferior average return on your savings is to invest it in a mutual fund with high management fees (e.g., over 150 basis points). These funds do not earn enough in extra returns to offset their fees. In fact, funds with higher fees may earn *lower* returns. For example, Carhart (1997) estimates that a 100 basis point increase in load fees is associated with an 11 basis point decrease in net

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[14] For example, the default savings rate could start at 1% for 18-year-old employees and rise linearly to 10% for 65-year-old employees. Alternatively, firms could be given a range of acceptable defaults for each age group. Choi et al (2003a) provide a framework for picking the optimal default saving rate.
[15] John Hancock (2002).

returns. Hortacsu & Syverson (2003) study S&P 500 index funds, which necessarily
have nearly identical returns (the interquartile range of annual returns in 2000 was a mere
0.32%). Yet the interquartile range of S&P 500 index fund fees in 2000 ranged from
0.47% to 1.45% (and over 2% at the 90th percentile). Hortacsu & Syverson (2003) also
show that average mutual fund fees and the dispersion of fees increased over the 1990s,
probably because of the entry of large numbers of unsophisticated households into mutual
fund investing. Alexander et al (1998) show that many investors simply don't know what
fees they are paying and are therefore relatively insensitive to this price. Gabaix and
Laibson (2003) provide a formal theory of how imperfectly informed consumers will
make decisions, leading firms to charge high markups even in ostensibly competitive
markets. Barber et al (2002) argue that mutual funds have buried an increasing fraction
of their fees in expense ratios because investors have learned to be sensitive to the more
salient fees such as loads.

We propose policy remedies for both company stock and management fees. For
company stock, we suggest a default policy that would automatically sweep most
company stock holdings into other assets once a year, unless the employee specifically
opted out of such a default. More specifically, an employee would be told that if she held
more than 20% of her 401(k) assets in company stock, then the excess would be sold on a
certain date[16] and reallocated to her other assets on a proportional basis.[17] For example,
consider an employee who holds 40% of her 401(k) assets in company stock, 30% in a
stock index fund, and 30% in a bond index fund. If the employee does not opt out of the
reallocation default before July 1, then half of her company stock would be sold and the
proceeds would be divided equally among her stock index and bond index funds. This
reallocation would occur every year, and the employee would have the option on a year-
by-year basis to decline the reallocation. Given the success of default experiments to

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[16] The rebalancing dates would be smoothly spread out over the year, so that the rebalancing for all of the
employees did not occur on one day. For example, the day for a given employee could be the employee's
birthday, or the employee's hiring day, or the employee's first date of 401(k) enrollment. Assigning days
in this way would eliminate the problem of trying to sell a large block of stock on a single day.
[17] We choose a limit of 20% because some *behavioral* arguments suggest that holding company stock may
weakly benefit the workers and the firm. Specifically, anecdotal evidence suggests that (non-executive)
workers who hold company stock work harder. Of course, the direction of causality is ambiguous but
many human resource executives believe that the causality runs from stock-holding to effort. Such an
effect is behavioral, since the impact of a non-executive employee's effort on the stock price is vanishingly
small.

date (Madrian and Shea 2002, Choi et al 2002, 2003b), we have every reason to anticipate that this proposed default reallocation would have an enormous impact.

To address the problem of excessive management fees, we suggest that firms be required to make the management fees salient instead of burying them in the small print deep inside the mutual fund prospectus.[18] Just as credit card companies are required to clearly reveal their interest rate policies, and as mortgage companies are required to clearly reveal their APR (in a statement that consumers sign), mutual funds should be required to clearly report their management fees. There are many ways to practically achieve this. We suggest a method that is analogous to the warnings on cigarette boxes. A mutual fund prospectus would be required to report the management fee as a summary statistic on the cover of their prospectus. The management fee would be in large type and would be set off in its own space. Likewise, all mutual fund advertisements and quarterly reports to investors would also report management fees in large type set off from the rest of the text.

> **The annual management fee for "NAME OF FUND" is 1.5% of your investment. If you had $50,000 invested in "NAME OF FUND" then you would pay $750 per year in management fees.**

We believe that information framed this way would quickly lead to aggressive competition in management fees. This is preferable to the existing market equilibrium in which some firms spend a great deal on advertising (Jain & Wu 2000) to attract customers who overpay for money management (i.e., who pay high management fees). Because of free entry, this existing equilibrium generates no economic profits, so the current equilibrium is partially competitive. But this equilibrium is inefficient, since quasi-rents are expended on socially inefficient advertising. By contrast, a market with

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[18] The GAO (June 2000) and SEC (December 2000) advanced similar recommendations as voluntary (Barber et al 2002). We would mandate salient disclosure of the sum of all fees.

competition on management fees would lead to a more efficient outcome with less advertising and lower management fees.[19]

Thinking a little more generally, we are receptive to the idea of appointing a "Financial Advisor General," who would promulgate objective advice for consumer's financial health. The Financial Advisor General would communicate that advice using the bully pulpit, "product warnings," and product labels like the example above.[20]

3. *Privatizing social security.* The approaching retirement of the baby boom generation raises a substantial number of policy issues. Chief among them stands the insolvency of our Social Security system. Numerous policy makers (including our current President) have advocated a partial privatization of Social Security. Fully addressing this debate is beyond the scope of the current paper. We choose instead to focus on several narrow behavioral issues that are relevant to the existing privatization proposals.

From a behavioral perspective, framing effects represent a key aspect of social security privatization. Despite the "lock-box" rhetoric of the last election and the fact that Social Security is legally and officially off-budget, political speech almost always subsumes Social Security within the total government budget. For example, the 2003 Economic Report of the President, states, "After 4 years of surpluses, the unified Federal budget recorded a deficit of $158 billion in fiscal 2002, or about 1.5 percent of GDP" (p. 54). The text of the Economic Report of the President makes no distinction between on-budget and off-budget items. A more nuanced analysis is revealed in Appendix B of the report (specifically Table B78). The on-budget deficit was $318 billion in fiscal 2002, or about 3.1 percent of GDP. The off-budget *surplus* (primarily Social Security) was $160 billion, or about 1.6 percent of GDP (p. 369).

White House press releases also fudge the difference between on- and off-budget items. On February 3, 2003, the White House published a url titled, "Fact Sheet:

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[19] One intriguing counter-argument to this point is that the advertising has the unintended social value of encouraging saving in general.

[20] We envision the Financial Advisor General as analogous to the Surgeon General, among whose duties are "To protect and advance the health of the Nation through educating the public; advocating for effective disease prevention and health promotion programs and activities; and, provide a highly recognized symbol

President Bush's 2004 Budget."[21] The two-page Fact Sheet refers repeatedly to the "deficit," and in every case reports numbers that correspond to the sum of the on-budget deficit and the off-budget surplus. The fact sheet implicitly treats the budget as a single unified account.

None of this would matter if economists were not worried about the rate of national savings. But economists and demographers on both the right and the left *are* concerned. An enormous demographic transition into retirement should be preceded by a savings boom. Most analysts believe that we are not saving enough to meet the needs of an aging society.[22] Politicians mask the scope of the savings problem by reporting deficits that integrate Social Security surpluses with the rest of the government accounts. If consumers were perfectly rational and perfectly well-informed, they would not be confused by this veil. The way the budget is framed should not matter. But in reality, the framing makes all the difference.

This leads to our first observation. Social Security privatization has the important benefit of finally taking Social Security out of the government budget in a meaningful way. If the government deposits the Social Security surplus into private accounts, then politicians will have a very hard time calling those deposits government revenue. Hence, we believe that the creation of private accounts will force politicians to reveal the true scope of our current and future deficits. And we anticipate that this will place more pressure on the government to address our long-run savings problem by increasing the government saving rate (or at least decreasing the government's rate of dissaving).[23] We emphasize that private accounts will not by themselves raise national saving, but they will increase the public's awareness of the rate at which the government is dissaving in its on-budget accounts.

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of national commitment to protecting and improving the public's health"
(http://www.surgeongeneral.gov/sg/duties.htm).
[21] http://www.whitehouse.gov/news/releases/2003/02/20030203-6.html.
[22] Add cite here.
[23] Standard economic theory posits that an increase in government saving will be offset by private dissaving and vice versa (Barro 1974). Behavioral economists are skeptical of such predictions of "Ricardian equivalence."

In addition, the creation of private accounts would increase *private* savings if the government encouraged workers to make additional contributions into those accounts.[24] Here too the government could use defaults to effectively encourage workers to make contributions. These private accounts would also serve a critical role for workers at firms that do not have 401(k) accounts. Indeed, the default saving rate for privatized Social Security accounts could be inversely related to the existence of a DB and/or DC pension plan at the worker's firm.

We may appear to be solid supporters of privatization proposals. But privatization also has drawbacks that are particularly clear from the behavioral perspective. Privatization will leave many financially illiterate households in greater control of their financial destiny. For example, even employees that *already* invest in 401(k)'s don't seem to know much about financial assets: 47% believe money market funds are comprised partially of stocks; 49% believe money markets are comprised partially of bonds; only 9% know money markets contain only short-term securities; only 25% understand the inverse relationship between interest rates and bond prices.[25] The general US public must be even less knowledgeable than these 401(k) participants. Our concerns about high management fees (discussed above) would also apply to any privatized social security scheme (see also Diamond 2001).

We worry, therefore, that private accounts might do more harm than good. One way around this problem would be to try to regulate the investment opportunities available in private accounts. For example, management fees might be subject to clear reporting requirements like those discussed above. We also believe that asset allocation defaults would be useful, particularly in light of the fact that common portfolio returns would remove a potential source of inequality.

We worry however, that stronger medicine might be needed for the bedrock of our retirement preparation. Hence, we are led to relatively forceful interventions, like formal caps on management fees (75 basis points[26]) and requirements that all eligible

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[24] In practice we would need two sets of private accounts. One would contain "government" contributions, and these would be used to partially pay social security benefits. The parallel account would contain private contributions, and these would not offset social security benefits.
[25] John Hancock, 1998.
[26] If investors want additional financial services that cannot be provided in a system with a capped management fee, then investors could buy those financial services on an a la carte basis. For example, a

mutual funds be diversified within their asset class. We would also restrict investments to bread-and-butter asset classes: money market funds, bond funds, and stock funds. Note that these restrictions would not apply to investments outside of the Social Security system. But within the system, such strong restrictions appear to be necessary, particularly in light of the problems with privatization experienced by countries like Chile and Bolivia (Diamond 2001). Of course, such restrictions would be resisted by many financial service firms. If such restrictions are not politically feasible, then we view Social Security privatization as a bad policy.

4. *Stimulating aggregate demand.* Behavioral economists usually design interventions that try to help consumers save more. Here, we take up the opposite challenge: identifying policies that stimulate current consumption.

We begin by summarizing the precepts of a behavioral approach to stimulatory fiscal policy. First, stimulatory tax cuts should increase household liquidity in spending accounts (e.g., checking accounts). Second, stimulatory tax cuts should generate a *stream* of new liquidity for the target households instead of a few large lump sum transfers. Third, stimulatory tax cuts should be temporary. Fourth, stimulatory tax cuts should be framed as a windfall to be spent quickly. We now motivate these ideas.

Most behavioral models of the household predict that households will have asset-specific marginal propensities to consume. For example, an extra dollar of transitory labor income might generate 50 cents of additional consumption, while an additional dollar of stock wealth might generate only a penny or two of additional consumption. In traditional economic models, all wealth categories are fungible (on an after-tax basis), so the MPC should be constant across asset classes.

In traditional economic models, changing the sequence of lump sum tax payments won't effect consumption as long as the net present value of the total tax payments remains unchanged (Barro 1974). By contrast, behavioral models predict violations of such Ricardian equivalence. Specifically, behavioral models predict a high MPC out of

mutual fund could permit its investors five free non-automated calls per year to the customer service center. If an investor wanted more calls in a given year, the investor could be charged $15 for each of those additional calls. We also would be alert to the possibility that the 75 basis point cap became a focal point for industry collusion.

current changes in liquidity and a low (current) MPC out of changes in future wealth. For example, behavioral models predict that if you give a consumer a liquid dollar of wealth today and make that consumer repay $(1+r)^n$ dollars in n years, you will engender an increase in current consumption of about 15 to 30 cents.[27]

Behavioral models generate such an effect through three different, but mutually compatible, mechanisms. First, bounded rationality models predict that consumers will have a difficult time anticipating future events and hence may not respond today to the increase in their future tax liability. Second, hyperbolic discounting models predict that most consumers will be effectively liquidity constrained because almost all of their wealth is in *illiquid* assets. Hyperbolics hold little liquid wealth either as a self-disciplining device or simply because they quickly splurge their liquid wealth on instant gratification. Because hyperbolics tend to be liquidity constrained in equilibrium, they will have a large marginal propensity to consume out of current liquid wealth (Angeletos et al 2001 and Laibson, Repetto, and Tobacman 2003). Third, mental accounting (framing) models predict that consumers use mental shortcuts that label all the contents of one's checking account as "available for current consumption" but protect the content's of one's retirement account (Shefrin & Thaler 1988).

All of these models imply that liquid wealth transfers into one's checking account are likely to generate high MPC's relative to MPC's associated with anticipated future tax cuts or other types of future income flows.[28] The models also imply that tax cuts should come in a stream instead of a lump sum. For example, a hyperbolic agent is likely to simply consume a $100 windfall, whereas she might open up an IRA if she receives a $1000 windfall. As the windfall gets larger, the behavioral agent will be more likely to protect the money by moving into an illiquid, psychologically off-limits retirement

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[27] Angeletos et al (2001) and Laibson, Repetto, and Tobacman (2003) show that the hyperbolic discounting model predicts an MPC out of anticipated changes in income of about 0.15 to 0.30.

[28] For empirical evidence that supports this prediction see Hsieh (2003), Landsberger (1966), Levenson (1996), Soulelos (1999), Parker (1999), Poterba (1988), Shea (1995), and Wilcox (1989). See Browning and Dolores (2001), Hsieh (2003), and Paxson (1992) for evidence that households do anticipate future income changes (at least by one quarter) when the income changes are large and follow a persistent seasonal pattern.

account. Hence, aggregate demand will show greater impact if the hyperbolic household receives many small transfers, rather than one large transfer.[29]

The behavioral models also imply that tax cuts will substantially raise consumption whether or not the tax cut is permanent (although permanent tax cuts are likely to have the largest effects[30]). Consumers have a large MPC out of liquid wealth categories, whether or not liquid windfalls represent one-time events or changes to permanent income. It follows then that temporary tax cuts are likely to be preferable, since they are predicted to have a substantial effect on short-run aggregate demand without raising the specter of long-run fiscal imbalance, increases in long-run interest rates, and the resulting crowding out of investment.

Finally, the behavioral approach predicts that the framing of a tax cut will matter. For example, in the midst of the 2001 recession, Gene Sperling (the previous chairman of the National Economic Council) proposed a 'Christmas Holiday Shopping Tax Credit' of $300 for the 60 million taxpayers with the lowest income.[31] Linking a tax cut to a holiday shopping spree is an intriguing strategy for encouraging rapid spending. One could make such linkages even stronger by issuing tax credits in the form of coupons. For example, households could be issued $300 in "holiday" coupons that stores (but not financial institutions) would be required to accept. The coupons could expire a few months from their date of issuance. Under standard economic assumptions, such coupons would have almost no effect, since money is fungible. Under standard models that marginal propensity to consume out of such coupons would be only 5%. In a behavioral world, we anticipate a much larger marginal propensity to consume.[32]

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[29] See Landsberger (1966) for evidence that small windfalls are associated with an extremely large MPC (in excess of one!) whereas large windfalls are associated with smaller MPC's (around 0.25).

[30] See Blinder (1981) for evidence that permanent tax cuts have larger effects than transitory tax cuts.

[31] "Bang for the buck," *Economist*, September 29, 2001.

[32] Japan tried such a plan to encourage consumption, the "shopping coupon program," in the spring of 1999. For each child under 15, a family received 10 coupons worth about $20 each that could be spent at qualifying local stores. About half the elderly population also received coupons, so approximately 25% of the Japanese population received coupons in all. These coupons expired after 6 months. A survey by the Management and Cooperation Agency indicates that 11.8% of coupons were redeemed on the very day they were distributed, and 80% had been spent by the end of 4 weeks. Hori et al (2002) estimate that the MPC from these coupons was 0.2-0.3 in March 1999 (when most municipalities began to distribute the coupons), and they were spent mostly on clothing and entertainment. The cumulative MPC fell to 0.1 in subsequent months (March through July). These estimates may be biased downward because some municipalities distributed coupons before March, and some households may have increased consumption in anticipation of receiving the coupons.

Combining these principles, we can derive a behavioral economist's "ideal" stimulatory tax cut. Such a policy would reduce tax rates for only one or two years. The rate reduction would be quickly reflected in cash flow to households, say in the form of lower withholding rates or a tax credit mailed directly to households. The tax cut would be focused on households that are most likely to hold small quantities of liquid assets. Note that this "behavioral" tax cut is strikingly similar to traditional Keynesian proposals for aggregate demand management.[33]

5. *Targeting a positive inflation rate.* A rapidly expanding behavioral literature argues that inflation greases the wheels of the labor market. Many different behavioral models reach this conclusion, and they divide roughly into three overlapping categories. First, some models posit that workers suffer from money illusion, leading workers to focus on nominal wage changes instead of real wage changes. Second, some models posit that workers experience nominal loss aversion, so that an absolute decline in the nominal wage sharply undercuts worker morale. Third, some models posit that firms suffer from money illusion.

All three arguments have empirical support. Moreover, the first two arguments --- worker money illusion and nominal loss aversion --- have now become consensus views in the profession. The evidence for these effects comes in two forms. First, surveys show that employers and employees believe that morale is strongly adversely affected when nominal wages fall, leading the most qualified workers to leave the firm (surveys of managers include Bewley 1999, Campbell & Kamlani 1995, Agell & Lundborg 1995, Blinder & Choi 1990, Kaufman 1984; surveys showing that individuals strongly dislike nominal wage cuts include Shafir, Diamond & Tversky 1997, Kahneman, Knetsch, & Thaler 1986).

Second, such morale concerns lead firms to avoid nominal wage declines, a prediction that is confirmed in the data. Because of the adverse morale effects of declining nominal wages, firms that are under pressure prefer to fire some workers and retain other workers at the old nominal wage. Dozens of studies have confirmed this

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[33] This observation relates to the point made by Akerlof & Yellen (1987) that many of Keynes's insights, when properly understood, rest on behavioral foundations.

prediction by showing that nominal wages almost never fall (see Akerlof, Dickens, & Perry 1996 for a review).[34] The distribution of nominal wage changes looks like a truncated bell-shaped curve, with the truncation just below zero and the missing mass piled up at zero. The distribution of real wage changes exhibits no analogous pattern. These facts imply that labor contracts are almost always written to specifically avoid *nominal* wage declines. Higher rates of job separation and higher rates of unemployment are the resulting costs.

In the short-run, a little inflation can avoid these problems, as Akerlof, Dickens, & Perry (1996) argue. With a relatively modest inflation rate, say 3%, firms will rarely face pressure to cut nominal wages. Even if productivity at the firm falls by 3% per year, the firm can still avoid cutting nominal wages. In light of such effects, Akerlof, Dickens and Perry propose that policy makers adopt a target inflation rate that is slightly greater than zero. We are convinced by their arguments, though this advice needs to be weighed in a wider cost-benefit calculation, since it runs against standard economic arguments that support a zero (or even a negative inflation rate).[35]

IV.   Policy Evaluation

Behavioral economics not only suggests new policy recommendations, but also suggests a new framework for evaluating policies. Slow learning is the key to this approach. Traditional economic models assume that economic actors rationally respond

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[34] This literature goes back to Keynes (1936): "It is sometimes said that it would be illogical for labour to resist a reduction of money-wages but not to resist a reduction of real wages…But, whether logical or illogical, experience shows that this is how labour in fact behaves." The modern empirical literature includes Fehr & Goette (2003), Shea (1997), and Akerlof, Dickens, & Perry (1996). Bordo, Erceg, & Evans (2000), Bernanke & Carey (1996), and O'Brien (1989) confirm Keynes's observation that downward nominal wage ridigity played a key role in the Great Depression. Hanes (2000, 1993) argues that downward nominal wage ridigity also featured in earlier and later downturns. Kimura & Ueda (2001) provide evidence that Japan exhibited downward nominal wage ridigity during 1995-1998.
[35] For example Milton Friedman (1969) argued that the optimal inflation rate should be negative, since the sum of the optimal inflation rate and real interest rate needs to be zero to eliminate the opportunity cost of holding money. Robert Hall (1984) and Hall & Mankiw (1994) have advocated a zero inflation rate to ease household planning (cf. Ball, Mankiw, & Reis 2003). Martin Feldstein (1983) advocates a zero inflation rate to mitigate the distortionary impact of capital taxation.

to the incentives that they face. Behavioral economics posits a much slower response.
Learning can take years or even decades.

As an example of the importance of learning, consider the case of 401(k)'s.
These accounts were introduced in 1978, but their legal status was not clarified by the
government until 1981. Up until the Tax Reform Act of 1986, 401(k) plans were
relatively uncommon and only 10 million workers were active participants. In theory, the
clarification of the rules should have had a large impact. Instead, the number of 401(k)
plans and the number of 401(k) participants began a slow, but relatively steady climb.
By 1993, 401(k)'s had 23 million participants. By 2001, 401(k) plans had roughly 45
million participants.

The spread of 401(k) accounts has taken two decades so far and shows no sign of
stopping. The slow rate of diffusion derives partially from the fact that many firms were
originally "locked" into defined benefit pension plans, making the transition to a 401(k)
defined contribution plan difficult. But the slowness is also due to the fact that it has
taken a long time to educate human resource managers and workers about the value of
this new retirement mechanism. For example, when new workers join a firm, the median
worker takes about a year to join the 401(k) plan (Choi et al 2002).   Even at firms with
an employer matching contribution, the median worker takes more than six months to
join the plan.

Such delays suggest that policy reforms will have subtle dynamic effects. For
example, in the case of 401(k)'s there has been much debate about the role of asset
shifting (Poterba, Venti, & Wise 1995, Engen, Gale, & Scholz 1994; for recent attempts
to clarify this literature, see Benjamin 2003, Pence 2002, Engelhardt 2001, Engen & Gale
2000). Do 401(k)'s lead to asset shifting from taxable saving accounts, or do 401(k)'s
represent new saving? In a world with slow learning the answer may depend on when the
question is asked. When 401(k)'s were introduced, relatively wealthy employees were
the first workers to enroll for three reasons. Wealthy employees are the most financially
literate households, they are the least liquidity constrained, and they are most likely to
work at firms that were early adopters of 401(k) plans.

Such wealthy employees are most likely to engage in asset shifting. Over time,
however, 401(k) participation has spread to a more and more representative sample of the

total workforce. As less wealthy households enroll, we imagine that asset shifting has become less and less relevant. If these predictions are right, early studies of 401(k)'s should find less of a savings effect than later studies of 401(k)'s.[36] Early 401(k) participants were more likely to engage in asset-shifting, while late participants were more likely to be putting "new" dollars into their 401(k) accounts.

In the 401(k) example the efficacy of 401(k)'s is predicted to increase over time because of learning effects. However, in other policy domains learning effects imply a diminution of efficacy over time. For example, a major tax reform might have its intended positive impact in the short-run, but in the long-run the accounting industry will identify subtle tax shelters that will introduce unintended negative consequences. As these tax-shelters and other distortionary tax-avoidance strategies become more and more widely understood over time, the original tax reform will become less and less productive.

The behavioral approach requires a careful evaluation of the learning effects associated with any new policy regime. In almost all cases, learning effects will introduce significant differences in the short- and long-run impact of the policy.

V.   Forecasting

Forecasting is one of the most visible and arguably one of the most useful applications of macroeconomics. The demand for accurate macroeconomic forecasting among government and private sector decision-makers has always been high. However, ever since the large-scale macro-econometric models of the 1960s and 1970s fell into theoretical disrepute, academic economists have largely abandoned business cycle forecasting as a topic of study. Despite its important role in the everyday affairs of economic life, academic economists generally hold macroeconomic forecasting in low regard. We believe that forecasting should be much more elevated in status, and that the

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[36] Another reason for such a time effect is that assets held outside the 401(k) plan will be depleted over time, reducing the potential for asset shifting.

poor forecasting record of our current academic models is a serious indictment of the state of the field.

One way to improve forecasting accuracy considerably is to use a far greater number of objective measures of economic activity (Stock & Watson 2002). A complementary route is to take more seriously households' subjective reports of their attitudes, intentions, and expectations.

The newspapers herald the monthly release of consumer confidence indexes from the University of Michigan's Index of Consumer Expectations and the Conference Board's Consumer Confidence Index.[37] Consumer confidence is monitored even more enthusiastically in many places outside the U.S. Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Norway, Sweden, Switzerland, Taiwan, and the U.K. have national consumer sentiment programs (Curtin 1992).

Five questions comprise each of the Michigan and Conference Board indexes, two questions about current economic conditions and three about expectations of future conditions. For example, Michigan's current conditions questions are: "How would you rate present general business conditions in your area? {good/normal/bad}" and "What would you say about available jobs in your area right now? {plentiful/not so many/hard to get}." While a majority of private sector forecasters use consumer confidence to some extent (Zarnowitz & Braun 1993), academic economists who study forecasting have generally steered clear of it.

Economists have been skeptical about the predictive power of consumer confidence, but we urge more open-mindedness. In a univariate forecasting framework, consumer sentiment predicts real consumer expenditure (Carroll et al 1994) and GDP (Mutsusaka & Sbordone 1995), but the evidence on whether it has incremental predictive value beyond standard objective measures of economic activity is less clear. Howrey (2001) concludes that Michigan's index does not incrementally predict consumer expenditure but does help to predict business cycle turning points, controlling for the interest rate spread, stock prices, and the index of leading indicators. Carroll et al (1994)

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[37] Most recently, see "Consumer confidence rockets as war ends" on the front page of the *Financial Times*, April 30, 2003.

finds that Michigan's index adds 3% to the adjusted-R^2 of a regression of consumption expenditure growth on current and lagged income. Bram & Ludvigson (1998) show that the Conference Board index substantially outperforms the Michigan index in predicting consumer expenditure. They find that the Conference Board index adds 9% to the adjusted-R^2 of a regression of consumption expenditure growth on current and lagged income, stock price growth, and interest rate growth.

Economists have been skeptical of consumer confidence indexes because these indexes are just survey data. In part, this criticism is hypocritical since many of the usual datasets economists employ are surveys. On the other hand, asking households to "rate present general business conditions" is vague and may be just a noisy measure of more objective macroeconomic indicators. Actually, it should not be surprising that some of the questions seem poorly designed – the original Michigan survey was not expected to elicit any useful information! George Katona, in developing the Survey of Consumer Finances, convinced the Federal Reserve Board to begin with general questions about attitudes and expectations in order to establish a sense of trust with respondents (Curtin 1992).

It may be possible to construct better forecasting survey questions by combining economic theory with psychological principles for survey design. For example, economic theory highlights the roles of consumer spending and labor supply for business cycle conditions and the fact that households likely have better information about relevant local conditions than the econometrician. Psychologists have found that specific behaviors are best predicted by comparably specific attitudes (Ajzen & Fishbein 1977, Fishbein & Ajzen 1975). Therefore, in designing a survey instrument to predict consumer spending and labor supply over the next month, one should probably probe households' recent past actions and immediate future expectations and intentions about spending and finding a job. In fact, in analyzing the questions that compose the indexes, Bram & Ludvigson (1998) find that the more specific questions predict consumption growth better. They conclude that the Conference Board index outperforms the Michigan index because its questions focus more on the specific household and its local area.[38]

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[38] Curtin (1992) reports that in 1963, Michigan eliminated two questions that specifically elicited purchase intentions because, although the intentions data predicted the individual's purchases better than the more

In summary, economists may have dismissed consumer confidence surveys too hastily. There is evidence that these indexes may help in macroeconomic forecasting. Moreover, improved survey designs will likely generate more useful measures of consumer confidence. We urge economists to take existing consumer confidence surveys more seriously as potentially useful forecasting variables and to explore alternative survey questions that may tap in more directly to the household behaviors and attitudes that influence macroeconomic conditions.

VI.   Conclusion

We began this paper by warning about the dangers of activist government. Politicians and bureaucrats are prone to the same biases as private citizens. Even if politicians are rational, little suggests that they have altruistic interests. Rational demagogues will exploit the biases of the public (Glaeser 2002). Moreover, most governments suffer from corruption and bureaucratic self-dealing. Such concerns lead us to be wary of proposals that rely on benign governments to implement interventionist policies that "protect us from ourselves."

While constitutional constraints can partially avoid the pitfalls of bad government, no system of laws provides a perfect inoculation. We emphasize an approach toward paternalism that recognizes both the promise and threat of activist government. We have emphasized interventions that weakly channel behavior without taking away consumers' ability to choose for themselves. Such benign paternalism can lead to very dramatic behavioral changes (e.g., Active Decisions double the 401(k) participation rate). But benign paternalism does not give government true authority to control our lives and does not give private agents an incentive to reject such authority through black markets and other corrosive violations of the rule of law. We believe that governmental paternalism should be largely restricted to benignly paternalistic interventions since such interventions can be effective without opening the door to autocratic governance. We

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general attitudinal questions, the general questions predicted better predicted aggregate conditions. We suspect that the general questions pick up households' (noisy) impressions of aggregate conditions but that

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hope that this approach will appeal to both traditional advocates and opponents of governmental activism.

We also discussed five examples of policy interventions that we support. We believe that each of these interventions will generate large welfare gains without reducing consumer liberties. Indeed, in many cases the interventions that we propose increase consumer choice.

We have omitted other policy proposals that already appear in the behavioral literature. Some of those omitted policies currently have only preliminary evidence in their favor. Some of those omitted policies are supported by one behavioral theory but contradicted by another.[39] Some of those omitted policies fall outside the scope of benign paternalism. Finally, we imagine that some policies were omitted because of oversights on our behalf.

We anticipate that many behaviorally inspired policies will be proposed in the decades ahead. We wish to conclude by urging that they all be viewed with healthy skepticism (including our own proposals). Social psychologists have shown that decision-makers are overconfident in many different ways (Taylor and Brown 1988 and Weinstein 1980). We believe that social scientists and policy makers tend to overestimate the efficacy of the policies that they propose. Self-serving biases are strong and unintended negative consequences are hard to anticipate. Social scientists often advocate innovative ideas that subsequently turn out to be wrongheaded.

Luckily, we have a powerful tool that we can use to discipline our search for new policies. In most cases, governments should run small-scale field experiments to evaluate the consequences of new policies. Of course, every government comes into office with a sense of urgency and is likely to resist the idea of waiting for a year or more to know the outcome of a field experiment. We think that in most cases politicians should swallow hard and accept such delays.

No doctor would prescribe a drug that only worked in theory. Likewise, economic policies should be tested before they are adopted en masse. Even policies with no time-

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the intentions questions add more incremental predictive power, after controlling for objective measures.
[39] For example, some behavioral models imply that addictive goods should be heavily taxed (Gruber and Koszegi 2002, O'Donoghe and Rabin 2003), while other behavioral models imply that addictive goods should not be taxed at all (Bernheim and Rangel 2003).

flexibility, like counter-cyclical tax cuts, could be partially tested before they are actually needed.[40] Although field experiments are not perfect measures of policy impact, field experiments cost little relative to the aggregate costs of policy implementation and field experiments significantly improve our policy forecasts. To paraphrase, the road to hell is paved with (behavioral and non-behavioral) policies that were never tested.

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[40] For example, give 1000 households a stimulatory tax cut and carefully measure their response in comparison to a control group.

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