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# The Impact of Behavioral Economics on Consumer and Competition Policies

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Interesting questions are being asked about the policy implications of relaxing commonly held assumptions about how people make decisions. If consumers are not always rationally maximizing some kind of utility function, can we still claim that their decisions are always in their own best interest? And should this be a policy concern at all? We commonly rely on the competitive process to produce the market outcomes that are the most favorable to consumers. In a model of rational behavior, firms in a competitive environment compete mostly on the merits and the market outcome is efficient and welfare-maximizing. Does this result continue to hold when the rationality assumption about consumer behavior is relaxed?

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Behavioral Economics is gradually becoming mainstream microeconomics and can no longer be considered the fringe research field that was largely disregarded by neo-classical economists and game theorists until a decade ago. But, notwithstanding its increasing success, behavioral economics is struggling to establish itself as a well-developed tool to analyze markets and provide policy conclusions. This is partly because behavioral economics has done a better job at questioning well-established assumptions underlying traditional models than at providing an alternative framework with a similar analytical predictive power. But one fact, which is often forgotten, is true: a lot of our analytical conclusions about efficiency and welfare rely on the interpretation we give to consumer decisions. These interpretations are directly derived from the “rationality” assumptions at the foundation of the neo-classical supply and demand model. Assumptions of rational and profit-maximizing behavior seem to have been an overall satisfactory approach. But Behavioral Economics is currently investigating the limits to the generalization of this economic rationality framework. It is gathering evidence on its empirical relevance and testing the explanatory power of alternative behavioral hypotheses. More interestingly, applications of behavioral economics to the field of industrial organization examine the consequence of different behavioral hypotheses on the predicted efficiency and welfare outcome of markets.

A new framework has not yet emerged. But interesting questions are being asked about the policy implications of relaxing commonly held assumptions about how people make decisions. If consumers are not always rationally maximizing some kind of utility function, can we still claim that their decisions are always in their own best interest? And should this be a policy concern at all? We commonly rely on the competitive process to produce the market outcomes that are the most favorable to consumers. In a model of rational behavior, firms in a competitive environment compete mostly on the merits and the market outcome is efficient and welfare-maximizing. Does this result continue to hold when the rationality assumption about consumer behavior is relaxed?

Let us start this discussion with a brief definition of the rational individual. The decision-making process underlying both neoclassical economics and game theoretic models relies on the following assumption: people have pre-existing, well-ordered, and complete preferences. This means they can assign a given value to everything under any contingency. For example, a rational agent currently knows how much she would be willing to pay to rent a bike during a stay in Bangkok next summer. She is in a position to sign a contract today that she will not regret next summer. Factors such as the average price of bikes that she

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will observe in Bangkok when she gets there are external to her utility and are not supposed to have an effect on her enjoyment of the contract. Individuals can, therefore, rank at any time all possible choices according to inherent tastes. There is also some stability and continuity in those tastes so that a small change in the characteristics of the product will not dramatically change the value that the individual assigns to it.

Given the value assigned to each available product and their initial resources, individuals maximize the level of welfare they can achieve in economic exchanges. These assumptions about the nature and structure of preferences and the utility maximizing decision rule form the basis of the “rational behavior” of the “homo economicus.” The rational behavior assumption is what allows us to interpret the price paid by an individual as a direct manifestation of his or her

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preferences and welfare. The “rational” behavioral assumption has been so widely accepted that any departure from it was, for a long time, considered to be out of bounds for mainstream economics.

Behavioral economics has produced empirical evidence indicating that individuals may not behave like “homo economicus” but rather use their brains in richer and more complex—if not always better—ways. This is partly due to the fact that individuals suffer from cognitive limitations, systematic misperceptions, and emotional reactions to their environment that affect their decision making.<sup>1</sup> One proposition is that people use rules of thumb or they adopt second-best behaviors when faced with either complex decisions or perceived high search costs. Proponents of contingent preferences also argue that preferences and willingness to pay are significantly affected by personal expectations, which are not a fixed concept but rather a function of recent experience and a person’s particular environment at a point in time.<sup>2</sup> Willingness to pay changes not only with inherent taste, but also with the state a person is in and the information carried by the environment.

Another strand of literature examines how the choices people make are influenced by how the choice is presented to them. The role of default choices and the effect of framing choices have been extensively documented.<sup>3</sup> Choice overload has been found in some instances to paralyze and upset people although the literature in this field produces contradicting results depending on the situation.<sup>4</sup> Too much or too complex information will also drive people to take shortcuts or fixate on a particular dimension of the choice while ignoring the others, thereby making suboptimal decisions. People can also drastically overreact to seemingly anodyne changes in the product description.<sup>5</sup> A strand of literature has illustrated the time inconsistency of people’s preferences and the tendency to make errors when forecasting future preferences and choices.<sup>6</sup> In particular, people

have been found to underestimate future needs in favor of present ones and to overestimate how much future preferences will look like current ones, i.e. to underestimate how their needs and circumstances will change.

What is the practical consequence of accepting these new behavioral features in decision making? Information about consumer choices is used to construct the market demand function. In competition policy, this demand function is used to establish the market demand elasticity, an important component for market definition and the analysis of firms' pricing power. Demand functions are also commonly used to calculate consumer welfare under particular market outcomes.

One can argue that once we empirically observe a demand, the underlying mechanism by which this demand is formed is of secondary importance. Observed choices will give us the information we need for market and competition policy analysis. But several issues arise. First, if choices are the results of imperfect or second-best decision-making rules, then the willingness to pay may not be perfectly correlated with the welfare ultimately obtained by the consumer. Second, if preferences and willingness to pay are not exogenous or consistent or stable, then firms may be able to manipulate them. Neoclassical economics already recognizes the possibility that a firm invests in advertisement to increase the demand of its product. In these models, advertisement increases the utility derived from consuming the product and therefore the willingness to pay.<sup>7</sup> Behavioral economics introduces the theoretical possibility that firms invest in "manipulating" consumer choice in order to increase willingness to pay without necessarily increasing the utility derived from consuming the product.

BEHAVIORAL ECONOMICS INTRODUCES THE THEORETICAL POSSIBILITY THAT FIRMS INVEST IN "MANIPULATING" CONSUMER CHOICE IN ORDER TO INCREASE WILLINGNESS TO PAY WITHOUT NECESSARILY INCREASING THE UTILITY DERIVED FROM CONSUMING THE PRODUCT.

Several papers have studied pricing strategies that might be able to produce higher prices and potentially higher profits for firms without increasing consumer utility. The most obvious one is complex pricing or price obfuscation. This is a strategy whereby firms adopt multidimensional tariffs or multiply the described characteristics of a particular product for the sole purpose of decreasing comparability of offers. Excessive personalization of the offer can have a similar effect. For this to be a strategy that exploits behavioral biases, the "complication" of the product or of the terms of the offer must offer no utility to the consumer but just reduce the consumer's willingness or ability to compare alternatives. Ellison and Ellison (2009) provide empirical evidence of offer complication over the internet for the sole purpose of decreasing comparability on internet price search engines.<sup>8</sup> Pricing strategies in the online sale of airline tickets are another example of price obfuscation through the slicing of the transaction into sequential acquisitions of options and sequential payments of fees. The idea that firms introduce obfuscation to avoid the

potential price pressure of competition is formalized in Spiegler (2006).<sup>9</sup> This and other papers predict endogenous contract complexity and search costs that increase with competition.

Although the literature has argued that obfuscation strategies have negative effects on consumer welfare and efficiency, there are fewer conclusions on the effect of such strategies on firm profits. Literature on search costs already argued that search costs and differences in search abilities led to prices above the competitive solution.<sup>10</sup> In behavioral models, firms voluntarily increase search costs to protect themselves from competition. Equilibrium with higher profits depends on the lack of incentives for firms to deviate from this obfuscation strategy. Such disincentives may exist either if consumer heterogeneity causes firms providing transparent information to attract less profitable customers, or if the market is susceptible to significant shrinkage if most consumers are made aware of the full cost of the good or service when they make their purchase decision.<sup>11</sup> Evidence of price-increasing obfuscation strategies in competitive environments has been presented in the case of retail financial services.<sup>12</sup>

Other pricing strategies play into the inability of consumers to accurately forecast the actual usage of the good or service they buy. Tariffs that offer an entry fee that includes a specified usage and charge high marginal cost for any additional usage can be understood as screening for under- and over-confident customers.<sup>13</sup> These three-part tariff plans are optimal for those customers who can accurately forecast their use. But consumers who under- or over-estimate their usage pay higher unit prices than foreseen at the time of transaction.<sup>14</sup> Three-part

tariffs contracts are profit maximizing for industries with low marginal costs such as telecommunications or financial services. Most literature on such tariffs does not show supra-competitive profits in competitive settings. But the consumer welfare of over- and under-confident users is nonetheless decreased.<sup>15</sup>

BEHAVIORAL ECONOMICS INTRODUCES THE POSSIBILITY OF PRICE DISCRIMINATION BETWEEN CONSUMERS BASED ON THEIR COGNITIVE ABILITIES, THEIR INFORMATION PROCESSING ABILITIES, AND THEIR ABILITY TO FORECAST FUTURE NEEDS.

It is known that firms implement price discrimination that caters to customers with different tastes. Behavioral economics introduces the possibility of price discrimination between consumers

based on their cognitive abilities, their information processing abilities, and their ability to forecast future needs. Most of these models result in inefficient outcomes for a segment of consumers and, in some cases, there are cross subsidies from one segment of consumers to another based on factors over which the subsidizing users have limited awareness and control. Competitive markets do not resolve the inefficiencies present for these consumers because, as in the complex pricing case, there may be disincentives to do so for any single firm. For example, if some users underestimate the likelihood of running into credit, a credit card company may not have an incentive to compete on the average inter-

est rate. If it did, it would attract the less solvent and riskier customers who are the most sensitive to interest rates while, at the same time, decreasing its profits on those customers who are insensitive to the interest rate and run a balance which they did not foresee. Ausubel (1991) uses this argument to explain interest rate stickiness and evidence of supra-competitive profits in the competitive credit card industry.<sup>16</sup>

In addition to pricing strategies, firms may also adopt marketing strategies that exploit the different ways in which consumers deviate from “rational” decision making. Firms spend money on positioning, search engine management, sales effort, and advertisement content to influence consumers’ perceptions of the relevant alternatives for a given choice.<sup>17</sup> Firms may also encourage consumers to focus on irrelevant aspects of the product when making a decision. Examples include advertising investment funds based on past performance and the low marketing importance given to providing management fee information. By doing so, firms exploit a natural tendency of people to extrapolate from the past even when the past carries no information about the future.<sup>18</sup> Firms might be able to use persuasive strategies that lead to decisions that are not welfare-maximizing for consumers.

What have we learned? Behavioral models suggest that consumers might make inefficient decisions in competitive markets and might be overcharged with no resolution by the competitive process. Firms can adopt pricing and marketing strategies that allow them to soften price competition even in competitive environments and in ways that reduce consumer welfare. In other words, competitive market outcomes might not, in every single case, be efficient and welfare-maximizing.

IN OTHER WORDS, COMPETITIVE MARKET OUTCOMES MIGHT NOT, IN EVERY SINGLE CASE, BE EFFICIENT AND WELFARE-MAXIMIZING.

The role of consumer policy in neoclassical economics is to fight fraud and resolve information issues. Behavioral considerations have, nevertheless, already played a role in regulatory initiatives such as the imposition of a cooling off period in certain purchases. The idea that firms might be adopting strategies that create inefficiencies for consumers raises the question of whether such commercial behavior falls under the remit of consumer policy. The increasing ability and incentives to price discriminate against individuals with reduced cognitive or predictive abilities, issues of self control, or high levels of distress also calls for a judgment call on how much we want to care about issues of fairness. There is certainly a case to be made for consumer protection intervention in those markets, such as financial markets, where the consumer risk in the case of a suboptimal decision can be very high. But any remedial intervention will have to be targeted at the particular problem to be solved and must not generate additional inefficiencies. Market remedies should be carefully designed and should aim at improving the conditions for optimal decision-making by consumers. Restricting particular commercial practices might be efficiency- and wel-

fare-enhancing but only if it can be shown that the sole purpose of the practice is to distort the consumer decision.

Competition policy currently relies on market entry and lack of competitor foreclosure to elicit efficient outcomes from markets. Behavioral economics suggests that, in some particular cases, this might be overoptimistic. But competition policy is currently quite powerless in the face of collective “exploitative”

COMPETITION POLICY CURRENTLY RELIES ON MARKET ENTRY AND LACK OF COMPETITOR FORECLOSURE TO ELICIT EFFICIENT OUTCOMES FROM MARKETS. BEHAVIORAL ECONOMICS SUGGESTS THAT, IN SOME PARTICULAR CASES, THIS MIGHT BE OVEROPTIMISTIC.

strategies adopted by firms in a competitive market. Running successful excessive pricing cases in the face of competition or collective dominance cases is notoriously difficult since it is hard to explain within the traditional framework why competition will not eliminate traders that do not serve consumers well.

The current models cannot be sufficiently generalized yet to provide an operational framework for policy. In most markets, preserving a competitive environment will, in fact, be sufficient for efficiency and welfare maximization. But behavioral models show that one has to be careful of inferring too much from the competitive environment in those markets where behavioral biases and commercial strategies that exploit these biases are likely to play a big role in the transaction decision. In such cases one must be cautious regarding conclusions on the market efficiency and consumer welfare outcome.

Behavioral economics is a field that will develop further in the next years. Without a doubt our understanding of how markets work will increase. Meanwhile, rapid technological change is providing both consumers and firms with increased market access and massive amounts of information and data. This will generate radical changes in commercial practices in the years to come. Behavioral economics will play an important role in explaining what is likely to become an increasingly complex and sophisticated commercial environment. ▼

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- 2 Koszegi & Rabin, *A Model of Reference Dependent Preferences*, 121 Q.J. ECON. 1133-1165 (2006).
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- 4 Iyengar & Lepper, *When choice is demotivating: Can one desire too much of a good thing?*, 79(6) J. PERSONALITY & SOC. PSYCHOL. 995-1006 (2000); Fasolo, Hertwig, Huber & Ludwig, *Size, entropy, and density: What is the difference that makes the difference between small and large real-world assortments?*, 26(3) PSYCHOL. & MARKETING 254 - 279 (2009).



- 5 Bertrand, Karlan, Mullainathan, Shafir, & Zinman, *What's Psychology Worth? A Field Experiment in the Consumer Credit Market*, Yale University Economic Growth Center Discussion Paper No. 918 (2005), available at SSRN: <http://ssrn.com/abstract=770389>.
- 6 Loewenstein, O'Donoghue, & Rabin, *Projection Bias in Predicting Future Utility*, 118 Q. J. ECON 1209-1248 (2003); Della Vigna & Malmendier, *Paying not to go to the gym*, 96(3) AMER. ECON. REV. 694-719 (2005).
- 7 See, for example, Becker & Murphy, *A Simple Theory of Advertisement as a Good or Bad*, 108 Q.J. ECON. 942-64 (1993).
- 8 Glenn Ellison & Sara Fisher Ellison, *Search, Obfuscation, and Price Elasticities on the Internet*, 77(2) ECONOMETRICA, 427-452,03 (2009).
- 9 R. Spiegler, *Competition over agents with boundedly rational expectations*, 1 THEORETICAL ECON. 207-231 (2006).
- 10 Salop & Stiglitz, *Bargain and Rip-offs: A Model of Monopolistically Competitive Price Dispersion*, 44 REV. ECON. STUDIES 493-510 (1977).
- 11 See Gabaix & Laibson, *Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets*, 121(2) Q. J. ECON. 505-540 (2006); Also Ellison, *A Model of Add-on Pricing*, 120(2) Q. J. ECON. 585-637 (2005).
- 12 Carlin, *Strategic Price Complexity in Retail Financial Markets*, 91(3) J. FIN. ECON. 278-287 (2009).
- 13 Grubb, *Selling to Overconfident Consumers*, Stanford Institute for Economic Policy Research Discussion Paper No. 0618 (2006).
- 14 In this literature, over-optimism, projection bias, and issues of self-control can be sources of systematic bias in some people's forecasts of usage.
- 15 See, for example, Della Vigna & Malmendier, *supra* note 6 at 694-719. This paper also argues that one cannot make inferences on the consumer consumption preferences and consumer welfare from observed contracts.
- 16 Ausubel, *The Failure of Competition in the Credit Card Market*, 81(1) AMER. ECON. REV. 50-81(1991).
- 17 Eliaz & Spiegler, *Consideration Sets and Competitive Marketing* (2009) available at [http://www.econ.brown.edu/fac/Kfir\\_Eliaz/considersept2009.pdf](http://www.econ.brown.edu/fac/Kfir_Eliaz/considersept2009.pdf).
- 18 Choi, Laibson, & Madrian, *Why Does the Law of One Price Fail? An Experiment on Index Mutual Funds*, Yale ICF Working Paper N. 08-14 (2008). Available at SSRN: <http://ssrn.com/abstract=1125023>.