UNCERTAINTY, EVOLUTION, AND *BEHAVIORAL* ECONOMIC THEORY

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Abstract:

Armen Alchian was one of the great economists of the twentieth century, and his 1950 paper, *Uncertainty, Evolution, and Economic Theory*, one of the most important contributions to the economic literature. Anticipating modern behavioral economics, Alchian explains that firms most decidedly do not – cannot – *actually* operate as rational profit maximizers. Nevertheless, economists can make useful predictions even in a world of uncertainty and incomplete information because market environments "adopt" those firms that best fit their environments, permitting them to be modeled *as if* they behave rationally. This insight has important and under-appreciated implications for the debate today over the usefulness of behavioral economics.

Alchian's explanation of the role of market forces in shaping outcomes poses a serious challenge to behavioralists' claims. While Alchian's (and our) conclusions are born out of the same realization that uncertainty pervades economic decision making that preoccupies the behavioralists, his work suggests a very different conclusion: The evolutionary pressures identified by Alchian may have led to seemingly inefficient firms and other institutions that, in actuality, *constrain* the effects of bias by market participants. In other words, the very "defects" of profitable firms — from conservatism to excessive bureaucracy to agency costs — may actually support their relative efficiency and effectiveness, even if they appear problematic, costly or inefficient. In fact, their very persistence argues strongly for that conclusion.

In Part I, we offer a short summary of *Uncertainty, Evolution, and Economic Theory*. In Part II, we explain the implications of Alchian's paper for behavioral economics. Part III looks at some findings from experimental economics, and the banking industry in particular, to demonstrate how biases are constrained by firms and other institutions – in ways often misunderstood by behavioral economists. In Part IV, we consider what Alchian's model means for government regulation (with special emphasis on antitrust and consumer protection regulation).

UNCERTAINTY, EVOLUTION AND *BEHAVIORAL* ECONOMIC THEORY

Geoffrey A. Manne & Todd J. Zywicki[1]

Introduction

Armen Alchian had a dramatic impact on law and economics through his scholarship and teaching. While it is said (perhaps incorrectly[2]) that he did not write a lot compared to many of his peers, the quality of his major papers has left many with the opinion that he was one of the great economists of the twentieth century. One of his most important contributions was his 1950 paper, *Uncertainty, Evolution, and Economic Theory*,[3] which was published in the Journal of Political Economy.

The basic thesis of the paper is that economists can make useful predictions, "with a modified use of his conventional analytical tools,"[4] even in a world of uncertainty and incomplete information. Because market environments "adopt" those firms that best fit the conditions, modeling firms *as if* they are rational economic actors, even if the epithet is descriptively inaccurate, is appropriate. In other words, market economics is much like survival of the fittest in evolutionary biology: those best suited to the conditions of the (business) environment survive. Firms that do not make at least a positive profit will exit the marketplace. As a result, firms can often be modeled as "profit-maximizers" even if "profit-maximization" was not — could not be — their goal, or even if they didn't intentionally choose an optimal path to get there.

This insight has implications for the debate today over the usefulness of behavioral economics. Behavioral economists have criticized the law and economics paradigm, alleging that its proponents wrongly assume that individuals in the marketplace act rationally and in their self-interest. Drawing on psychological literature, behavioral economists argue that consumers and firms fail to act in the way that neoclassical economic models would predict. But, as we discuss, Alchian's explanation of the role of market forces in shaping outcomes poses a serious challenge to the behavioralists' claims. Alchian's (and our) conclusion is born out of the same realization that uncertainty pervades economic decision making that preoccupies the behavioralists, but suggests a very different conclusion. The evolutionary pressures identified by Alchian may have led to seemingly inefficient firms and other institutions that, in actuality,

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[2] *See* David Henderson, *Alchian Didn't Do a Lot of Work?*, ECONLIB (Feb. 21, 2013), *available at* http://econlog.econlib.org/archives/2013/02/alchian_didnt_d.html.

[3] Armen A. Alchian, *Uncertainty, Evolution, and Economic Theory*, 58 J. POL. ECON. 211 (1950).

[4] *Id.* at 211.

constrain the effects of bias by market participants. In other words, the very "defects" of profitable firms — from conservatism to bureaucratic problems to agency costs, etc. — may actually support their relative efficiency and effectiveness, even if they appear problematic, costly or inefficient. In fact, their very persistence argues strongly for that conclusion.

The paper will proceed as follows. In Part I, we will offer a short summary of *Uncertainty, Evolution, and Economic Theory*. In Part II, we explain the implications of Alchian's paper for behavioral economics. Part III looks at some findings from experimental economics and the banking industry regarding how biases are constrained by firms and other institutions. In Part IV, we consider what Alchian's model means for government regulation and the place of behavioral economics in guiding it.

I. Summary of *Uncertainty, Evolution, and Economic Theory*

Alchian begins *Uncertainty, Evolution, and Economic Theory* by stating that "[a] modification of economic analysis to incorporate incomplete information and uncertain foresight as axioms is suggested here."[5] Alchian's main target was not behavioral economics, but his argument has direct bearing on many of its criticisms of neoclassical economics.

Alchian argues that profit or utility maximization are not good guides to predict individual human action. Part of the difficulty is that individuals act in the face of uncertainty. Under such conditions, profit maximization does not really make sense as a goal because there is a distribution of possible outcomes. At best, this means that one can choose an action which brings an optimum distribution given constraints, rather than a "maximizing" outcome.

Instead, Alchian points to ex post positive profit realization within the market process, rather than "rational" profit-maximization, as the lynchpin of economic efficiency in markets. Firms that realize positive profits will succeed, and those that fail to make positive profits will disappear. Ex post, it will appear as if economic decision makers acted rationally. Much like in biological evolution, those choices that tend to result in positive profits under given conditions will survive in the marketplace, leading to a marketplace that looks like one would expect if actors were rational profit maximizers, even though *actual* profit maximization need not be economic actors' intention.[6]

As Milton Friedman put it:

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[5] *Id.* at 211.

[6] Fred McChesney also notes the relevance of Alchian's evolutionary model to behavioral economics for understanding market outcomes. *See* Fred S. McChesney, *Behavioral Economics: Old Wine in Irrelevant New Bottles*, 21 S. CT. ECON. REV. __ (forthcoming 2014).

> [U]nder a wide range of circumstances individual firms behave as if they were seeking rationally to maximize their expected returns (generally if misleadingly called "profits") and had full knowledge of the data needed to succeed in this attempt; as if, that is, they knew the relevant cost and demand functions, calculated marginal cost and marginal revenue from all actions open to them, and pushed each line of action to the point at which the relevant marginal cost and marginal revenue were equal. Now, of course, businessmen do not actually and literally solve the system of simultaneous equations . . . any more than leaves or billiard players explicitly go through complicated mathematical calculations or falling bodies decide to create a vacuum . . . .
>
> [U]nless the behavior of businessmen in some way or other approximated behavior consistent with the maximization of returns, it seems unlikely that they would remain in business for long. Let the apparent immediate determinant of business behavior be anything at all—habitual reaction, random chance, or whatnot. Whenever this determinant happens to lead to behavior consistent with rational and informed maximization of returns, the business will prosper and acquire resources with which to expand; whenever it does not, the business will tend to lose resources and can be kept in existence only by the addition of resources from outside. The process of "natural selection" thus helps to validate the hypothesis—or, rather, given natural selection, acceptance of the hypothesis can be based largely on the judgment that it summarizes appropriately the conditions for survival.[7]

Many behavioral economists criticize neoclassical economics on the ground that individuals do not always act rationally. But, as Alchian argued, "[e]ven in a world of stupid men there would still be profits."[8] Chance and luck could play as big as a role as conscious adaptation in finding success. While some successful business models may be adopted by firms in pursuit of profits, Alchian finds it at least as likely that the *environment* adopted those business models.

Uncertainty does not imply randomness, though. Economic models criticized by behavioral economists can still make useful, and often accurate, predictions even if perfect rationality and self-interest are not good guides to intentional action:

> As a consequence, only the method of use, rather than the usefulness, of economic tools and concepts is affected by the approach suggested here; in fact, they are made more powerful if they are not pretentiously assumed to be

[7] Milton Friedman, *The Methodology of Positive Economics*, *in* ESSAYS IN POSITIVE ECONOMICS 14, 21-22 (1953). McChesney notes that while behavioral economists frequently justify the relevance of their conclusions on the basis that the *assumptions* of the model matter to make valid predictions, Friedman's insight was that the assumptions of the model are not independently important—what is important is the accuracy of the *predictions*, not the assumptions. Because the assumptions of any economic model must be some simplification of the full range of factors involved, all assumptions by definition are "unrealistic." *See* McChesney, *supra* note 6. *See* also, Geoffrey A. Manne & E. Marcellus Williamson, *Hot Docs and Cold Economics*, 47 ARIZ. L. REV. 609, 616-19 (2005)

[8] Alchian, *supra* note 3, at 213.

> necessarily associated with, and dependent upon, individual foresight and adjustment. They are tools for, at least, the diagnosis of the operation of an economic system, even if not also for the internal business behavior of each firm.[9]

This is not to completely denigrate the participants in the market process, either. Alchian recognizes that there is significant, intentional adapting behavior. In particular, he emphasizes trial and error and imitation. He argues that the uniformity often observed in the marketplace could have much to do with imitation, and that innovation is often the result of a trial and error process.

The big takeaway from the paper is that, even if businesses are not trying to maximize profits, their behavior can still be modeled effectively by that assumption. There is a survivor bias in the marketplace. If firms do not make a positive profit, they will eventually have to leave the market. The firms that remain will be those that *did* succeed in making a positive profit, regardless of their motivations.

II. Some Implications of Alchian's Model

Alchian's model of economic survival suggests that *even if* individuals suffer from universal biases (such as over-optimism bias, the endowment effect, and the like) this may have limited implications for allocative efficiency. In short, just as Alchian's model suggests that firms act *as if* they are seeking to maximize profits (even if they are not consciously seeking to do so), his model also suggests that firms can be modeled *as if* they are rational actors even if they are comprised of entirely irrational decision makers.

There are two elements to an evolutionary model—variation and selection. Alchian argues that even if variation is entirely random, if the selection process is sharp enough then it will *seem* that the variation itself was purposeful (i.e., intended to produce the result it seems to solve). Of course, if the variation itself is also intentional, then it might converge to the efficient process more rapidly—so, for example, Steve Jobs might be particularly good at coming up with new "variations" (i.e., new products or ways of doing things), but it isn't necessary to have purposeful variation to bring the end result about. In other words, somewhat non-intuitively, for Alchian the process of selection matters more than the process of by which variation is produced. In particular, as discussed below, in many cases the important variations in the economic market bear no relationship to the intent of those who produced them.

A key implication is that it is not necessary for those who work within a firm to be rational in order for the *firm* to act as if it is rational. A firm might simply stumble upon some innovation

[9] *Id.* at 217.

that provides it with a competitive advantage against its rivals. If so, then that firm will prosper while other firms decline, regardless of whether the firm understands the source of its competitive advantage (although Alchian makes clear that firms that do understand their competitive advantages will gain still larger advantages against their rivals). Thus, assuming that behavioral economics findings about individual biases are sound, the real lasting contribution of behavioral economics to the study of firms and markets may be positive, rather than normative — the presence of behavioral biases might explain certain anomalies observed in the marketplace, but rather than implying market failures in need of corrective intervention, these insights might actually explain the sometimes curious institutions that have grown up around them as designed to ameliorate any inefficiencies that might arise a result of them.

This insight has several implications.

First, it suggests that even if there is widespread irrational behavior in the world, this simply creates a profit opportunity for producers that are comparatively less-irrational in their decision making. Thus, over time, less-irrational firms should out-compete more-irrational firms, suggesting that only the most relatively rational firms will persist. Thus, the overall impact on allocative efficiency of even widespread irrationality may be minor if the marginal surviving firms are the most relatively-rational firms in the market.

Second, Alchian's model suggests that even in a world of irrationality, the number of market failures that require government intervention may be smaller than expected. In other words, although it is theoretically possible that certain biases could lead to market failures requiring governmental correction, it may be more accurate to presume that those firms that survive are those that have done the comparatively-best job of creating internal structures designed to mitigate the costs of those biases to the firm's operations. Thus, through the evolutionary process of competition, firms that survive can be presumed to be the ones that have best-solved the possible problems arising from irrational biases among their employees. This implies that before governmental intervention is urged as a response to a purported behavioral bias, the regulator should first determine whether the effects of the bias *have already been addressed* through the structure of firms themselves before making a persuasive case for intervention. Moreover, it implies that corrective action directed toward existing, successful firms will necessarily be directed against the very structures that have proved most successful in ameliorating the biases that government intervention might otherwise hope to address. This would turn the justification for government intervention on its head.

Finally, as a corollary to the second point, the intersection of behavioral economics and Alchian's model of evolution suggests the possibility that certain practices of successful firms that appear to be inefficient may actually be efficient if assessed more "holistically" in terms of

their ability to ameliorate the effects of behavioral biases and uncertainty. In other words, viewed against a more realistic but-for world rather than a fanciful ideal, apparent relative inefficiency (or even apparently harmful conduct) may actually be relative efficiency.[10] More simply, compared to firms that failed because they made different decisions, a firm's very existence is some evidence of its relative efficiency and something of a *prima facie* reason to refrain from deterring its particular conduct or structure. For example, it may be that certain apparent redundancies in decision-making within a firm appear to be inefficient, and the organization in need of streamlining. But that conclusion may be dependent on the fanciful assumption that those working within the firm are rational. If, on the other hand, they suffer from various biases, then it may be that the firm's operational redundancies are actually an adaptation designed (or happened upon by accident) to check the aggregate impact of those biases.

In some sense, then, behavioral economics provides no new fundamental challenge to the economic understanding of firms and markets. In particular, the issues raised by behavioral economics appear little different than long-understood limitations on perfect rationality such as ignorance and constrained decision making under uncertainty — the very focus of Alchian's 1950 article (recall that the title is "Evolution, *Uncertainty*, and Economic Theory").

III. The Behavioral Economics Background: Examples from the Literature

This Part of the article describes some prior contributions to the economics literature that illustrate these concepts. In particular, we focus on two lines of analysis that are consistent with our understanding of the intersection of behavioral economics and Alchian's theory of evolution.

Part III.A details findings from experimental economics supporting the understanding of certain forms of economic organization (such as firms) as functioning in a manner that is (observationally if not intentionally) less-irrational than alternatives. Following Alchian, this

[10] Thus, the concept of X-inefficiency, which purports to measure the difference between observed behavior and optimal efficiency given certain inputs, attributing persistent inefficiency to the absence of competition, is misguided. It falls prey to the Nirvana fallacy of assuming perfect information so aptly skewered in Alchian's article. As George Stigler quipped (citing Alchian and Demsetz), "[o]utput and utility would be larger if resources were not necessary to the enforcement of contracts, but output and utility would also be larger if water boiled at 180F or a day had 25 hours." George Stigler, *The Xistence of X-Efficiency*, 66 AM. ECON. REV. 213, 213-14 (1976). Resources "wasted" on "inefficient" structures that result in greater productivity net of their costs than could be achieved (in the real world) without them are neither wasted nor inefficient. Their persistence is perfectly consistent with the existence of robust competition; properly understood, they are, in fact, hallmarks of efficient behavior. This leads also to the idea, discussed below, that variations in output given certain inputs may be explained by necessary variations in entrepreneurial capacity — in other words, the process of trial and error that describes very nearly every moment in time when evolution is in progress, not yet having reached some theoretical equilibrium and weeding out the relatively inefficient. *Id.* at 215.

would suggest that, over time, the relevant types of economic activity will tend to be organized around these less-inefficient structures, which is precisely what is observed in practice. In turn, this suggests that markets may be more rational (efficient) than the people who operate within them.

Part III.B describes the notable contribution of Robert Rasmussen, whose positive analysis of the organization of activity within a firm provides an example of the possible use of behavioral economics to explain the evolution of certain market or firm practices that might appear irrational but for perhaps serving to mitigate the effect of individual irrationality — in other words, making the firm (economy) more rational than the individuals within it.

A. Context and the Manifestation of Behavioral Biases

Alchian's theory of evolution suggests that the presence of inefficient institutions in markets creates a profit opportunity for entities that do not suffer from those biases. As a result, the most efficient provider of a service in a market will end up in the role in which it has a comparative advantage and allocative efficiency will not be affected. Indeed, if behavioral biases actually exist, it may be that certain institutions within a market exist precisely to compensate for the presence of those biases in the market.

It is easy to point to numerous market institutions that might be explained in some degree as a response to compensate for behavioral biases. For example, if there is such thing as an "endowment effect" (which appears to be highly context dependent[11]), one could easily imagine that it might apply in the context of the sale of one's home (as might other purported biases such as the over-optimism effect). If there are biases that uniquely apply to the seller of a home (the so-called "willingness-to-pay, willingness-to-accept" gap), then this would suggest that the number of home sales would be suboptimal and that it should take longer to sell a home than is optimal. If there is an endowment effect with respect to the sale of one's home, real estate agents could easily be imagined as serving at least in part to counterbalance this bias by providing a less- (or at least differently-)biased check on the value of the home, bringing the two parties together.

Notably, the presence of the endowment effect appears to be highly context-dependent. For example, in a famous study, Kahneman, Knetsch, and Thaler claimed to have found the presence of an endowment effect, but not when goods are purchased for resale rather than use.[12] Moreover, they also found that the endowment effect is primarily a problem for sellers,

[11] *See, e.g.*, Charles R. Plott & Kathryn Zeiler, *The Willingness to Pay–Willingness to Accept Gap, the 'Endowment Effect,' Subject Misconceptions, and Experimental Procedures for Eliciting Valuations*, 95 AM. ECON. REV. 530 (2005).

[12] Daniel Kahneman, Jack L. Knetsch, & Richard H. Thaler, *Experimental Tests of the Endowment Effect and the Coase Theorem*, 98 J. POL. ECON. 1325 (1990).

not buyers. Finally, they concluded that the endowment effect is primarily a problem only in thin markets without a lot of competing sellers in the market. In short, Kahneman, et al., find that, in theory, there is potential for the endowment effect to disrupt market efficiency if sales are made in contexts similar to those that they describe.

Franciosi, et al., describe Kahneman, et al.'s findings as, "[t]hus there is no endowment effect for the retail firm, only for the consumer purchasing the firms' goods."[13] The implications of this finding is clear for predicting the organization of market activity: It would be expected that an institution might arise whose primary comparative advantage would be that it did not suffer from an endowment effect as strongly as other institutions, perhaps by specializing in *buying* goods for *resale*. We could call this institution "Wal-Mart" if we like, but essentially any sort of middleman or intermediary of that type could serve the function of counterbalancing the bias of the endowment effect. Thus, rather than conducting all retail activity via consumer-to-consumer sales, or relying on craftsmen to sell, as well as make, their own goods, various intermediaries might arise to solve this problem.

For much the same reason, Levitt and Syverson's famous paper demonstrating that real estate agents systematically "cheat" their clients, selling their own houses for a higher price and keeping them on the market longer than those of their clients, and the puzzle of the persistence of real estate agents in the face of this bias, may not be so puzzling.[14] Levitt and Syverson evaluates *completed sales* in their analysis, but do not account for the possibly much larger deadweight loss from uncompleted sales that might arise in the absence of real estate agents. In other words, real estate agents may appear to introduce inefficiency into housing markets, but, conceived more broadly, they may in fact do the opposite. Lawyers may serve a similar function in settlement negotiations if their clients suffer from biases that might cause them to overestimate the value of their claims at trial.[15]

The behavioral literature also points toward other mitigating forces. In his famous study of sports memorabilia collectors and Disneyworld pin collectors,[16] John List found that, although the endowment effect could be identified among participants in those markets, more experienced market participants (such as professional dealers) exhibited less of an endowment

[13] Robert Franciosi, Praveen Kujal, Roland Michelitsch, Vernon L. Smith, & Gang Deng, *Experimental Tests of the Endowment Effect*, *in* VERNON L. SMITH, BARGAINING AND MARKET BEHAVIOR: ESSAYS IN EXPERIMENTAL ECONOMICS 25, 25 (2000).

[14] Steven Levitt & Charles Syverson, *Market Distortions When Agents Are Better Informed: The Value of Information in Real Estate*, 90 REV. ECON. & STAT. 598 (2008).

[15] *Cf.* Ronald Gilson, *Lawyers as Transaction Cost Engineers*, *in* THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 508 (Peter Newman ed., 1998).

[16] John A. List, *Does Market Experience Eliminate Market Anomalies?* 118 Q. J. Econ. 41 (2003).

effect than less experienced. List concludes that because of the presence of these experienced traders in the market, the efficiency of those markets converge to that predicted by neoclassical economics. Moreover, this suggests that the role of dealers in this market could be consistent with providing a mechanism for trades to occur without the blockages of the endowment effect.

Building on Kahneman, et al., Arlen, Spitzer, and Talley found that although individuals display an endowment effect, the framing of their economic roles can affect the manifesting of the bias.[17] So, for example, in their experimental study, they asked participants to imagine themselves to be agents, trading goods on behalf of another person (the principal). They found that under this framing of the issue, the endowment effect largely disappeared. Again, the implications for understanding economics is clear — if there is an endowment effect, that simply creates an opportunity for institutions to arise that have a comparative advantage in alleviating the effects of that bias. In that sense, the market responses to purported behavioral biases is no different from the fact that market institutions exist that are responsive to the problems of imperfect information or strategic behavior.

To be sure, retailers, middlemen and the like serve additional functions, as well. But if there is such a thing as the endowment effect, it does not follow that this will necessarily produce market inefficiencies. Instead, it can be expected to produce market pressures for entrepreneurs to create institutions that will exhibit less of an endowment effect than others, and thus will survive in the market process.[18] It should also be noted that the absence of such innovations at any given moment does not imply inefficiency nor require intervention to correct given the scarcity of entrepreneurial talent and the messiness of the evolutionary process. Rather, at any given moment, entrepreneurial inputs may be being employed elsewhere to correct even more significant inefficiencies, and any given intervention may or may not improve overall market efficiency.[19]

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[17] Jennifer Arlen, Matthew Spitzer, & Eric Talley, *Endowment Effects within Corporate Agency Relationships*, 31 J. LEGAL STUD. 1 (2002).

[18] This point also precludes the generalization of other "evidence" of bias like that identified by Buccafusco and Sprigman in their papers, *The Creativity Effect*, 78 U. CHI. L. REV. 31 (2011) and *Valuing Intellectual Property: An Experiment*, 96 CORNELL L. REV. 1 (2010). Their analysis claims that observed biases in the direct sales of poetry and art imply certain policy correctives (like broader fair use rules and weaker property rights in IP). But because their analysis finds results in a stylized experiment without intermediaries or the possibility of bias-mitigating structural innovations, it has little or no implications for actual real world policies. *See also* Geoffrey Manne, *Comment on Sprigman & Buccafusco, Valuing Intellectual Property*, TRUTH ON THE MARKET (Dec. 6, 2010), http://truthonthemarket.com/2010/12/06/sprigman-and-buccafusco-on-valuing-intellectual-property/#comment-20496.

[19] *Cf.* Stigler, *supra* note 10, at 215-16 ("The latter assumption of competitive selection coolly ignores the problem of general equilibrium (where do the driven-out entrepreneurs go?, and where do the efficient entrepreneurs

B. Robert Rasmussen and the Organization of Loan Decisions Within Banks

Robert Rasmussen's observations on the nature of bank lending operations provides a second example of how potential individual irrationalities might explain the organization of certain markets and the internal organization of firms within them -- and how apparent defects of these markets may actually be *solutions to* rather than *causes of* problems.

Indeed, although not citing Alchian, Rasmussen's observations on this point begin with Alchian's logic. Rasmussen writes:

> It is easy to articulate why there might be institutional constraints that reduce the impact of behavioral biases in the transactions that are the subject of bankruptcy scholarship. Firms ultimately have to compete in the market, and firms that continually make inefficient choices will not stay in business. The imperative of competition gives firms an incentive to develop internal structures which may be effective at reducing or even eliminating at least some of the types of biases in decision making discovered by behavioral economics. The firms that develop the better internal practices may well be the firms that have a better chance of surviving in the market.[20]

Given the nature of the bank lending business, Rasmussen observes that the most dangerous bias relevant to "to the long-term health of a financial institution would be excessive optimism."[21] This is because the risk of a loan is biased for the bank — the bank's upside of the loan is capped at the repayment amount, but the downside is the complete loss on the loan. The over-optimism bias is one that behavioral economics scholars claim to be extremely widespread in the population. Taken at face value, this would suggest that the over-optimism bias would also be widespread in banks, leading to a chronic epidemic of overoptimistic risk-taking by banks and a need for government intervention to curb this chronic problem.

The reality, of course, should be very different. Alchian's model suggests that even if over-optimism is widespread in the market, those banks that survive will be those that are the most prudent and the least over-optimistic of all banks. Thus, the problem of over-optimism and excessive risk-taking by banks should be a much smaller problem than behavioral economics

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come from?), and fails to demonstrate (or even to argue) that inflows and outflows of entrepreneurs of various qualities will converge on a high-efficiency equilibrium in each competitive industry."). *See also* Jonathan Klick & Gregory Mitchell, *Government Regulation of Irrationality: Moral and Cognitive Hazards*, 90 MINN. L. REV. 1620 (2006) ("In particular, we argue that there will often be long-run costs of paternalistic regulations that offset short-run gains because of the negative learning and motivational effects of paternalistic regulations.").

[20] Robert K. Rasmussen, *Behavioral Economics, the Economic Analysis of Bankruptcy Law and the Pricing of Credit*, 51 VAND. L. REV. 1679, 1688-89 (1998).

[21] *Id.* at 1693.

might suggest if we assume that the operation of banks is consistent with the cognitive deficiencies of the public at large and subject to Alchian's evolutionary dynamic.

First, the over-optimism bias is not universal in the population, suggesting that not everyone will be overoptimistic (indeed, the National Institute of Mental Health estimates that approximately 6.7 percent of the population suffers from depression, the antithesis of over-optimism [22]). Second, even among those who are overoptimistic, not everyone is overoptimistic to the same degree — some are relatively less overoptimistic than others. Thus, it is more likely that the frequency and degree of optimism bias can be best described by a *distribution* of optimism bias in the population rather than a single homogeneous point.

This heterogeneity in the frequency and degree of cognitive biases suggests that the banking industry would tend to select those least prone to suffering from the over-optimism bias. Thus, those individuals in the population who are less prone to the over-optimism bias will hold a competitive advantage over those who are more prone to those biases. As a result, people who work in banks should be those with less of an over-optimism bias than the population at large, thereby making the tendency for over-optimism and excessive risk-taking less threatening than it might appear at first glance (perhaps there is a reason why bankers have traditionally been stereotyped as staid, conservative pessimists instead of exuberant optimists).[23] By contrast, some fields (such as entrepreneurship) might be expected to attract those of above-average levels of optimism.[24] Rasmussen observes that banks will not want to hire the "overly pessimistic" either, as they would be unwilling to make even safe loans at reasonable rates. But it does nevertheless suggest that less-overly optimistic people will be hired by successful banks.[25]

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[22] NATIONAL INSTITUTE OF MENTAL HEALTH, THE NUMBERS COUNT: MENTAL DISORDERS IN AMERICA (last accessed Nov. 3, 2013), http://www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america/index.shtml.

[23] Of course, changing the evolutionary dynamics would likely change the composition of the individuals and firms that survive. For example, if the financial system evolves such that bankers are permitted to retain any gains that they earn (including unusually outsized gains) while being able to externalize any large losses that the suffer (say through bailouts of massively bad investments), then this will likely produce a population of bankers who are highly risk-seeking and willing to exploit the moral hazard implicit in these non-symmetrical payoff structures.

[24] *See* James M. Buchanan, *Resource Allocation and Entrepreneurship*, SWEDISH J. OF POL. SCIENCE 285, 288 (1980).

[25] This same "selection effect" – heterogeneous members of a pool self-selecting to take advantage of their particular competitive advantage – arises in a multitude of situations. *See, e.g.*, Geoffrey A. Manne, *The Hydraulic Theory of Disclosure Regulation and Other Costs of Disclosure*, 58 ALA. L. REV. 473 (2007). As in other areas, the assumption of homogeneity obscures important dynamics that can undermine policy prescriptions based on the assumption. *Id*. at 497-503. *See also* Harold Demsetz, *The Structure of Ownership and the Theory of the Firm*, 26 J. L. & ECON. 375, 382 (1983).

But Alchian's insight also speaks to the nature of the firms that will survive in the market. Those banks that are most effective in screening and promoting applicants based on their relative degree of resistance to the over-optimism bias would have a competitive advantage over those firms that are less effective in identifying these employees and therefore would be required to incur higher costs monitoring their employees or absorbing losses from overly-risky activity. This suggests that in a competitive market those banks that do the best job screening for and promoting the most prudent employees will survive, thus reinforcing the tendency of banking operations to be disproportionately run by individuals who are less prone to the over-optimism bias.

But Rasmussen suggests a still additional point. Successful banks will likely establish internal operating structures in order to avoid the distorting effects of persistent over-optimism bias at lowest cost. For example, the use of impersonal statistical devices such as credit scores may temper the over-optimism of any particular loan officer. Rasmussen also notes that once a loan officer starts working on a file, she might become unduly attached to that file and that borrower and thus less likely to take an unbiased look at whether the loan should be made or not. Again, an impersonal check such as a credit score, especially at the outset of the loan application process, can serve to temper that bias. In addition, if individuals suffer from a "confirmation bias," loan officers who initially determine that a loan should be granted may tend to overweight subsequent confirmatory evidence and underweight new contrary evidence as it arises. Thus there must be some sort of check to counteract those tendencies. Again, confirming the wisdom of a loan by reference to a credit score may provide a reality check to offset these biases.

Thus, Rasmussen suggests, the use of credit scores in the loan application process may not simply serve an information function about the borrower's creditworthiness; if there are various biases that might be triggered through the personalized process of a loan application, then the credit score may also provide a mechanism for tempering those biases. Collecting credit score information may seem redundant, wasteful and even harmful — after all, the loan officer can collect more information from the borrower than a standard-form credit score — nevertheless, they might serve an additional function not observed at first glance.

Rasmussen also argues that in situations where credit scores are not available, such as in commercial loans, other institutions might arise that serve a similar function, likewise tempering the effects of biases. Rasmussen notes:

> The risk of a loan office becoming too committed to a client's loan request exists in situations where credit scoring may not be feasible.... In [the commercial loan] context, some large banks have taken other actions that have the effect of reducing biases in the lending decision. In these banks, the

> loan officer who solicits the loan application has no responsibility for deciding whether or not the loan is made. Rather the loan application and the company's financial statements are sent to another office that decides whether or not to make the loan. The loan officer exercises no independent judgment on whether or not to make the loan. Rather, the officer is in the nature of a salesperson. Her compensation is based on how many products--loans, deposits, treasury management services--she is able to sell each year. The office that actually makes the lending decision is evaluated on the performance of the loans that it makes. This office, however, has little or no actual relationship with the customer, and is not responsible for servicing the loan or deciding when the loan is not in danger of not being repaid.[26]

At first glance, this arrangement appears peculiar and inefficient. Why two people to do the job that one person could do — both soliciting and approving the loan? Moreover, why have the final decision on the loan approval be made by someone with little specialized knowledge of the loan applicant, as the loan officer who originally worked with the loan applicant might have? In short, the bank's lending practices appear to be redundant. Rasmussen suggests, however, that one possible explanation for this seeming redundancy is to address certain biases and irrationalities that might arise in the loan application process. He writes:

> This decoupling of loan application solicitation from the loan approval process both reduces the risk of bias and provides appropriate economic incentives for those who solicit loans and those who approve them. The risk of cognitive bias is reduced by ensuring that the bank officer who makes the lending decision does not have a prior relationship with the client.... The loan officer who solicits the loans has the incentive to procure as many loan applications as possible, whereas the officer who approves the loan has the incentive to only approve loans that she expects to be profitable.[27]

Rasmussen argues that other similar checks-and-balances operate within banks that might also be justified as responses to concerns about irrational biases. For example, banks also divide responsibility later in the process between those who are responsible for originating and servicing the loan and those who are responsible for dealing with distressed loans. "Most banks transfer a loan from the operating division to a workout division once the loan becomes distressed."[28] One effect of this decision, Rasmussen notes, is to transfer to a new person the decision whether to permit a troubled loan to continue, whereas the original loan officer may have a bias in favor of continuation because of a tendency not to question his previous commitment to the loan. "Thus, one would expect that loan officers who made the original

[26] Rasmussen, *supra* note 20, at 1695-96.

[27] *Id.* at 1696.

[28] *Id.*

loan would be more likely to opt for continuation than an objective assessment of the facts would suggest. By transferring the loan to a new person, such bias may be counteracted."[29]

To be sure, there is a "just-so" element of Rasmussen's analysis that is characteristic of much behavioral law and economics literature.[30] But that problem is endemic to the literature itself. More relevant to the current discussion is the implication of Rasmussen's analysis that *even if* the behavioral law and economics speculative approach to identifying potential problems is taken, the implications that follow from this are different when viewed in an Alchianian light. While behavioral law and economics can be used to define a potentially serious problem potentially suitable for regulation — an apparent bias toward over-optimism and excessive risk-taking in banks — that inference may not follow because there are strong competitive pressures for banks to solve those problems on their own. Thus, regulation may be unnecessary or even counterproductive if regulators ignore the systems that successful banks have evolved to confront the problem.

Moreover, the insight that successful banks have likely developed internal mechanisms for dealing with any behavioral biases (as well as problems of imperfect information, agency costs, and other potential problems), suggest a corollary proposition: that we may be able to infer that other apparent anomalies within firms may actually exist in order to restrain the effect of these biases. Thus, institutions that appear to be inefficient or redundant could potentially serve some function within the successful firm of offsetting the influence of behavioral biases that might otherwise negatively impact the operation of the firm.

IV. Implications for Government Intervention

As noted above, an important implication of Alchian's insight is that government interventions aimed at "correcting" inefficiencies in firm behavior will necessarily (if inadvertently) be systematically aimed at firms and specific conduct that have evolved — whatever apparent inefficiencies remain — to *best* address inefficiencies. Given also the informational and psychological constraints of regulators themselves as well as the problems of intervening "well" in a complex environment, Alchian's article provides a powerful caution against intervention.

In Part IV.A we will apply the lessons of this article to the attempt to extend behavioral economics to antitrust analysis. In Part IV.B we will consider the model's implications for consumers and regulators more generally.

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[29] *Id.* at 1697.

[30] *See* Todd Zywicki, *The Behavioral Law and Economics of Fixed-Rate Mortgages: And Other Just-So Stories*, 21 SUP. CT. ECON. REV. __ (Forthcoming 2014).

A. Antitrust, Behavioral Economics, & Evolution

But what of behaviors that *harm* consumers — i.e., those that earn positive profits not through marginal efficiency improvements but rather through the systematic redistribution of rents (and imposing a concomitant deadweight efficiency loss), say through fraud or anticompetitive conduct?

Where alleged abuses are based on evidence of *intent* to abuse, Alchian's article makes clear that there is no necessary connection between intent and outcome. As Alchian notes:

> The pursuit of profits, and not some hypothetical undefinable perfect situation, is the relevant objective whose fulfillment is rewarded with survival. Unfortunately, even this proximate objective is too high. Neither perfect knowledge of the past nor complete awareness of the current state of the arts gives sufficient foresight to indicate profitable action. Even for this more restricted objective, the pervasive effects of uncertainty prevent the ascertainment of actions which are supposed to be optimal in achieving profits.[31]

In other words, while it is appropriate to view firms as if they are rational actors for analytical purposes, it is inappropriate to view them as intentional actors for purposes of assigning liability.

> [G]iven the very limitations on knowledge that some commentators point to, there is no reason to believe that even a pervasive ethos (whether in business school or in business itself) of market dominance enables those who pursue market dominance to actually attain it. It is hard to know how to be efficient; it is hard to know how to attain lasting dominance, as well.[32]

In most industries, over 50% of firms fail within four years; for some industries the rate is much higher.[33] Given the difficulties of merely avoiding insolvency, the fraction of firms that succeed in intentional efforts to exclude competitors must be substantially lower. Nevertheless, anticompetitive outcomes are *possible*. Antitrust intervention might even deter it or correct it. Alchian's insights do not undermine the *logic* of antitrust law; rather, they undermine this common basis for deciding to enforce it.

This is true not only for reasons discussed above (because even seemingly inefficient institutions may actually be solving some other, greater, unappreciated inefficiency), but also because intervention based on the appearance of a connection between firm conduct and undesirable outcomes systematically risks deterring the *best* of firm behavior, which may

[31] Alchian, *supra* note 3, at 218.

[32] Manne & Williamson, *supra* note 7, at 624.

[33] *Startup Business Failure Rate by Industry*, STATISTIC BRAIN (Jan. 1, 2014), available at http://www.statisticbrain.com/startup-failure-by-industry/.

nevertheless also be correlated with undesirable outcomes. In other words, just as the classic error cost problem of distinguishing beneficial aggressive competition from anticompetitive behavior in antitrust often counsels against antitrust enforcement, the problem of distinguishing static, beneficial residual inefficiencies from truly harmful ones counsels the same.

The FTC's closing of the recent Google antitrust case presents an illustration.[34] Although the FTC closed the case without taking action, the Commission's justification for its decision was, in part, based upon the flawed logic of the presumed connection between intentions and outcomes:

> To determine whether Google violated Section 5 with respect to these search bias allegations, the Commission considered whether Google manipulated its search algorithms and search results page **in order to impede** a competitive threat posed by vertical search engines. A key issue for the Commission was to determine whether Google changed its search results **primarily to exclude** actual or potential competitors and inhibit the competitive process, or on the other hand, to improve the quality of its search product and the overall user experience. The totality of the evidence indicates that, in the main, Google adopted the design changes that the Commission investigated **to improve the quality** of its search results, and that any negative impact on actual or potential competitors was incidental to that purpose.

Whether Google intended to exclude rivals or not is beside the point as a matter of both law and economics; what matters is whether Google actually foreclosed competition without pro-competitive justification – in other words, whether its conduct had actual anticompetitive effect.

Extending the problems of inferring outcome from intention, behavioral economics has gained (controversial) ground in the antitrust literature recently.[35] The argument is that monopolists can use the behavioral biases of consumers and other firms against them in an attempt to capture consumer surplus and earn supra-competitive profits. The problem is that behavioral economics is primarily backward-looking and poor at predicting future behavior. As noted by Devlin and Jacobs:

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[34] FEDERAL TRADE COMM'N, STATEMENT REGARDING GOOGLE'S SEARCH PRACTICES, IN THE MATTER OF GOOGLE INC. (Jan. 3, 2013), available at http://www.ftc.gov/os/2013/01/130103googlesearchstmtofcomm.pdf.

[35] *Cf.* Joshua D. Wright & Judd E. Stone II, *Misbehavioral Economics: The Case Against Behavioral Antitrust*, 33 CARDOZO L. REV. 1517 (2012); Joshua D. Wright & Douglas H. Ginsburg, *Behavioral Law and Economics: Its Origins, Fatal Flaws, and Implications for Liberty*, 106 NW. U. L. REV. 1033 (2012) *with* Max Huffman, *Commissioner Wright and Behavioral Antitrust*, THE ANTITRUST SOURCE (Apr. 2013), *available at* http://leconcurrentialiste.files.wordpress.com/2013/09/commissioner-wright-and-behavioral-antitrust.pdf.

> To explain observed departures from strict rationality, behavioral economists appeal to a wide variety of psychological biases of the kind introduced above. Doubtless, these biases possess considerable explanatory power in elucidating ex post why certain firms and consumers failed to behave "rationally." A distinct and far-more-formidable question, however, is whether the identified quirks that accompany human decision making can inform a coherent theory producing more-accurate market predictions than price and game theory. Behavioral economics has not yet proposed such a theory, and likely cannot ever propose one. The sheer number of cognitive biases upon which the discipline focuses confounds predictability, not least because their effect on behavior is multi-directional. Any policy prescription based on those biases will inevitably be incoherent and capricious.[36]

Alchian's theory, on the other hand, allows economists to have some predictive power, even in light of uncertainty. An evolutionary understanding of the marketplace should make regulators wary of assuming behavior is anticompetitive. What succeeded yesterday in making profits may not succeed tomorrow. The competitive landscape could change for a variety of reasons: competitors remove the advantage, technology may change, consumer preferences change, etc. Markets are not static; there's never an equilibrium. Activity intended to maximize profits won't always be profit-maximizing, or else all it would take is imitation and every firm would succeed.

Alchian's theory of evolutionary competition adds another interesting twist to these arguments. For instance, one could argue that monopolization could be a useful strategy to earn positive profits and survive economic natural selection. This might imply that Alchian's thesis could give support to heightened antitrust intervention.

On the other hand, evolutionary market pressures are surely the best defense against sustained monopoly power. In a world of uncertainty, it seems likely that most efforts to monopolize will fail; again, the connection between intent and outcomes is tenuous:

> Wisdom lags far behind the market. It is useful for many purposes to think of market behavior as random. Firms try dozens of practices. Most of them are flops, and the firms must try something else or disappear. Other practices offer something extra to consumers—they reduce costs or improve quality—and so they survive. In a competitive struggle the firms that use the best practices survive. Mistakes are buried.
>
> Why do particular practices work? The firms that selected the practices may or may not know what is special about them. They can describe what they do, but the why is more difficult. Only someone with a very detailed knowledge of

[36] Alan Devlin & Michael Jacobs, *The Empty Promise of Behavioral Antitrust* 14 (Working Paper 2013), *available at* http://ssrn.com/abstract=2332364. *See also* Joshua Wright, *Multidimensional Competition*, *in* COMPETITION AND PATENT LAW UNDER UNCERTAINTY (Geoffrey Manne & Joshua Wright eds., 2011).

> the market process, as well as the time and data needed for evaluation, would be able to answer that question. Sometimes no one can answer it.[37]

In the valuable service of supporting those few innovations (and the firms that implement them) that succeed, regulators should limit enforcement actions to those few cases where actual observed effects indicate a problem — not where evidence exists that some "ununderstandable"[38] practice was intended to have anticompetitive effect.[39] It is well-accepted that the striving for monopoly rents by business firms is an important inducement for them to expend resources to enter into new markets, innovate and compete. The mistaken punishment of competitive conduct is "especially costly, because [it] chill[s] the very conduct the antitrust laws are designed to protect."[40]

Alchian's article offers an additional warning to the commonly made point that the informational limits of regulators create a risk of Type I errors in enforcement.[41] As Alchian notes, in an adaptive, evolving environment, "decisions and criteria dictated by the economic system [are] more important than those made by the individuals in it."[42] Intervention to correct decisions made by individuals risks disrupting the system in unpredictable ways — not only deterring aggressive competition but impairing the rewards to imitation, trial and error, innovation and entrepreneurship generally (as well as economic actors' already tenuous ability to anticipate them).[43]

B. Consumer Protection and Behavioral Economics

A similar caution applies in the context of consumer protection regulation and the inference of market failure where none is present. Consider, for example, the theory of "fee shrouding,"[44] which has been invoked to purportedly explain pricing and other business decisions in markets

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[37] Frank Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 5 (1984).

[38] Ronald Coase, *Industrial Organization: A Proposal for Research*, *in* POLICY ISSUES AND RESEARCH OPPORTUNITIES IN INDUSTRIAL ORGANIZATION (Victor R. Fuchs ed., 1972) ("[I]f an economist finds something—a business practice of one sort or another—that he does not understand, he looks for a monopoly explanation. And as in this field we are very ignorant, the number of ununderstandable practices tends to be very large, and the reliance on a monopoly explanation, frequent.").

[39] *See* Manne & Williamson, *supra* note 7, at 646-51.

[40] Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 594 (1986)

[41] *See* Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 J. COMP. L. & ECON. 153 (2010); Easterbrook, *supra* note 37.

[42] Alchian, *supra* note 3, at 213.

[43] *See* Klick & Mitchell, *supra* note 19.

[44] *See* Xavier Gabaix & David Laibson, *Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets*, 121 QUARTERLY J. ECON. 505 (2006).

ranging from computers, to hotel rooms, to airline ticketing policy, to credit cards.[45] Based on a theoretical paper by Gabaix and Laibson, the theory argues that there can be "hidden" or "shrouded" fees in contracts that consumers do not fully incorporate into their decision-making, focusing instead on only the "up-front" cost and ignoring subsequent add-on fees. Such overcharges will not be competed away because, the argument goes, consumers do not make consumption choices based on these "shrouded" fees. From a policy perspective, then, the argument concludes that consumer protection enforcement is necessary to protect consumers from businesses that prey upon their biases.

Gabaix and Laibson provide the example of a Hilton Hotel, which rather than quoting an up-front "all-in" price of, say, $100, instead quotes an up-front price of $80 and then supplements it with a variety of later-imposed fees for parking, Internet access, etc. Gabaix and Laibson argue that this multi-part pricing scheme is best explained as "shrouded" pricing that reduces the transparency of price information and will not be competed out of the market because, by definition, consumers are not aware of the trick and so do not choose among their competing sellers based on that choice.

In theory, Gabaix and Laibson's dire outcome is consistent with Alchian's model of competitive evolution. For if it is the case that consumers can repeatedly be fooled by price trickery, only the most ruthless and unscrupulous firms would survive.[46] But as a result, their model also implies that shrouded fee pricing would be uniform in competitive markets, as only those firms that sunk to the lowest level would survive and all other firms would be forced to adopt their practices.

But, in fact, the truth is far different. For example, while it is true that many hotels charge add-on fees for additional services (such as parking and Internet access), others do not. Although we have not conducted a systematic empirical study, our experience is that high-end luxury hotels, such as the Ritz-Carlton, are much more likely to charge add-on fees for additional services (such as Internet access) and exorbitant prices for food and min-bars, than are "budget" hotels such as Super 8 or Motel 6, which frequently and prominently offer free parking, free Internet service, and free breakfast. Indeed, not only is this result inconsistent with the implication of the hypothesis that all firms would adopt shrouded pricing policies, it is also

[45] *See, e.g.*, Haiyan Shui & Lawrence Ausubel, *Consumer Time Inconsistency: Evidence from an Experiment in the Credit Card Market*, Dissertation at University of Maryland (2004); Stefano DellaVigna & Ulrike Malmendier, *Contract Design and Self-Control: Theory and Evidence*, 119 QUARTERLY J. ECON. 353 (2004); Sharon M. Oster & Fiona M. Scott Morton, *Behavioral Decision-Making: An Application to the Setting of Magazine Subscription Prices*, Yale University (2004).

[46] Indeed, this is the idea that implicitly underlies their model as illustrated by their example that firms that price transparently would be competed out of the market by those that exploit consumer biases.

inconsistent with the implication that those firms with the lowest up-front fees would have the most back-end add-on fees.

Similarly, while major airlines have added a variety of fees to their pricing, such as baggage fees and high reservation change fees, Southwest Airlines—a budget airline—has eschewed doing so, retaining a simplified up-front price policy, free baggage, and even free peanuts. Indeed, contrary to the predictions of Gabaix and Laibson's model, Southwest has made its price transparency the cornerstone of its marketing program, with its colorful and entertaining "bags fly free" commercials. Again, the perseverance of a variety of price strategies within a particular market is flatly inconsistent with the predictions of the shrouded fees model—and the persistence of up-front pricing by a discount carrier is even more so.

This suggests a recurring alternative hypothesis to the unsubstantiated "shrouded fees" theory: price discrimination. Why does the Ritz-Carlton have more hidden fees than Super 8? Probably because the Ritz-Carlton caters more to business travelers, who in general have more inelastic demand curves when choosing where to stay. In addition, business travelers—who are frequently reimbursed for their expenses—are more likely to have inelastic demand for amenities such as parking, Internet service, and high-priced restaurant meals. Tourists, by contrast, are likely to be highly price-elastic and more alert to the cost of hidden fees and other add-ons.

Thus, ironically and utterly contradicting the shrouded fees model, it is the ordinary consumer who is *least* likely to pay hidden fees (such as Internet access) and sophisticated business people who are most likely to do so. In short, the "market" has divided itself into two distinct markets—for those who are sophisticated about prices (ironically ordinary consumers) and those who are unsophisticated (powerful CEOs and high-powered business executives).

But what about Gabaix and Laibson's concern that "transparent" pricing firms eventually will be competed out of the market by unscrupulous firms? Southwest estimates that as a result of refusing to impose new fees on customers, it has foregone approximately $500 million per year in new revenues.[47] But as a story in *Forbes* magazine summarized:

> In the end it was a genius move and typical Southwest: unconventional, brash, unabashed. By refusing to nickel-and dime customers, Southwest added two percentage points of market share, increased passenger loads by 10% and brought in $2 billion in incremental annual revenue—at a cost of $500 million

[47] See Todd J. Zywicki, The Institutions of Consumer Protection: Competitive Markets, Common Law, and Regulation (presentation given Spring 2012, on file with the authors).

> or so in forgone bag fees. "We added 24% more revenue per mile without buying another plane," says [Southwest's CEO].[48]

In short, while the "shrouded fees" theory is interesting, it seeming fails on its own terms, as a simple economic theory of price discrimination between tourist and business travelers provides a much more robust explanation of observed market behavior.[49] Once again, the assumption that seemingly problematic intentions are *actually* problematic based on behavioral assumptions is undermined by Alchianian insights that counsel restraint.

More generally, Fred McChesney notes that many of the claims of behavioral law and economics have not been sufficiently well-defined and empirically tested to reject alternative hypotheses. For example, McChesney observes that many of the biases supposedly identified by behavioral law and economics scholars can actually be explained more persuasively by traditional economic models, such as bounded rationality.[50]

Similarly, Todd Zywicki observes that many key elements of the behavioral law and economics hypothesis are rejected by available evidence. Thus, for example, while behavioral economics predicts that consumers will systematically err in their propensity to revolve debt on their credit cards (by systematically underestimating their likelihood of revolving), in fact while consumers do make errors, their errors are unbiased: they are just as likely to overestimate as underestimate their likelihood of revolving, rebutting the hypothesis of behavioral law and economics.[51] Meanwhile, not only do most payday loan customers accurately estimate how long it will take them to pay off their loans, the distribution of errors by those who make mistakes is also systematically unbiased, as consumers are just as likely to overestimate as underestimate how long it will take them to pay off their loan.[52]

C. Unevolved Species: Government Regulators and Behavioral Economics

As discussed above, Alchian's model suggests that antitrust and consumer protection intervention against successful firms is misguided because the ones that exist by definition are doing presumptively as well as the market allows. The only reason to intervene is if we think

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[48] David Whelan, *All Grown Up*, FORBES (Jun. 29, 2011), available at http://www.forbes.com/forbes/2011/0718/features-southwest-airlines-gary-kelly-midway-grown-up.html.

[49] One suspects that similar patterns would be observed across other markets. For example, casual empiricism suggests that discount menswear stores such as Men's Wearhouse charge lower fees for services such as alterations than higher-priced clothiers such as Brooks Brothers.

[50] McChesney, *supra* note 6.

[51] *See* Zywicki, *The Behavioral Law and Economics of Fixed-Rate Mortgages*, *supra* note 30.

[52] *See* Ronald Mann, *Assessing the Optimism of Payday Loan Borrowers*, 21 S. CT. ECON. REV.__ (forthcoming 2014).

individuals in government could possibly know better. Of course, even in the best of circumstances, they likely can't.[53]

In fact, if biases exist (and surely they do), and if firms that survive do so in part because they mitigate the negative effects of bias better than their failed brethren (as must also often be true), then there is a perverse irony in government intervention challenging the business practices of successful firms.

Alchian focuses us on the dynamic of an evolutionary model comprising two evolving elements: variation and selection. Behavioral biases (irrationality) produce considerable variation in conduct. For Alchian, if variation is random and if the selection process is sharp enough, then it will seem that the variation itself was purposeful (i.e., rational—intended to produce the successful result it produced). If selection pressure is weak, then fundamental human irrationality, ignorance and uncertainty will dominate.

What matters, then, for our confidence in regulatory policy, which is also the product of imperfect humans acting in an uncertain environment, is what and how strong the selection pressures are on government actors—that is, to what extent "bad" variations get weeded out in political and regulatory processes.

In other words, the key question in assessing the propriety of government intervention to correct perceived market problems is whether bureaucracies face selection pressures to abandon failed policies and adopt good ones relative to markets. For several reasons the answer to this is most likely, "no."

Justifying government intervention on the basis of biases identified by behavioral economics highlights a further problem: there is no reason to expect the regulators themselves to be bias-free. In fact, scholars have identified many biases which seem to affect regulators: Bounded rationality, action bias, availability and hindsight biases, motivated reasoning, affect heuristics, overconfidence, focusing illusions, confirmation bias, and groupthink.[54]

Moreover, government actors are subject to rent-seeking and the well-known concentrated benefits/diffuse costs problems that affirmatively reward bad policies.[55] Second, there is a selection effect in government, as well, that favors individuals susceptible to these pressures—

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[53] Ludwig von Mises, *Economic Calculation in the Socialist Commonwealth*, *in* COLLECTIVIST ECONOMIC PLANNING (F. A. Hayek ed., 1935).

[54] *See, e.g.*, Slavisa Tasic, *Are Regulators Rational?*, 17 JOURNAL DES ECONOMISTES ET DES ETUDES HUMAINES 1, 3-9 (2011), *available at* http://www.yumpu.com/en/document/view/8335988/are-regulators-rational.

[55] *See, e.g.*, MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS (Revised edition, 1971)

with a comparative advantage in maximizing their own return in such an environment. Third there is a severe attenuation between regulatory results and a regulator's compensation that limits the feedback—and ability to profit—from "good" conduct. Moreover, what feedback there is is perverse, often rewarding excessive risk aversion or empire building. As Steve Choi and Adam Pritchard said of the SEC:

> If both investors and regulators operate under the influence of behavioral biases, . . . regulation may well do more harm than good. . . . Investors that perform poorly will either learn or exit the market. Private institutions face similar market pressures to serve the interests of their client-investors or perish. . . . The market may not function perfectly, but regulators under the present regime face no such pressures. To the extent regulators themselves make the decision whether to intervene into markets, the risk of ill-conceived intervention is even more acute.[56]

While Alchian's paper focused primarily on firms, there are reasons to believe even consumers overcome biases in ways behavioral economists often miss. Behavioral economists often point to lack of willpower on behalf of consumers as the reason they cannot remain on diets or quit drinking alcohol. In effect, "internalities" occur when individuals in their present self impose costs on their future self. This, in turn, if often used to justify essentially Pigouvian regulations such as bans, regulations, and taxes on foods and drinks thought to contribute to such problems. But this story fails to recognize the basic Coasean point: if transaction costs are low, individuals will likely find a beneficial bargain between their present and future selves.[57]

Thus, for instance:

> The short-run self could reduce its Twinkie consumption, eat a Twinkie Lite instead, or have it with a Diet Coke instead of a Coke. Alternatively, the long-run self could adopt measures designed to reduce the Twinkie's future effects. It could, for instance, commit to exercising more often (or more vigorously) by joining a gym or making agreements with workout partners. Or the long-run self might resign itself to taking heart medications. Which route is most efficient depends on the subjective cost of the different options. If the future-oriented self were the least cost avoider, a Twinkie tax would not improve matters. It would induce the present self to eat fewer Twinkies, even though the future self could have avoided or reduced the harm at a lower cost.[58]

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[56] Stephen J. Choi & A. C. Pritchard, *Behavioral Economics and the SEC*, 56 STAN. L. REV. 1 (2003). *See also* William E. Kovacic & James C. Cooper, *Behavioral Economics and Its Meaning for Antitrust Agency Decision Making*, 8 J.L. ECON. & POL'Y 779 (2012).

[57] *See* Glen Whitman, *Against the New Paternalism: Internalities and the Economics of Self-Control*, CATO POL. ANALYSIS No. 563 (Feb. 22, 2006), *available at* http://www.cato.org/sites/cato.org/files/pubs/pdf/pa563.pdf.

[58] *Id.* at 6.

The ability of a consumer to enact such a bargain with himself is limited only by transaction costs. Generally, one will know one's self better than an outside party does. Even though contract enforcement is likely unavailable, weak-willed persons can find external enforcement if needed, such as by joining Alcoholics Anonymous or Weight Watchers, or by advertising resolutions to family and friends who can keep them accountable. Like real estate agents and credit scores, these devices serve to mitigate biases. Pre-commitment strategies can also be an effective way to the raise costs of deviation from an agreement between present and future selves, like by banning soda from the house and making it necessary to go buy and consume it elsewhere.

Consumers have an incentive to constrain biases in their private lives. Whether it is simply to save money or enjoy a healthier lifestyle, both the costs and benefits will accrue directly to individuals as they work to find an equilibrium between their present and future selves. Whether these practices are consciously adapted by consumers in attempts to overcome biases or the market environment adopts these practices by rewarding those who better constrain biases, one can predict that most consumers will generally act more as if they are more rational than given credit for by behavioral economists.

Scholars have warned regulators about behavioral biases and encouraged them to overcome them (through conscious adaptation).[59] But, as noted, the fact that regulators suffer from the same biases as everyone else will not be an obstacle to implementation of rational policies if regulators and politicians are subject to selection pressures that cause them to act as if they are rational.

As we have argued, Alchian's evolutionary model implies that firms that remain in the marketplace over time will likely have found way to constrain biases. Unfortunately, regulators are not subject to the same evolutionary pressures. And to the extent that they do, those pressures appear to be highly attenuated compared to the gale of market pressures that Alchian describes for competitive markets. Without the mechanism of profit and loss, government regulators have no feedback mechanism to constrain biases. The consequence is that political actors do not face selection pressures likely to eliminate poor variations in the regulatory policy 'market.'

Voters, the residual claimants of government regulation, often lack the information and ability to successfully choose the regulators in charge.[60] Polls consistently show Americans lack the basic information about current events, policy, and government to effectively hold

[59] *See* Cass Sunstein, *Cognition and Cost Benefit Analysis,* 29 J. LEGAL STUD. 1059 (2000).

[60] *See e.g.*, ILYA SOMIN, DEMOCRACY AND POLITICAL IGNORANCE: WHY SMALLER GOVERNMENT IS SMARTER (2013); BRYAN CAPLAN, THE MYTH OF THE RATIONAL VOTER: WHY DEMOCRACIES CHOOSE BAD POLICIES (2008).

government officials accountable. In fact, some scholars claim that such ignorance is rational since it is costly to search out information compared to the marginal benefit of casting an informed vote. Further, cognitive biases appear to prevent even the most motivated and informed citizens from successfully interpreting available information. Scholars call this rational irrationality, as it is often psychologically costly for people to overcome beliefs that make them feel good even if the evidence is against it. Thus, there is little reason to expect government "firms" to develop ways to constrain biases as private firms have in pursuit of positive profits.[61]

Moreover, far from ameliorating irrational biases, regulatory processes appear to exacerbate some of these irrationalities or to add additional ones. For example, political scientists have identified multiple pathologies to which bureaucracies are susceptible when unconstrained, such as inefficient levels of risk-aversion, tunnel vision emphasis on their agency's mission at the expense of other social goals, and irrationality in the estimation of the marginal costs and benefits of their agency's agenda.[62] Thus, for example, although the FDA is frequently criticized for its inefficient risk-aversion in permitting new products to come to market, there appears to be little incentive for the agency to correct this tendency in light of the institutional context in which it finds itself.

There is little reason to expect government to evolve ways to constrain its biases as Alchian describes private firms doing in pursuit of positive profits; the inefficient decision making we see in government is not likely masking a hidden, efficient organizational response to counteract costly biases. Thus irrational regulators in this situation are unlikely to outperform the market—to consistently identify truly inefficient behavior and organization faced with (and measured against) the market's selection mechanism that presents them with *apparent* inefficiency that is really the market's own response to the irrationality of market actors.

Conclusion

Contrary to the bold claims made by some behavioral economists, models which assume rationality and self-interest on behalf of market participants are still useful for predicting future behavior. Alchian's model, expounded in *Uncertainty, Evolution, and Economic Theory*, helps to explain why: evolutionary pressures of the marketplace select those most fit for survival under given conditions, which often means those best at constraining behavioral biases. It also implies that seemingly inefficient market and firm structures may exist to ameliorate these biases and thus confer unappreciated efficiency. With this in mind, regulators should be wary of making the leap from diagnosing biases in a laboratory to intervening in the marketplace.

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[61] Tasic, *supra* note 54, at 10.

[62] *See* MAXWELL L. STEARNS & TODD J. ZYWICKI, PUBLIC CHOICE CONCEPTS AND APPLICATIONS IN LAW (2009) (chapter 6).