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# What Does Behavioral Economics Mean for Competition Policy?

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This paper looks at whether behavioral economics fundamentally changes our understanding of competition policy. We argue that behavioral economics is an important incremental advance in our understanding, just as informational economics was before it. But this does not mean that all previous economic models of competition and markets are now irrelevant. For the most part, they still provide valid and valuable insights. Importantly, behavioral economics does not question our belief in competition policy as a tool for making markets work well for consumers.

Nevertheless, the existence of behavioral biases does have a number of implications for the way in which markets work. Behavioral biases on the consumer side emphasize the importance of the demand side in making markets work well, and the important synergies between consumer policy and competition policy. Behavioral biases may also have implications for anticompetitive behavior. In spite of this, behavioral economics does not necessarily imply more intervention. Markets can often solve their own problems and even where they can't, there are dangers inherent in over-paternalism limiting consumer choice. Behavioral economics also emphasizes the difficulties that authorities can have in trying to correct for such biases.

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## I. Introduction & Summary

Over the last ten years behavioral economics has become one of the rare subjects in economics to move beyond academia and into wider society. Interest is now so widespread that the sight of behavioral economics books on the best seller list is no longer incongruous. But what exactly is behavioral economics and what is it likely to mean for competition policy?

In very general terms, behavioral economics is an area of economics that combines insights from psychology with traditional economic models to more accurately reflect decision-making by consumers and other economic agents.<sup>1</sup>

Traditional models of markets have assumed economic agents that can be classified as “Homo Economicus,” rather than Homo Sapiens. Homo Economicus has infinite capacity to take in and process information; is neutral to how things are presented; can anticipate and take the future into account; cares only about self-maximizing; and treats gains the same as losses.

Literature on behavioral economics, however, provides evidence of the various ways in which real economic actors differ from Homo Economicus. Homo Sapiens has limits to taking in information; is taken in by how things are presented; tends to be poor at anticipating the future; cares about other people and fairness; and cares more about losses than gains. In short, Homo Sapiens exhibits systematic biases in the way he views both the world and markets.<sup>2</sup>

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These are known as “behavioral biases.” While there are a large number of behavioral biases, the main ones involve a lack of processing power,<sup>3</sup> the importance of framing,<sup>4</sup> the existence of time inconsistency,<sup>5</sup> and aversion to losses.<sup>6</sup>

In fairness, economists never really asserted that market participants were as ultra-rational as Homo Economicus. Rather, the assumption was used as a helpful shortcut. It enabled the development of sophisticated economic models of markets, which in turn appeared to reflect reality fairly well. The argument was that market participants did not actually have to be ultra-rational in order for markets to work as if they were.

The recent growth in interest in behavioral economics has, however, forced economists to question this thesis. Specifically, are there ways in which behavioral biases might lead to systematic biases in the models of markets and competition on which we have been relying? Do they have implications for the effective analysis of, and intervention in, markets by competition authorities? Or is behavioral economics just the latest economics fad, which does not really change anything, and will soon be buried at the bottom of the economics toolbox?

This paper provides some thoughts on these issues. Like many economic answers to complicated questions, our conclusions are nuanced. While behavioral economics does raise questions regarding current thinking, and may alter how competition authorities carry out some of their analysis or design their interventions, behavioral economics does not represent the fundamental shift some might fear.

First, behavioral economics does not mean that all previous economic models are negated. Much of the existing literature continues to provide us with important and useful insights. Arguably, behavioral biases simply take a place alongside

SECOND, BEHAVIORAL ECONOMICS DOES NOT CHANGE THE VIEW THAT COMPETITION POLICY IS A CRUCIAL TOOL FOR MAKING MARKETS WORK WELL FOR CONSUMERS. IT DOES, HOWEVER, EMPHASIZE THAT COMPETITION POLICY IS ONLY ONE SIDE OF THE STORY.

other well-known market failures, such as market power, asymmetric information, and externalities, the implications of which are now well understood and incorporated into economic thinking.

Second, behavioral economics does not change the view that competition policy is a crucial tool for making markets work well for consumers. It does, however, emphasize that competition policy is only one side of the story. To make markets work well we not only need competition policy, we also need engaged consumers, able to assess, access, and act on information. This highlights the crucial role that consumer policy, and other forms of demand-side intervention, plays in driving effective markets.

Third, behavioral economics does not alter the view that the market may find its own solutions to any problems. Reputation, learning effects, intermediaries, the media, and even firms themselves, can all help to solve market problems arising from consumer biases. Behavioral economics instead strengthens something we already knew: that we can not blindly assume the market will solve everything.

Finally, even to the extent that there are persistent problems in markets, behavioral economics also emphasizes the difficulties that competition (or consumer) authorities can face in trying to correct for such biases. For example, behavioral economics tells us that simply providing more information may not be a good solution when consumers have problems assessing such information. As such, it is far from clear that a greater emphasis on behavioral economics implies more intervention. It may well imply less.

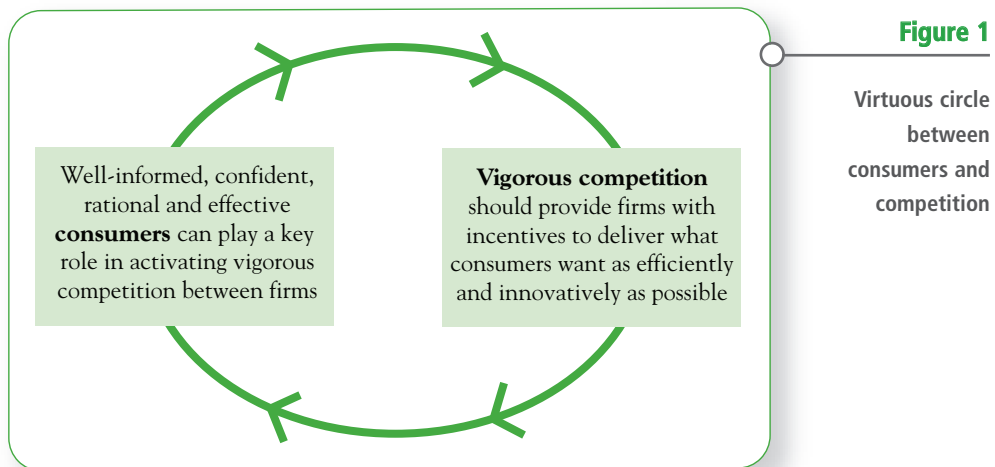
The second section of this paper examines the implications of behavioral economics for our understanding of competition in markets, with a particular focus on the factors that drive, or inhibit, competition. It looks first at behavioral biases on the demand side, and how these can potentially soften competition, especially when we take account of firms' incentives to exploit such demand-side biases.

The third section of the paper then looks at the implications of these consumer biases for antitrust enforcement, before considering the potential for behavioral biases on the supply side, and how these too could alter our thinking on antitrust questions. This section also examines briefly the role that consumer policy, and other demand-side interventions, can have in driving competition in markets, working alongside antitrust enforcement.

The fourth section of this paper examines the implications of behavioral economics for interventions in markets. It looks at the potential for the market to solve its own problems and at the unintended consequences of interventions. It concludes with some thoughts on the practical implications of behavioral economics for the empirical analysis involved in designing interventions.

## II. Behavioral Economics and Competition in Markets

Markets work well when there are efficient interactions on both the demand (consumer) side and the supply (firm) side. On the demand side, confident consumers activate competition by making well-informed and well-reasoned decisions which reward those firms which best satisfy their needs. On the supply side, vigorous competition provides firms with incentives to deliver what consumers want as efficiently and innovatively as possible. When both sides function well, a virtuous circle is created between consumers and competition. This is illustrated in figure one below.



While active and rational consumers and vigorous competition work together in tandem to deliver consumer benefits, the failure of either side of the circle can harm the effectiveness of markets. Competition policy has traditionally been

focused on protecting the supply side—if competition between firms is diminished then consumers do not get what they want. However, the demand side is also crucial—if consumers are less engaged in the buying process, then firms may find it harder to win market share by providing what consumers most want. This will, in turn, reduce the incentive of firms to work towards that end, competition will be weakened, and less consumer benefit will be delivered by the market.

Behavioral biases clearly have a key role to play here. On the demand side, they can impact on the extent to which consumers play their active, effective, and rational part in this virtuous circle. On the supply side, they can impact on whether firms act on their apparent incentives in the profit-maximizing way that most economic models assume.

### A. BEHAVIORAL BIASES: THE FOURTH MARKET FAILURE?

It is not newsworthy that there can be problems in markets. Economists have long been aware of three broad circumstances in which the market may fail, the implications of which are now well understood:

- a) Market power: Gives firms a reduced incentive to compete for customers, and a greater incentive to exploit them (or, alternatively, to have an easy monopolist life).
- b) Asymmetries in information between consumers and firms: Can hinder consumers' ability to effectively drive competition or firms' ability to target consumers effectively.
- c) Externalities not captured within consumers' preferences: Can mean that a market produces too much or too little of a good or service from a societal point of view.

ARGUABLY, BEHAVIORAL BIASES  
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Arguably, behavioral biases can be viewed simply as a fourth type of market failure, albeit one for which the economic literature is rather more nascent and the implications less well established.

### B. CONSUMER BIASES AND THE ROLE OF CONSUMERS IN DRIVING COMPETITION

In order for consumers to drive competition in the way described above, they ideally need to:

- a) **access** information about the various offers available in the market;
- b) **assess** these offers in a well-reasoned way; and
- c) **act** on this information and analysis by purchasing the good or service that offers the best value to the customer.

When any of these three elements of the consumer decision-making process breaks down, consumers' ability to drive effective competition can be harmed.

The knowledge that consumers play a key role in driving competition is not new or indeed specific to behavioral economics. Moreover, the role that various consumer barriers can play in hindering the competitive process has been examined for several decades. For example, the key role of search costs in obstructing consumers' ability to access information, and the impact this has on competition, was shown nearly forty years ago by Diamond in his famous paradox in which one finds many firms charging monopoly prices.<sup>7</sup> Likewise the role of switching costs in creating a barrier for consumers to act, and the potential this has to soften competition, has been well studied by academics and understood by competition authorities.<sup>8</sup>

Behavioral economics, however, provides several important insights that go beyond this existing literature. First, it highlights that consumers may find it hard to assess information and compare across products. This step in the consumer decision-making process had been largely overlooked in the standard literature. Second, it allows us to better understand the underlying causes of search costs (which affect access) and switching (which limits ability to act). This is important because understanding the underlying causes of these search and switching costs can be key in designing effective remedies to address them. Third, the prevalence of consumer biases may mean that existing problems within the consumer decision-making process are more entrenched than we had believed, and more prevalent.

THE PREVALENCE OF CONSUMER BIASES MAY MEAN THAT EXISTING PROBLEMS WITHIN THE CONSUMER DECISION-MAKING PROCESS ARE MORE ENTRENCHED THAT WE HAD BELIEVED, AND MORE PREVALENT.

The following examples illustrate how behavioral biases can affect each of the three steps in the consumer decision-making process.

- a) **Accessing information.** Behavioral biases may exacerbate existing problems for consumers in accessing information. For example consumers tend to look at relative costs rather than absolute search costs. This means a consumer may be willing to travel an hour across town for a half price offer on a £20 pen, but would not travel an hour across town for £10 off of a £500 television even though the amount saved (£10) would be the same. This may imply that search costs are more prevalent on large ticket items than small ticket items. Consumers may also fail to anticipate add-ons and search only on headline price, or consumers may forget previous experiences.<sup>9</sup>
- b) **Assessing offers.** Behavioral biases may create or exacerbate consumers' difficulties in assessing the best deal. For example, consumers' ability to assess which product would suit them best may be impaired by incorrectly anticipating risk, underestimating or overestimating

future use, or overweighting the present.<sup>10</sup> Furthermore, when faced with more information than can be easily analyzed, they may only look at a sub-set of information and use rules of thumb to assess the information.<sup>11</sup> Finally they may be distracted by the way in which information is framed and presented.<sup>12</sup>

- c) **Acting on information and analysis.** Behavioral biases may give rise to, or exacerbate, consumers' difficulty in acting to get the best deals. For example, if consumers have overconfidence in their ability to act in the future, this can create inertia and a tendency to fail to act today.<sup>13</sup>

Thus, while barriers to “access, assess, and act” may exist without behavioral biases, behavioral biases provide both a greater understanding of why and when those barriers exist, how prevalent they are, and how severe a barrier they can present to active and reasoned consumer choice.<sup>14</sup>

### C. FIRMS' REACTIONS TO CONSUMER BIASES

Such consumer biases are not simply relevant to understanding how consumers act in a market; they also have a bearing on firms' behavior. Where such biases exist, firms can act to exacerbate and exploit them, at every stage in the decision-making process. Indeed, forthcoming OFT research illustrates the way in which a number of common practices by firms can have significant impacts on the extent of the biases exhibited by consumers.<sup>15</sup>

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This is not a new finding. Arguably, marketing experts have long known it. Moreover, the standard economic literature already indicates that firms may have an incentive to increase search or switching costs in order to increase the barriers.<sup>16</sup> Introducing intuitions from behavioral economics, however, suggests that such behavior may be more prevalent and longer-lasting than initially thought:

- a) **Accessing information.** Firms can make it more difficult for consumers to perform optimal search. For example, behavioral economics shows that consumers do not tend to look at pricing terms that are not provided upfront. Firms may exploit this by putting more of the price into add-on services; restructuring their tariffs,<sup>17</sup> adding clauses within the terms and conditions;<sup>18</sup> or making price searching harder (for example, by drip pricing—only revealing the true price after the customer has spent some time choosing).<sup>19</sup>
- b) **Assessing offers.** Firms can make it more difficult for consumers to assess the best deal. Because behavioral economics indicates that consumers have difficulties comparing across differently structured offers, firms may exploit this by obfuscating their prices or increasing choice



or complexity. They may also use price promotions and framing to distract and distort decision-making.<sup>20</sup>

- c) **Acting on information and analysis.** Firms can make it more difficult for consumers to act to get the best deals. Behavioral economics indicates that consumers may display more inertia than traditionally suggested, perhaps due to overconfidence in their capacity to improve things at a later time. Firms, knowing that consumers display this inertia, can increase switching costs (for example, making consumers use registered post to cancel). They can also use defaults and automatic enrollments, or use time limited offers to inhibit switching.

Of course, in many circumstances, firms' ability to exploit such biases in this way will be limited, for example, by the potential for new firms to enter and provide products which make a virtue out of not exploiting biases.<sup>21</sup> Such market solutions to problems arising from behavioral biases are discussed in the last section. However, some of the recent behavioral literature suggests that there may be equilibria in which all firms exploit consumer biases and none of them has a unilateral incentive to correct this situation.<sup>22</sup>

THERE MAY BE EQUILIBRIA IN WHICH ALL FIRMS EXPLOIT CONSUMER BIASES AND NONE OF THEM HAS A UNILATERAL INCENTIVE TO CORRECT THIS SITUATION.

The nature, prevalence, and self-awareness of consumer biases can also differ across markets, and this too can have an impact on how firms react. For example, in some markets there will be a proportion of consumers that know about their biases and correct for them (termed “sophisticated” in the literature) and a proportion who do not (termed “myopes”). In such markets, firms may have an incentive to exploit the myopes, but competition will force them to compete away some of the resulting rents on low upfront prices in order to entice them in the first place. This is competition from which the sophisticated gain. Effectively, the sophisticated get a better price than they would absent the exploitation of the myopes.

In such a situation, any firm that tried to stop exploiting the myopes would have to raise its initial price, which would, in turn, cause both types of customer to switch away. The myopes switch because they no longer see a cheap upfront price, and the sophisticated switch because they are no longer subsidized by myopes. The result is that under certain conditions no firm can profit from moving to a non-exploitative outcome unilaterally.

#### D. THE IMPLICATIONS OF CONSUMER BIASES FOR COMPETITION

So behavioral economics has established the existence of consumer biases, and added to our understanding of how these can be exacerbated by firms. What, though, are the implications of this for competition, and is there a difference between the short term or “static” and the longer term or “dynamic” effects?

As is clear from the virtuous circle discussed above, static competition will be affected by the failure of consumers to access, assess, and act on information. Passive consumers do not provide the same type of constraints on firms as active consumers do. In traditional economic terms, this reduction in price sensitivity is similar to a general reduction in both the product's absolute elasticity, and its substitutability (or cross-elasticity) with other products.<sup>13</sup> Such reductions in substitutability can translate into a lessening of the intensity of competition—a softening of competition—and, as a result, higher prices for consumers.<sup>24</sup> Again, while this potential for harm was discussed within the traditional switching and search costs literature, behavioral economics has brought insights as to its underlying causes, its prevalence, and its magnitude.

For example, in the context of add-on pricing or aftermarkets, the static harm from softening competition manifests itself in two ways. First, there is a direct loss in consumer welfare from overall higher prices—although some of this harm may be competed away in the primary market depending on the level of competition. This harm will tend to be greater when there are more myopic consumers who are unaware of their biases, and less competition. Second, there is a loss in allocative efficiency that exists even if there is perfect competition. This results from over-consumption of the subsidized primary product and under-consumption of the expensive add-on by the sophisticates.<sup>25</sup>

Dynamic competition may also be affected by consumer biases within the market. One of the key benefits of competition is the role it has in ensuring that those firms that provide the best value continue in the market while those that provide poor value exit. Over time this evolutionary role of competition implies that the average efficiency of the market increases for all consumers. This role is diminished when consumers no longer reward those firms that provide them with what they really want but, instead, reward those that best play on their biases. For example, if consumers perform only limited search, then firms might compete on, and be rewarded for, being the first to attract consumers, rather than

offering the best deal. This potentially implies overuse of resources on advertising or paying for the prominence of their product on an internet search site rather than providing a lower-priced or higher-quality product.

THIS ROLE IS DIMINISHED WHEN CONSUMERS NO LONGER REWARD THOSE FIRMS THAT PROVIDE THEM WITH WHAT THEY REALLY WANT BUT, INSTEAD, REWARD THOSE THAT BEST PLAY ON THEIR BIASES.

The other key dynamic role that competition plays is as an efficient framework to promote product and process innovation. In general, competition among innovators increases the intensity of innovation and development.<sup>26</sup> When consumers have behavioral biases this may reduce the ability of firms with innovative products to win customers. This, in turn, may reduce firms' incentives to invest in the research or innovation needed to generate new products. Such reductions in the dynamic role of competition may be far greater than any static effects on competition given their long-term nature.<sup>27</sup>

Finally, to the extent that these biases facilitate firms' ability to foreclose markets—as will be discussed in the next section—behavioral biases may also retard competition and dynamic efficiency.

The types of static and dynamic concerns outlined above have played a role in several recent OFT market studies, including Sale and Rent Back<sup>28</sup> and the Personal Current Accounts (“PCA”) market study. For example, within the PCA market study, a combination of consumer biases and firm behavior led the OFT to conclude that the market was not working efficiently.

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“... A significant number of consumers do not know how much they will effectively pay in bank fees or how individual elements in the charging structure will be implemented, either before or after they are incurred [...] this means banks have less incentive to provide better offers on insufficient funds and interests. Without better offers from banks, however, consumers have little incentive to switch. [...] The OFT believes that the market may be stuck in an equilibrium that does not work well for many consumers.”<sup>29</sup>

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In summary, behavioral economics has provided practitioners with greater insights into how consumer biases may create new distortions or accentuate existing distortions in competition.

### III. Behavioral Biases and Antitrust Enforcement

What, then, are the implications of behavioral biases for the realm of antitrust enforcement, which covers mergers, abuse of dominance, and anticompetitive agreements?

The first point to highlight is that standard antitrust policy is not necessarily well designed to address the demand-side effect of consumer biases described above—that of distorting or weakening the virtuous circle of competition. However, antitrust enforcement is just one tool in the toolbox available for solving market problems. Other tools include consumer policy, market studies, investigations (in the UK at least), and even the potential for authorities to advocate legislation in a particular market.

This choice requires consumer and competition policy to work closely together; picking the best tool to fix the problem and not simply thinking about which has traditionally been used. In this regard, the UK is in a relatively unique situation in having a third type of instrument that sits between pure antitrust instruments and consumer instruments—market studies and investigations.<sup>30</sup> These

are designed to examine features of the market that distort competition, arguably precisely the type of concerns that consumer behavioral biases may create.

Nevertheless, even within standard antitrust enforcement, there are a number of ways in which behavioral biases can potentially have an impact. This is an underdeveloped area, and thinking is at an early stage, but in this section we put forward a few initial ideas that may merit further development.

## A. THE IMPACT OF CONSUMER BIASES ON ANTITRUST ENFORCEMENT

Our focus initially is on the consumer biases discussed above. We examine how these could potentially play into bundling and tying cases, aftermarket cases, and collusion cases.

### 1. Consumer Biases and Bundling and Tying

Tying and bundling practices, carried out by a dominant firm, can be anticompetitive if they significantly raise the cost to competitors of competing, and thereby foreclose the market. A key piece of evidence in such a foreclosure story is whether tying creates a significant switching cost for customers in switching to rival products. Behavioral biases can clearly be relevant here. In general, one might assume that where customers face only nominal costs to switch products,

HOWEVER, BEHAVIORAL ECONOMICS SUGGESTS THAT EVEN SMALL SWITCHING COSTS CAN HAVE SIGNIFICANT EFFECTS ON CONSUMER BEHAVIOR IN THE PRESENCE OF CONSUMER INERTIA, ENDOWMENT EFFECTS, AND DEFAULT BIAS.

then tying or bundling is unlikely to be able to foreclose. However, behavioral economics suggests that even small switching costs can have significant effects on consumer behavior in the presence of consumer inertia, endowment effects, and default bias.<sup>31</sup> This can, in turn, make foreclosure more likely to occur through tying and bundling.

Arguably, such a bias played a role in the Media Player element of the EU Microsoft case.<sup>32</sup> Microsoft set its own product, Media Player, as the default program to play all media when consumers bought a PC. Setting this as a default when viewed through a rational lens may be unimportant since consumers were easily able to download other media players for free, and at only a minimal cost to them in terms of time. However, when viewed through a behavioral lens, it becomes clear that consumers are significantly less likely to switch from the preloaded Microsoft settings than might otherwise be expected. In this setting, a strategy to foreclose could move from being unlikely to being much more plausible.

It is worth adding, however, that behavioral biases can also help to provide an efficiency rationale for tying and bundling. If consumers find it difficult to make complex choices, they may value being provided with a fully bundled product

where these choices are effectively made for them. Such efficiency rationales need to be weighed against any potential for anticompetitive effect.

## 2. Consumer Biases and Aftermarkets

Much of the past economic literature and commentary in aftermarkets has assumed that consumers are rational and that they can access, assess, and act on the necessary information. Under these assumptions, any attempt to monopolize the aftermarket will simply result in consumers acting to switch primary products; hence, such conduct is unprofitable. This is one of the main tenets underpinning the Chicago School's view in this area—if monopolizing the aftermarket through refusal to supply is unprofitable, then firms must do it for efficiency reasons.

However, recent developments in the economic literature, including the behavioral literature, have questioned the Chicago critique in several different ways. First, the fact that firms can make greater profits from more confused consumers may provide firms with an incentive to exacerbate the impact of consumer biases.<sup>33</sup> Second, the level of profits competed away in the secondary market depends on the degree of competition in the primary market, with only perfect competition leading to all the profits being competed away in the primary market.<sup>34</sup> Finally, as discussed in the previous section, it cannot be assumed that firms have a unilateral incentive to educate consumers to their biases.<sup>34</sup>

The central thrust of this literature is that, contrary to the Chicago critique, there may effectively be more than “one monopoly profit.” Hence, one cannot assume that a firm has no incentive to foreclose the aftermarket. The observation that the “one monopoly profit” theory only holds under certain assumptions is not new. There is, by now, a well-established “post-Chicago” literature examining circumstances in which the Chicago critique does not hold. Behavioral economics simply highlights that consumer rationality is another key assumption underlying this critique.

THE CENTRAL THRUST OF THIS LITERATURE IS THAT, CONTRARY TO THE CHICAGO CRITIQUE, THERE MAY EFFECTIVELY BE MORE THAN “ONE MONOPOLY PROFIT.”

## 3. Consumer Biases and Collusion

Finally, the behavioral literature points to the possibility that firms can potentially increase their joint profits by agreeing to exploit consumer biases and thereby soften competition; for example, by restricting or obfuscating the information provided to customers. There would seem to be little reason why such an agreement should not be viewed as anticompetitive, even if there is no agreement relating specifically to prices or volumes.

A nice example of such a concern is the U.S. Federal Trade Commission's (“FTC”) case on bulletproof vests.<sup>36</sup> In this case, the association of bulletproof

vest manufacturers adopted a rule that prevented comparative advertising. Under this rule, no member could represent that another member's vests had failed certification testing, even if the advertising claim were true. The FTC determined that the rule had the impact of restraining quality competition, obviously a key competitive parameter in bulletproof vests!

## B. SUPPLY-SIDE BIASES AND ANTITRUST<sup>37</sup>

The focus of this paper has so far been on consumer (or demand-side) biases. Firms on the supply side have been assumed to act rationally, and in a profit-maximizing manner. But is this assumption always correct?

There are several reasons to expect that firms will, in fact, tend to be more rational than consumers when making decisions. First, firms can benefit from economies of scale in decision-making. Consider firms as purchasers. Whereas a consumer might buy a product just once, for a relatively small amount of money, firms' purchasing decisions will tend to involve repeated spend of large amounts of money. As such, firms will have a stronger incentive to make the investment required to get this purchasing decision right.

Second, the market might be expected to discipline firms that make mistakes or depart significantly from profit-maximization behavior. Competition can drive poor performers (bad decision makers) out of the business and reward the better ones. In contrast, consumers who make mistakes will not (typically) be driven out of the market in quite the same way.

Third, firms will tend to hire in analytical expertise, and will have departments who specialize in making business decisions and are evaluated on their efficiency in doing so. Workers and managers that are inefficient, or do not learn from their mistakes, may be less likely to climb the promotion ladder to positions of control.

THERE IS A GROWING EMPIRICAL LITERATURE THAT PROVIDES EVIDENCE TO SUPPORT THE NOTION OF NON-RATIONAL BEHAVIOR BY FIRMS.

Nevertheless, despite these arguments, there is a growing empirical literature that provides evidence to support the notion of non-rational behavior by firms.<sup>38</sup> Explanations relate in particular to the facts that: firms operate in complex environments and need to solve complex problems, and thus tend to resort to short-cuts and rules of thumb just as consumers do; they typically function on the basis of group decision-making, which can itself lead to biases; and the nature of recruitment, promotion, and entrepreneurialism implies that the people who run firms will often have specific characteristics such as over-confidence and willingness to take risks.

Because the literature is relatively nascent there are no strong conclusions to draw. Indeed, in a recent paper commissioned by the OFT and also published within this journal,<sup>39</sup> Armstrong & Huck suggest that the implications of firms'

behavioral biases on competitive outcomes are ambiguous and depend on circumstances. In some situations, supply-side biases might help to promote competitive outcomes, while in others they might hinder.

## 1. Supply-Side Biases and Collusion

An example of these mixed findings can be seen in the impact of firms' behavioral biases on the likelihood of collusion. Firms colluding to keep prices high typically face a short-term incentive to cheat on the agreement (since they will gain market share) but a long-term incentive to sustain a high price. When firms have behavioral biases, the ease of sustaining collusion could increase or decrease. For example:

- a) **Collusion could be harder to sustain** if one assumes that firms have a desire to maximize relative profits (rather than absolute profits). Under this assumption the benefit to deviating from the collusive price increases, since firms will not only gain from the increased profit of cheating (lowering price to steal business from a rival) as they do in the rational models, but will also generate utility from reducing a rival's profit (relative to their own).
- b) However, **collusion could also be easier to sustain**. For example, there is evidence that personal friendship and trust can play an important role in sustaining collusion, with cartel members often investing a lot of time and effort in individual relationships.<sup>40</sup>

This latter point has several interesting implications. First, one may view private information exchanges more cautiously given that the communication often associated with such exchanges may facilitate the trust.<sup>41</sup> Second, this need to create a relationship implies that although cartels may be more costly to set up and, hence, less common than might be thought, they may also be more stable to shocks due to the relationships and last longer.

## 2. Supply-Side Biases and Mergers

Even if firms were found not to act in a fully profit-maximizing manner, it is far from obvious that this would significantly affect much of merger analysis, since a merger might typically be expected to change the incentives of the merging parties in a similar way, irrespective of what those firms are maximizing.

However, there may still be some subtle implications of supply-side biases for mergers which merit further consideration. For example, there is some evidence in the behavioral literature that firms give greater weight to fixed- and sunk- costs in their pricing decisions than might be expected by standard economic theory.<sup>42</sup> Could this have any

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implications for the treatment of fixed/sunk cost efficiencies arising from mergers? Such efficiencies are not typically accepted as relevant in merger cases, since they are not expected to feed through to consumers as lower prices. But does this reasoning hold true in a situation where there is reason to believe that firms use pricing rules that do reflect fixed- and sunk- costs?

### 3. Supply-Side Biases and Entry

Supply-side biases may also have implications for the way entry is assessed in antitrust cases. There is significant empirical evidence to show that firms are often overconfident when it comes to predicting their success on a market.<sup>43</sup> A very large percentage of firms that enter into a new market fail within a short period of time. Does this mean that it is right to be more cautious than we would otherwise be when considering the possibility of entry as a countervailing force for the creation or abuse of market power?

In summary, the discussion in this section has provided some thoughts on how behavioral biases could potentially affect antitrust cases. It is intended to provide a flavor of early thinking on this issue, rather than a complete assessment or a statement of how competition authorities will be altering their analysis going forward. In the end, whether the existence of behavioral biases is likely to impact on any given antitrust case will need to be analyzed on a case-by-case basis.

## IV. Implications for Interventions in Markets

Some elements of the preceding discussion might seem to point to behavioral biases creating more need for intervention in markets. However, this would be too strong a policy conclusion to draw. While behavioral biases can exacerbate problems in markets, it is important not to throw out all we have learned with

WHILE BEHAVIORAL BIASES CAN EXACERBATE PROBLEMS IN MARKETS, IT IS IMPORTANT NOT TO THROW OUT ALL WE HAVE LEARNED WITH REGARD TO WHEN ONE SHOULD INTERVENE.

regard to when one should intervene. In most circumstances, the pricing, marketing, and advertising practices of firms can still be viewed as benign with no need for action, even where they undoubtedly seek to exploit behavioral biases.

More generally, markets can be self-correcting and interventions can potentially do more harm than good. It will, therefore, typically be important to make a careful assessment of interventions before they are put in place.

### A. PROBLEMS IN MARKETS CAN BE SELF-CORRECTING

It will be unnecessary to intervene, and could indeed have negative unintended consequences, where the problems in the market would otherwise be self-cor-



recting. This will be true, for example, where there are market solutions, where consumers may learn, or where firms can self-regulate.

## 1. Market Solutions

In many instances, the problems arising from behavioral biases will be solved by the actions of market participants themselves. For example, in response to consumer self-control problems in terms of attendance at the gym, we observe some gyms providing options for consumers to pay for blocks of visits.

This is part of a broader class of situations where firms may not have an incentive to exploit consumers' biases. For example, in the models of add-on prices discussed in the previous section, the proportion of myopes in the population can play a key role in determining whether firms reveal their add-on prices or exploit these consumer biases by keeping these prices hidden.<sup>44</sup> As the proportion of myopes declines, there are too few of them for the firms to base their price structure on; hence, firms choose to reveal the add-on price. An interesting implication from this result is that the market may require a catalyst in order to change from an equilibrium in which all firms want to exploit consumer biases to an equilibrium in which all firms want to help consumers by revealing their prices.

AN INTERESTING IMPLICATION FROM THIS RESULT IS THAT THE MARKET MAY REQUIRE A CATALYST IN ORDER TO CHANGE FROM AN EQUILIBRIUM IN WHICH ALL FIRMS WANT TO EXPLOIT CONSUMER BIASES TO AN EQUILIBRIUM IN WHICH ALL FIRMS WANT TO HELP CONSUMERS BY REVEALING THEIR PRICES.

The media can play this catalyst role by making consumers aware of their biases, or at least aware of the tariff structures that exploit their biases. This may result in a virtuous circle in which the more consumers understand about the situation, the less firms try to exploit their biases. For example, in personal banking in the UK, the OFT recently lost an appeal relating to its proposed intervention on unauthorized overdraft fees.<sup>45</sup> Nevertheless, the substantial publicity surrounding this case may well have been a factor in a variety of changes in the market. Some smaller banks are positioning themselves explicitly as offering a simple deal, while some larger ones are promoting new tariffs without overdraft charges or have restructured their tariffs to include daily charges rather than usage charges. While it is too early to tell whether these will be successful in driving better outcomes for consumers, these examples illustrate how information can work alongside competition to provide incentives for firms to overcome market failings.

Advisors and intermediaries can also play a catalyst role in improving consumer decision-making where there are consumer biases. Consumer organizations, such as Which? in the UK, advise consumers of potential pitfalls (i.e. hidden terms or prices) and make recommendations to help reduce complexity.

Arguably, the reach and effectiveness of intermediaries have been greatly extended with the advent of the internet and the ability to compare prices and terms across different sellers.

Of course, intermediaries do not necessarily provide a panacea. Indeed, there may be cases when incentives of the intermediaries are not always aligned with consumers. For example, when firms pay intermediaries for their advice to consumers then their impartiality may well be questioned. However, there are many cases where market solutions, of one sort or another, will work well. And where they do, this will typically be preferable to intervention, given that the market is typically better placed to devise solutions than a competition authority.

## 2. The Power of Learning

Even if firms have an incentive to mislead consumers this may not be possible (for long) if consumers learn from their mistakes. For example, a deodorant advert in which consumers are told the deodorant will make them irresistible to women is, no doubt, attempting to exploit a bias. Despite this, it is unlikely to raise significant consumer or competition concerns primarily because consumers can easily guess it is simply not true and even if they don't, they will soon learn! A consumer who learns can switch supplier or purchase more intelligently.<sup>46</sup> This will mean those firms who have a reputation for dealing fairly with consumers will thrive, while those that treat them poorly will gain a poor reputation and exit.

There are clearly limits to learning. In markets where consumers make frequent purchases (or can benefit from the learning of others via word of mouth) learning may be expected. By contrast, when purchases are infrequent or large value (for example, when entering into a sale and rent back arrangement), then learning may not provide the constraint required. Similarly, there will be circumstances where biases are hardwired (for example, limits to computation can not

be overcome) or where consumers cannot learn from others (for example, word of mouth may be limited for products, such as sale and rent back, which consumers are embarrassed to admit they have bought).

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However an interesting result of the behavioral literature is that it may not be essential for consumers to “correct” their behavioral biases.<sup>47</sup> As long as consumers learn that they have the bias, then they will make allowances for this in their behavior. This will, in turn, limit the extent to which firms can exploit such biases. The implication is that educating consumers about their biases, even if this does not change them, may be sufficient to remove much of the associated consumer detriment.

Moreover, there are wider benefits of allowing consumers to make mistakes and learn from them. Such experiences will teach consumers market skills that are transferable across many of their day-to-day decisions in markets. This may, in turn, enhance consumers' active involvement in markets.

### 3. Self-regulation

Finally, self-regulation can also play an important role in improving consumer decision-making or ensuring firms do not exploit consumer biases. Self-regulation occurs where firms opt to join schemes that require them to behave in particular ways. This can be helpful where firms do not have a unilateral incentive to improve market outcomes but might have a collective industry incentive to do so.<sup>48</sup> For example, if reducing price complexity could increase industry-wide demand, by making consumers more confident to enter the market, then this may be something that could be achievable through self-regulation.

SELF-REGULATION CAN ALSO PLAY AN IMPORTANT ROLE IN IMPROVING CONSUMER DECISION-MAKING OR ENSURING FIRMS DO NOT EXPLOIT CONSUMER BIASES.

A more general example of a self-regulatory body is the UK Advertising Standards Authority (“ASA”). Part of the ASA's responsibility is to adjudicate over claims of false, or misleading, advertising. In doing so it ensures that firms do not unduly attempt to play on consumer behavioral biases through such techniques.

## B. INTERVENTION CAN POTENTIALLY DO MORE HARM THAN GOOD

Where markets would otherwise self-correct, intervention can clearly be unnecessary or even harmful. Moreover, even if markets cannot self-correct, care must be taken when intervening because it is not always clear that interventions will improve outcomes for consumers. This is nothing new, having been recognized by John Stuart Mill over 150 years ago:

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“All errors which [man] is likely to commit against advice and warning, are far outweighed by the evil of allowing others to constrain him to what they deem his good.”<sup>49</sup>

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This quote highlights two overarching issues that often overshadow intervention. First, on a principled level, we want solutions that solve the problem, but we do not want to remove consumer choice. This has been described as a “liberal paternalist approach.”<sup>50</sup> Second, there is no guarantee that authorities will necessarily improve the market or not create unforeseen consequences else-

where. Asymmetries in information are inherent in intervention. Firms may have incentives to manipulate the information they provide to authorities in order to gain more favorable outcomes. More simply, it may be that authorities simply do not have the level of expertise required to make delicate interventions. In such situations an authority would be wise to be conscious of its own limitations.

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Finally, it is worth noting that although this paper only discusses consumer and firm behavioral biases, this does not preclude the possibility of authorities having behavioral biases as well! This, and the previous two points, all cau-

tion us against being too paternalistic even when behavioral biases point to problems within the market.

In summary, we cannot assume that behavioral economics implies more intervention. Markets still can, and may, provide solutions to problems.

### C. LESSONS FOR DESIGN OF REMEDIES

While behavioral economics may not necessitate more intervention, there will always be times—just as there has always been—when intervention is necessary.

Under pure antitrust enforcement, intervention will tend to take the form of penalties for infringement, rather than more proactive remedies in the market place. However, this is not necessarily always the case, as shown by the significant number of Article 9 Commitment decisions within EC Article 102 and 101 cases in the last year.<sup>51</sup> While such remedies have typically been based on the supply side in the past, there is little reason why they should not be based on the demand side, if consumer behavior were found to be an important driver of problems in the market.<sup>52</sup>

Moreover, as mentioned above, there are other tools than antitrust enforcement available for solving market problems arising from behavioral biases. These include consumer enforcement, consumer education, and (in the UK at least) market studies and investigations. There is also potential for authorities to advocate legislation in a particular market.

Where proactive remedies are feasible, they should ideally fit with the liberal paternalistic approach to intervention discussed above. For example, where one outcome is clearly superior to another, it may be possible to design an intervention that defaults consumer behavior to the superior outcome, but without restricting the ability of consumers to make an alternative choice if they so wish. An example of such a remedy is the use of automatic enrollments in pensions to overcome inertia in pension savings. Automatic enrollment nudges those con-

sumers who are “accidentally” under-saving towards a better outcome, while still preserving choice (via an opt out).

Another example is the recent Article 9 remedy in the EU Microsoft Internet Explorer case. As agreed between the Commission and Microsoft, computers in Europe downloaded an update to the Windows operating system.<sup>53</sup> Once the update was downloaded the user was presented with a screen providing, in a random order, several different choices of internet browsers (including Microsoft Internet Explorer). By ensuring the user makes an active choice, the intervention was designed to cut the tie between Windows and Internet Explorer. However, in maintaining the choice, the intervention may be described as a remedy in the liberal paternalist vein.

A final example of a positive intervention in this regard may be obligations on firms to require them to help consumers make decisions. For example, rather than centering on directly reducing market power, recent OFT work in Personal Current Accounts in banking has highlighted clarity, transparency, and consumer empowerment as keys to making the market function effectively. This, in turn, may mean that banks in the UK will need to change what information they provide and how they provide it.

However, behavioral economics also tells us that it is important to consider how consumers will react to market interventions. For example, we know that consumers can face behavioral barriers to assessing information. Indeed, it is well documented that consumers do not always read and understand the information provided to them.<sup>54</sup> This can mean that an intervention that simply improves the information available to consumers will be ineffective in solving market problems.

Moreover, such interventions can even have negative consequences in terms of increasing consumer confusion. For example, a study by the FTC found that revealing to consumers the compensation that mortgage brokers would receive on loans led to consumers placing too much focus on the compensation payments and less on whether or not the loan in question was good value; which, in turn, actually led to them paying more for their loans. It was also found that this placed brokers at a disadvantage to direct lenders and might have led to less competition and higher costs for all mortgage customers.<sup>55</sup>

Behavioral economics therefore shows us the importance of making use of “smarter information”—thinking carefully about its framing, the context in which information is read, and the ability of consumers to understand it. A report for the OFT highlighted the positive story around “traffic light” information in food labeling. Here, simple (and consequently less detailed) information

MOREOVER, SUCH INTERVENTIONS CAN EVEN HAVE NEGATIVE CONSEQUENCES IN TERMS OF INCREASING CONSUMER CONFUSION.

on nutritional value of food led to better outcomes than a full list of food ingredients and nutritional value.<sup>56</sup>

A further concern that can arise around interventions to solve problems associated with consumer biases is that such interventions can be inherently redistributive. In many markets, the gains that firms make from exploiting consumer biases will be to some extent passed back, through the competitive process, to customers who do not exhibit those biases. In this case, there is effectively a form of cross-subsidy between customers, and this may be unwound with intervention. This does not imply that such interventions should not be made, but it is important to be aware that there can be losers as well as winners in such situations.

#### D. PRACTICAL IMPLICATIONS FOR THE ASSESSMENT OF INTERVENTIONS

One very clear lesson from behavioral economics is that it can be difficult to predict how consumers will react. There are many potential biases at play and theorizing will only get you so far. Empirical evidence can be crucial.

However, behavioral biases can also impact on the design and use of surveys and other empirical techniques. For example, if framing matters, then it is important to design surveys carefully so the way in which questions are framed does not distort the responses provided. While we have always recognized the potential differences between a survey response and what consumers and firms really do, behavioral economics reinforces this message.<sup>57</sup> Likewise, if framing matters to consumer purchasing decisions, econometric analysis may sometimes need to

ONE VERY CLEAR LESSON FROM BEHAVIORAL ECONOMICS IS THAT IT CAN BE DIFFICULT TO PREDICT HOW CONSUMERS WILL REACT.

incorporate information on the context in which consumers' decisions were made if its results are to provide a full picture of consumer behavior.

Empirical evidence is especially important when designing remedies that are intended to alter consumer behavior and thereby improve competition. One recent example of the importance of empirical evidence is the Market Investigation by the UK Competition Commission ("CC") into Payment Protection Insurance ("PPI"). Here the firms investigated were found to have effective point of sale monopolies of PPI, as they're typically sold as a follow-on product alongside other financial products. As a result, prices were found to be very high.<sup>58</sup>

The CC proposed a package of measures (which affected the supply and demand side) to bring competition into the market. This included a prohibition on the sale of PPI during the sale of the credit product and for seven days afterwards. However, the CC's appeal body, the Competition Appeal Tribunal ("CAT"), rejected this remedy and sent it back to the CC for further consideration.<sup>59</sup> The CAT contended that the CC had not provided sufficient evidence

regarding how consumers would actually respond to the remedy and whether it would benefit them.

In practice, our ability to design appropriate remedies is likely to be enhanced by empirical research (often experimental) that can capture how consumers will really respond to mooted solutions. The importance of road testing remedies is outlined in a 2009 OFT report.<sup>60</sup>

## V. Conclusion

This paper asked whether behavioral economics questions the foundations of antitrust. The answer, like many answers to economic questions, is nuanced. Behavioral economics does question some of our current thinking and it may alter how we carry out some of our analysis. However, it does not represent the fundamental shift some would advocate (and some would fear).

Behavioral economics is an incremental advance in our understanding just as informational economics was to the basic competition model. Economics is an evolving science, changing all the time, and economists are used to this. Two-sided market theory was a relatively recent incremental change in our understanding of how some markets work. This led to direct changes in how we understand these markets and when and how we intervene. The same will be true of behavioral economics, but it is important to resist any claim that behavioral economics means everything must change.

This highlights one last point—where behavioral biases appear to be creating problem, some may advocate abandoning competition for regulation. We discussed above the dangers of over-paternalism and limiting choice. Competition authorities have a key role in reminding government of the benefits that competition and choice bring.<sup>61</sup> In doing so, however, they need to be cognisant of the available evidence on behavioral economics and its implications. We hope that this paper contributes to that goal. ▼

IN PRACTICE, OUR ABILITY TO DESIGN APPROPRIATE REMEDIES IS LIKELY TO BE ENHANCED BY EMPIRICAL RESEARCH (OFTEN EXPERIMENTAL) THAT CAN CAPTURE HOW CONSUMERS WILL REALLY RESPOND TO MOOTED SOLUTIONS.

1 For a general review of this literature, see S. DellaVigna, *Psychology and Economics: Evidence from the Field*, 47 J. ECON. LITERATURE 315-372 (June 2009).

2 Note that behavioral economics does not describe a chaotic world in which consumers make random decisions. In general, the behavioral biases exhibited by consumers are systematic and are often boundedly rational.

3 The processing power biases include: choice overload (consumers make choices on sets of information); representational biases (consumers use visible value as a good indicator of hidden value); and rules of thumbs (consumers imitate what other consumers do rather than make their own decisions).

- 4 The framing biases include: relative utility (a consumer's utility is affected by reference points such as past actions); default biases (consumers adopt the default option); and placement biases (consumers' choices depend on where goods are placed on a list—e.g. a tendency to choose the first).
- 5 The time inconsistency biases include: projection bias (consumers expect that they will feel the same tomorrow as they do today); over optimism (consumers over estimate how much they will use a good, or underestimate how much it will cost them); and hyperbolic discount biases (consumers value today disproportionately greater than tomorrow).
- 6 The loss aversion biases include endowment biases (consumers value something more once they have owned it more than before they own it).
- 7 If there are search costs, Diamond found that consumers may not search the market but simply choose a firm randomly. The best response of firms is then to charge a monopoly price to these consumers. P. Diamond, *A Model of Price Adjustment*, 3(2) J. ECON. THEORY 156-58 (1971).
- 8 P.D. Klemperer, *Markets with Consumer Switching Costs*, 102(2) Q. J. ECON. 375-394 (1987) showed that, in the context of a single period model, switching costs could be thought of as a form of artificial product differentiation, reducing the intensity of competition between competitors. In the two period model in J. Farrell & C. Shapiro, *Dynamic Competition with Switching Costs*, 19(1) RAND 123-137 (1988) the result is more complicated as firms may compete more intensely in order to exploit their established base in the second period, thus creating a "bargain and rip-off" cycle. See also Office of Fair Trading, *Switching Costs*, Economic Discussion Paper 5 (April 2003), for a review of the literature.
- 9 For example, S. Agarwal, J. C. Driscoll, X. Gabaix, & D. Laibson, *Learning in the Credit Card Market*, Working paper series (2008) investigate learning in the credit card market. They find that although consumers learn (through negative feedback), this hard-earned knowledge does not fully persist (i.e. knowledge depreciates).
- 10 For example, S. DellaVigna & U. Malmendier, *Paying not to go to the gym*, 96(3) AMER. ECON. REV. 694-719 (2006), using data from three U.S. health clubs find that consumers frequently choose contracts that appear sub-optimal given their attendance frequency. Members who choose a contract with a flat monthly fee pay a price per expected visit of more than \$17, even though they could pay \$10 per visit using a 10 visit pass. They suggest this could be driven by consumer overconfidence about gym attendance.
- 11 For example, V.G. Morwitz, E.A. Greenleaf, & E.J. Johnson, *Divide and prosper: Consumers' reactions to partitioned prices*, 35 J. MARKETING RES. 453-463 (1998) find that, when prices are presented in parts, consumers' ability to recall the entire price for the good is diminished and demand is increased. This might suggest that consumers may be anchoring to the first piece of information seen (generally the base price) and then attributing less importance to later pieces of information (i.e. surcharges or add-ons). Similarly, T. Hossain & J. Morgan, *Plus Shipping and Handling: Revenue (Non) Equivalence in Field Experiment on eBay*, ADVANCES IN ECON. ANALYSIS & POL'Y (2005) suggest that consumers treat the base price separately from the handling fee in a natural field experiment they conducted using eBay auctions. The authors found that charging a low reserve price compared to the retail price of the good and high shipping and handling costs resulted in a higher total sales price than the reverse situation (low shipping and handling but high reserve price). This result may also be driven by consumers ignoring or missing the additional costs, although there are alternative behavioral explanations such as endowment bias.
- 12 For example, M. Baye, J. Morgan, & P. Scholten, *Price Dispersion in the Small and in the Large: Evidence from an Internet Price Comparison Site*, 52(4) J. INDUS. ECON. 463-496 (2004), using a UK data set of consumer click throughs from Kelkoo.co.uk for 2003 to 2004, found that even though Kelkoo does not order results by price by default, a firm listed first on a search results page still benefited from 17.5 percent higher demand on average than when it was listed second. This is despite the ease with which the consumer can usually reorder the results by lowest price. More generally, A. Tversky & D. Kahneman, *The Framing of Decisions and the Psychology of Choice*, 211 (44810) Sci.



- 453-458 (1981) show how psychological principles govern the perception of decision problems and the evaluation of options.
- 13 For example, as well as finding consumers are overconfident about gym use (as suggested above) DellaVigna & Malmendier (2006), *supra* note 10, suggest that consumers might overestimate their propensity to cancel automatically renewed contracts.
- 14 For a discussion of these and other consumer issues which can arise, see M. Armstrong, *Interactions between competition and consumer policy: A report prepared for the OFT*, OFT991 (April 2008).
- 15 The research uses a controlled economic experiment to test five pricing frames, whereby the true price is provided in a complex way. The pricing frames investigated are drip pricing, "sales," complex pricing, bait pricing, and time limited offers. Drip pricing is where the consumers see only part of the full price up front and price increments are dripped through the buying process. "Sales" occur where a sale price is given and a pre-sale price is also given as a reference to the consumer, for example "was £2 is now £1." Complex pricing is where the unit price may be difficult to determine, for example "3 for the price of 2." Bait pricing is where sellers may promote a special price but there are only a limited number of goods actually available at that price. Time limited offers are where a price is advertised as only being available for a pre-defined short period of time. The report found that all of these pricing practices have some adverse effect on consumer choice and that most of them do significantly impact on consumer welfare. It suggests that the root of the errors can be found in the existence of the behavioral biases, largely the endowment effect and cognitive errors. Office of Fair Trading, *The Impact of Price Frames on Consumer Decision Making*, Economic Discussion paper, (Forthcoming, April 2010).
- 16 For example, P. Klemperer, *Competition when Consumers have Switching Costs: An Overview with Applications to Industrial Organization, Macroeconomics, and International Trade*, REV ECON. STUDIES 515-539 (1995) finds that in a simple multi-period model with two firms both firms are able to maintain higher prices and earn higher profits in the presence of switching costs than without switching costs. See also A. Banerjee & L. Summers, *On frequent flyer programs and other loyalty-inducing arrangements*, H.I.E.R. DP no. 1337 (1987).
- 17 For example DellaVigna & Malmendier (2006), *supra* note 10, argue that a reason why gyms favor the use of term contracts with upfront payments may be to lock in overconfident consumers. See also M. Grubb, *Selling to Overconfident Consumers*, 99(5) AMER. ECON. REV. 1770-1807 (2009) who analyzed U.S. mobile phone data to investigate whether the three part tariffs seen within the U.S. mobile phone industry were developed as a means of capturing consumers' overconfidence. He found this was the most plausible of different explanations for the tariff structure. Grubb argues that the model can be reinterpreted more widely to explain the use of flat rates and late fees in rental markets, and teaser rates on loans.
- 18 See, for example, M. Eisenberg, *The Limits of Cognition and the Limits of Contract*, 47(2) STAN. L. REV. 211-59 (1995).
- 19 Several commentators have argued that the low-cost airlines are particularly effective in using drip pricing to exploit the fact that consumers are more likely to buy the product after they have invested time in it, see, for example, D. Milmo, *Ryanair Scraps Airport Check-in Desks*, GUARDIAN (Sept. 30, 2009). See also G. Ellison & S.F. Ellison, *Search, Obfuscation, and Price Elasticities on the Internet*, 77(2) ECONOMETRICA 427-452, 03 (2009) who argue that economists should think about firms' active incentives to obfuscate as well as consumers' incentives to search.
- 20 Indeed one strategy consultancy advertises courses on how to minimize banking competition by increasing the difficulties for consumers to compare across products, stating that: "The likelihood that banks continually try to undersell one another is greater if their price structures make it easy for customers to compare offers. In order to prevent easy comparisons, a bank should create price structures that are clearly distinguishable from those of its rivals. Price systems with several price components are especially effective." G. Wuebker & J. Baumgarten, *Strategies against Price Wars in the Financial Service Industry*, Simon-Kucher & Partners.

- 21 See, for example, C. Shapiro, *Aftermarkets and Consumer Welfare: Making Sense of Kodak*, 63(2) ANTITRUST L. J. 496 (1995). See also H. Beales, R. Craswell & S. Salop, *The Efficient Regulation of Consumer Information*, 24(3) J. L. & ECON. 491-539, §1B (1981).
- 22 See X. Gabaix & D. Laibson, *Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets*, 121(2) Q.J. ECON. 505-40 (2006).
- 23 This point is discussed in respect of switching costs within Klemperer (1987), *supra* note 8. But the point is more general.
- 24 This result can be derived from either the switching/search literature (*supra* note 8) or the behavioral literature. With regards to the behavioral literature, Ellison and Ellison (2009), *supra* note 19, examine price data for internet retailers. They show that some retailers engage in obfuscation in order to frustrate consumer search, thus resulting in much less price sensitivity on other products. At the extreme, R. Spiegler, *Competition Over Agents with Boundedly Rational Expectations*, 1(2) THEORETICAL ECON. 207-31 (2006) showed that under certain circumstances firms' prices may be entirely independent of competition.
- 25 In standard competition issues, prices above the competitive level result in underconsumption of the product (the Harberger triangle). In aftermarkets there may be two distortions: the underconsumption of the secondary product, but also overconsumption of the primary product sold below cost. In large markets the resulting allocative loss may be significant. For example, in the UK the Competition Commission estimated that the cross subsidy from the price of insurance on loans to loans resulted in an allocative inefficiency in excess of £200m. See Competition Commission, *Market investigation into payment protection insurance, Final Report*, ¶10.494 (January 2009).
- 26 While the relationship between competition and innovation is complicated; in general, competition before the innovation takes place drives faster innovation. For a discussion of the links among competition, productivity, and innovation see *Productivity and Competition, an OFT Perspective on Productivity Debate*, OFT877 (2007).
- 27 See, for example, J. Hausman & G. Leonard, *The Competitive Effects of a New Product Introduction: A Case Study*, 50(3) J. INDUS. ECON. 237-63 (2002). See also A Petrin, *Quantifying the Benefits of New Products: The Case of the Minivan*, 110 J. POL. ECON. 705 (2002).
- 28 Sale and rent back is a product which allows consumers who are in difficulties in making mortgage payments to sell their home to a company and then rent it back from them. *Sale and rent back: An OFT Market Study*, OFT (October, 2008).
- 29 *Personal Current Accounts in the UK: An OFT Market Study*, OFT (July 2008).
- 30 For example, the UK market investigation reference into payment protection insurance ("PPI") is discussed later in this paper. In this case, the OFT could potentially have attempted to bring an Article 102 abuse case against each of the suppliers of credit and PPI. Alternatively, action under consumer legislation could have been used. However, the OFT took the view that a reference to the Competition Commission was most appropriate, since the CC could consider all aspects in considering whether a problem existed and, if so, how best to remedy the problem both from the competition and consumer perspective. See, *Payment protection insurance: Report on the market study and proposed decision to make a market investigation reference*, OFT869 (October 2006).
- 31 It is noteworthy that the Vertical Restraints Block Exemption Guidelines explicitly mention that tying may lead to supra-competitive prices, especially "in the case of long-term contracts or in the case of aftermarkets with original equipment with a long replacement time [as] it becomes difficult for customers to calculate the consequence of the tying." *Commission notice of 13 October 2000: Guidelines on Vertical Restraints*, COM(2000/C 291/01), Official Journal C 291 ¶217 (October, 2000).

- 32 Case COMP/C-3/37.792 Microsoft.
- 33 See Gabaix & Laibson (2006) *supra* note 22. See also S. DellaVigna & U. Malmendier, *Contract Design and Self-Control: Theory and Evidence*, Q. J. ECON. 119: 353-402 (2004) who describe a model in which consumers make their purchase decisions based on naïvely low estimates for their use of the secondary good. Once consumers are locked into the primary good they find they use the secondary good more often than initially estimated. Firms can exploit this naivety by extracting the consumers' rents upfront, but then extracting an additional rent when consumers are locked in. The result is more than one monopoly rent.
- 34 There are a few exceptions to this. First, in Spiegler's model firms respond to a greater number of competitors by hiding their prices even more, *supra* note 24. Second, in other general models involving product differentiation all profits are competed away only when the market is fully covered—that is when industry demand is independent of price. When this unrealistic assumption is relaxed, the amount of profits the firm can retain in exploiting the secondary market is proportional to the degree of primary competition. See, for example, C. Genakos & T. Valletti, *Testing the 'Waterbed' Effect in Mobile Telephony*, CEIS Working Paper No. 110 (January 2008).
- 35 See Gabaix & Laibson (2006), *supra* note 22.
- 36 Federal Trade Commission, Personal Protective Armor Ass'n, 59 Fed.Reg. 19,019 (1994).
- 37 This section draws from a recent paper by Armstrong & Huck. See M. Armstrong & S. Huck, *Behavioral Economics as Applied to Firms: A Primer*, 6(1) COMPETITION POL'Y INT'L 3-45 (Spring, 2010), also published as M. Armstrong & S. Huck, *Behavioral Economics as Applied to Firms: A report prepared for the OFT*, OFT 1213.
- 38 For a discussion of the literature see Armstrong & Huck, *Id.*
- 39 *Id.*
- 40 See M. Levenstein & V. Suslow, *Cartel bargaining and monitoring: The role of information sharing*, THE PROS AND CONS OF INFORMATION SHARING (Mats Bergman ed.), Swedish Competition Authority (2006).
- 41 This may also address some of the criticism of the "cheap talk" literature. This literature argues that there is no point in exchanging information in order to monitor an agreement if it can't be verified, since no firm is going to cheat on the agreement but still provide the true information that reveals they have cheated. However, the role of private information exchange may not be to monitor the cartel but rather to create and sustain the trust needed to maintain the cartel. See J. Farrell & M. Rabin, *Cheap Talk*, 10 J. ECON. PERSPECTIVES 103-118 (1996).
- 42 N. Al-Najjar, S. Baliga, & D. Besanko, *Market forces meet behavioural biases: Cost misallocation and irrational pricing*, 39 RAND 214-23 (2008) describe recent physiological and experimental literature suggesting that firms may confuse fixed, sunk, and variable costs. They show that even, if pricing strategies that increase profits do better in the market, there may be equilibrium in which there are non-standard pricing practices.
- 43 See, for example, U. Malmendier & G. A. Tate, *Who Makes Acquisitions? CEO Overconfidence and the Market's Reaction*, AFA 2004 San Diego Meetings (March 15, 2003).
- 44 See Gabaix & Laibson (2006), *supra* note 22.
- 45 See *Judgment: The Office of Fair Trading v Abbey National plc & Others*, UK Supreme Court, UKSC 6 (2009).
- 46 Of course where a mistake leads to irrevocable and significant detriment (for example, buying the wrong pension) learning may not be sufficient to prevent serious harm.

- 47 See DellaVigna (2009), *supra* note 1.
- 48 Self-regulation may also create competition concerns as it may provide opportunities for anticompetitive practices, such as foreclosure or price-fixing. For more details, see Office of Fair Trading, *The Economics of Self Regulation in Solving Consumer Quality Issues*, Economic Discussion Paper OFT1059 (March 2009).
- 49 JOHN STUART MILL, ON LIBERTY (1859).
- 50 For a popular explanation of liberal paternalism see R. THALER & C.R. SUNSTEIN, NUDGE: IMPROVING DECISION ABOUT HEALTH, WEALTH AND HAPPINESS (2008).
- 51 Recent Article 9 decisions include Rambus, RWE, Eon, Ship Classification, and Microsoft. See, *Commission accepts commitments from Rambus lowering memory chip royalty rates*, Rambus IP/09/1897 Brussels, (December 2009); *Commission opens German gas market to competition by accepting commitments from RWE to divest transmission network*, RWE, IP/09/410 Brussels, (March 2009); *Commission opens German electricity market to competition*, EON, IP/08/1774 Brussels, (November 2008); *Commission accepts commitments by GDF Suez to boost competition in French gas market*, GDF Suez, MEMO/09/536 Brussels (December 2009); *Commission paves way for more competition in ship classification market by making IACS' commitments legally binding*, Ship Classification, IP/09/1513 (October 2009); *Commission welcomes Microsoft's roll-out of web browser choice*, Microsoft, IP/10/216 Brussels, (March 2010).
- 52 Such an approach has been articulated in the context of enforcing exploitative abuses. See A. Fletcher & A. Jardine, *Towards an Appropriate Policy for Excessive Pricing*, 12th Annual Competition Law and Policy Workshop (June 2007).
- 53 *Commission welcomes Microsoft's roll-out of web browser choice*, *supra* note 51.
- 54 For example, see *Warning: Too much information can harm, A final report by the Better Regulation Executive and National Consumer Council on maximising the positive impact of regulated information for consumers and markets*, (November 2007).
- 55 See Federal Trade Commission Bureau of Economics Staff Report, *The Effect of Mortgage Broker Compensation Disclosures on Consumers and Competition: A Controlled Experiment*, (February 2004).
- 56 See Office of Fair Trading, *Assessing the effectiveness of potential remedies in consumer markets*, Economic Discussion Paper OFT994, ¶¶ 4.39 – 4.42 (April 2008).
- 57 The concepts of stated and revealed preference are well understood in competition analysis. For a discussion of the implications of these consequences, see Office of Fair Trading / Competition Commission, *Good practice in the design and presentation of consumer survey evidence in merger inquiries*, Forthcoming for consultation March 2010.
- 58 See Competition Commission, *Market investigation into payment protection insurance*, ¶4.97 (January 2009).
- 59 *Barclays Bank PLC v Competition Commission*, 2009, Competition Appeal Tribunal, Case: 1109/6/8/09.
- 60 See Competition Commission and Office of Fair Trading, *Road testing of consumer remedies*, Economic Discussion Paper OFT1099 (July 2009).
- 61 For a recent report that provides a toolkit for introducing choice and competition into public service markets, drawing on the 'access, assess, act' framework set out above, see Office of Fair Trading, *Choice and Competition in Public Service Markets*, Economic Discussion Paper OFT (March 2010).