Oxera

Behavioural economics and its impact on competition policy

A practical assessment with illustrative examples from financial services

Prepared for
The Netherlands Authority for Consumers and Markets (ACM)

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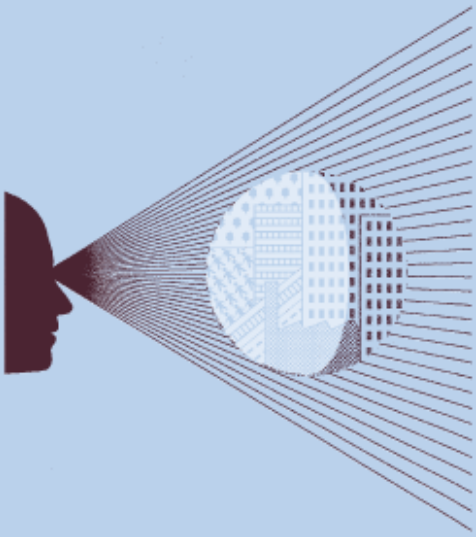

Executive summary

Context and scope of the report

Commissioned by The Netherlands Authority for Consumers and Markets (ACM), this report is the first to assess systematically how behavioural economics in its current state influences, or could influence, each of the main instruments and tools used in competition policy.[1] Since the behavioural economics literature is still developing, and is increasingly being tested in policy practice, this report will not be the final word on this subject.

Behavioural economics uses insights from psychology to explain the effects of cognitive and behavioural processes on consumer behaviour and market outcomes. In academia, the rise of behavioural economics has led to an extensive debate about the relative merits of traditional and behavioural economics (which is outside the scope of this report). This debate in academia is mirrored in policy debates around the world, including in competition policy.

There are different views, and this report aims to shed light on the debate. On the one hand, commentators have argued that i) traditional economic models can explain some of the phenomena associated with behavioural economics, and competition practitioners have always had some awareness of consumer biases; ii) behavioural economics has greater relevance where individual consumers, as opposed to companies, are concerned; and (iii) adverse outcomes resulting from consumer biases are best dealt with under consumer protection rather than competition policy. On the other hand, there are certain market outcomes that can be better understood, or remedied, with reference to insights from the behavioural economics literature.

Oxera's main conclusions on the relevance of behavioural economics to competition policy

This report presents a concise overview of the behavioural economics literature (section 2) and discusses how consumer biases influence market outcomes (section 3). It also systematically reviews the relevance of behavioural economics to the main competition policy instruments—ie, the rules on abuse of dominance, restrictive agreements, and mergers—and to remedy design (sections 4 and 5). Examples from the financial services sector are used throughout the report to illustrate the main points. The result is a practical overview that indicates a number of areas where, based on the current state of the literature, the insights from behavioural economics can already be useful for the analysis in competition cases.

This is not to say that behavioural economics has, or should have, a radical impact on competition policy. Indeed, if one were to write, or update, a textbook on competition law and economics, most of the text would probably remain unaffected by behavioural economics. It is likely that in many competition cases the insights of behavioural economics will not play a significant role, either because the cases concern business-to-business disputes where consumer biases are of less importance, or because the traditional competition policy tools can account sufficiently for the effects of any consumer biases.

[1] Oxera is grateful for the discussions and brainstorm sessions held for this study with the following people: ACM/NMa staff; economists at the UK Financial Services Authority; Professor Vincent Crawford, All Souls College, University of Oxford; and Professor Sir John Vickers, All Souls College, University of Oxford. Oxera is fully responsible for the content of this report. It does not reflect the views of the ACM. The ACM (in Dutch: Autoriteit Consument en Markt) came into existence in April 2013 through the merging of the competition authority (the NMa), the telecommunications and postal regulator (OPTA) and the Consumer Authority. The study was initially commissioned by the NMa.

Instead, behavioural economics can be seen as providing useful additional insight. There are certain market situations and outcomes that are driven by consumer biases and bounded rationality, and that can be understood or explained through behavioural economics. Phenomena such as search costs, switching costs and product differentiation have long been understood in the literature on industrial organisation (IO) and in competition policy. The added value of behavioural economics is that it can cast further light on what drives search costs and switching costs, and on how product differentiation affects consumer behaviour, in each of the access, assess and act stages of the consumer decision-making process (where consumer choice depends on the ability and inclination to search, compare products, and seek out better deals). Behavioural economics can then shed light on how firms might be able to exploit consumer biases.

In many conduct and merger cases in consumer markets, it may be useful to consider whether there any relevant behavioural economics aspects, not as the sole approach, but rather as part of the broader economic toolkit with which a case can be analysed (which also draws on the fields of IO, financial economics, and econometrics). One cannot really classify competition investigations according to whether behavioural economics is relevant or not; sometimes consumer biases and bounded rationality will be a major factor in the investigation and other times they will be just one aspect among others that need to be considered.

In a similar vein, remedies based on insights from behavioural economics can be used in cases dealing directly with market outcomes and competition concerns resulting from consumer biases (eg, the payment protection insurance (PPI) case discussed in sections 4 and 5). However, they can also be used more broadly in cases where the competition problems are not mainly related to consumer biases as such (eg, the *Microsoft* cases).

The next sections in this executive summary provide more detailed reasoning behind Oxera's main conclusions.

Implications of behavioural economics for competition and market outcomes (sections 2 and 3)

The cognitive processes and consumer biases discussed in section 2 of this report have implications for how demand and supply interact and the market outcomes. Product differentiation and complexity can affect consumer behaviour, in each of the access, assess and act stages. Consumer biases may get in the way of a virtuous circle between demand and supply.

Firms may be able to exploit consumer biases at each of these stages. In particular, pricing frames matter. Experimental studies show how pricing practices, such as drip pricing, sales offers and complex pricing, can be profitable strategies that may harm consumers. With drip pricing, the endowment effect and mental accounting play a role: having engaged in the buying process, people's point of reference (the anchor) shifts and they feel that they already own the product, so they are more inclined to pay not to lose it. Likewise, experiments show that sellers may have an incentive to create multiple-attribute products and set higher prices in order to confuse buyers, rather than simplifying the information and competing on price to capture market share.

One conclusion from the literature that has direct relevance for competition policy is that firms that engage in practices such as partitioned and complex pricing may have a greater and more persistent degree of market power than would follow from the traditional models of competition. Consumers may not provide adequate discipline, and consumer learning may not be perfect. The presence of many naive (as opposed to sophisticated) customers may exacerbate these adverse effects. In the longer term, entry by new competitors may not

always resolve the problem. There are market situations where even firms with small market shares have an ability and incentive to engage in these practices.

It is certainly not the case that competition policy intervention is called for in all these situations. First, the above situations are theoretical possibilities, and the severity of the adverse market outcome would have to be assessed empirically in each case. Second, intervention may not be appropriate or possible if the established market power thresholds in competition law are not met (market power is a matter of degree, and competition law concerns arise only if there is a significant degree of market power).

Behavioural economics, market definition and market power (section 4)

Insights from behavioural economics do not significantly change the practices associated with market definition in competition investigations. The SSNIP test remains an appropriate conceptual framework for defining the market in the presence of consumer biases. Conceptually, because the SSNIP test is concerned with *how* consumers respond to price, and not *why*, it may often not really matter whether these responses are influenced by biases. Nevertheless, behavioural economics insights into why consumers behave in a certain way can help in framing the market definition analysis (eg, when specifying the econometric model or survey to be carried out) and in interpreting and understanding the results of the analysis.

It is well-known that the choice of the price base to which a price increase is applied as part of the SSNIP test is crucial in obtaining a meaningful market definition. Behavioural economics suggests that this question is especially relevant where more than one price is involved—for example, where there are bundled products, add-ons and drip pricing. Furthermore, it may be relevant to consider price discrimination markets based on customer groupings that follow from the behavioural economics literature—in particular, the distinction between sophisticated and naive customers.

The application of the SSNIP test to markets with drip pricing or secondary products may lead to finding 'pockets' of market power—narrow markets, with market power/dominance for the provider. The PPI case is an example. This makes the abuse of dominance rules a potentially relevant instrument to intervene in such markets. However, significant caution should be exercised in such circumstances; there is little precedent of such intervention, and there may be a risk of over-intervention.

Behavioural economics and the assessment of conduct and mergers (section 4)

Behavioural economics has a great deal of insight to add in relation to the effects of particular business practices on consumers and on competition. This is why it can be of relevance to the effects-based approach to abuse of dominance and restrictive agreement cases.

Abuse cases involving the direct exploitation of customers are rare, and usually limited to excessive pricing cases (as opposed to other exploitative practices, such as reducing service quality). Behavioural economics indicates that firms may sometimes have a greater ability to exploit their customers (or, more specifically, exploit consumer biases) than would follow from traditional models. Whether this means that competition authorities should look more closely at exploitative abuse cases, or leave it to consumer protection and financial regulation policies, is a question for further debate.

As regards bundling and tying, behavioural economics shows that consumer biases may reduce competition within a particular market or between markets, providing additional credence to the notion that a company can lever market power from a market in which it is

dominant into one in which it faces competition. Whether such competition concerns can be dealt with under the rules on abuse of dominance is less clear. First, a dominant position must be established, which depends on market definition and the assessment of market power (as discussed above). Second, there is as yet relatively little precedent on such cases under the abuse of dominance provisions.

Restrictive agreements (horizontal and vertical) and mergers can be largely assessed using traditional approaches. However, a number of useful insights from the behavioural economics literature on both consumer and firm biases could be used to supplement these traditional approaches (see section 4).

Behavioural economics and the empirical techniques used in competition investigations (section 4)

Behavioural economics has provided some useful additions to the toolbox of empirical techniques used in competition investigations.

– For econometric analysis of revealed preferences, insights into consumer behaviour can help to identify which variables to include in the model, and to interpret the results.

– Behavioural economics sheds significant light on how surveys for market definition and merger analysis can be designed to obtain reliable information on stated preferences. Insights from psychology and from the behavioural economics literature have already helped guidance to be developed on best practice in the use of surveys.

– There is potential to make use of experiments in competition investigations, a tool frequently used in the behavioural economics literature that can add to results obtained from econometric and survey analysis. This is an unexplored area.

Behavioural economics and remedy design (section 5)

As noted above, remedies based on insights from behavioural economics can be used in cases dealing directly with market outcomes and competition concerns resulting from consumer biases, but they can also be used more broadly in cases where the competition problems are not mainly related to consumer biases as such.

An important implication of behavioural economics for remedy design is that policy-makers need to understand better the demand side of markets, in terms of how consumers actually behave. Collecting empirical evidence and testing the remedies are key steps in the process.

Behavioural economics points to smarter and more targeted remedies that deal effectively with behavioural biases, by seeking to correct these or finding ways of working *with* consumers' biases to deliver a better course of action (rather than trying to solve the biases). Such remedies may be liberal paternalist in nature, which does not deprive consumers of choice, and which results in a better deal for affected customers without making matters worse for other consumers. Such policies might include:

– simplifying information disclosure to the key salient points, to overcome framing, information overload, and inertia;
– activating consumers to make a choice—the 'forced choice'—as opposed to letting them remain inert or simply opt for the default;
– using default opt-ins or opt-outs—where there is a superior outcome for consumers, the policy might be to set that outcome as the default, without restricting consumers' ability to choose an alternative.

These interventions tend to come at a lower cost than more heavy-handed interventions (such as subsidies or education programmes). Another advantage is that they retain the freedom for consumers to choose, but alter the frame within which they access information and make choices. If such interventions do not work effectively, there should not be too many unintended negative consequences.

Interventions may also be aimed at preserving consumer sovereignty. This accommodates the possibility that some consumers (eg, sophisticated consumers) may be worse off as a consequence of the intervention, but that, in cost–benefit terms, consumers as a group are better off. It also means that not all interventions involve simple nudges, but instead that there may be bans on certain forms of firm conduct in circumstances where there is a clear detriment to consumers. A risk with these more restrictive interventions is that there can be a fine line between liberal paternalism and simply paternalism.

Competition policy versus consumer protection and financial regulation (section 6)

Competition law is perhaps not the most direct policy instrument to address adverse outcomes resulting from bounded rationality and consumer biases. In order to intervene under competition law, there must be an anti-competitive conduct, agreement or merger. This necessarily limits the extent to which competition policy can be used, since there will not always be such triggers for intervention in markets with problematic outcomes.

Consumer protection and financial regulation may allow for more direct intervention. Indeed, much of the behavioural economics literature on shrouded pricing and other themes seems to have been written with consumer policy interventions in mind, rather than competition policy as such. There is also a question as to whether behavioural economics, and the state of the empirical evidence base to date, provides sufficiently robust conclusions to provide for the legal certainty required in cases where anti-competitive behaviour is alleged.

An instrument that allows features of competition policy and consumer protection to be combined—and which may therefore be better suited for these cases than the abuse of dominance provisions—is the market investigation instrument in the UK. These investigations can be used to intervene in markets where competition appears to be ineffective, but where there is no obvious abuse of dominance or restrictive agreement. Remedies can be imposed on a forward-looking basis to address adverse competition outcomes, including those arising from consumer biases. Other jurisdictions may wish to consider adopting such a regime, or seek other policy options to combine features of competition policy and consumer protection.

Whether intervention is through competition policy or consumer protection policy, the behavioural economics insights discussed in this report can be of relevance to both. The conceptual approaches to assessing market outcomes, and the importance of, and techniques for, collating empirical evidence on consumer preferences and behaviour apply to consumer protection and financial regulation policies as much as they do to competition policy. For any type of policy instrument, it must be borne in mind that not all adverse market outcomes resulting from bounded rationality and consumer biases can be remedied by governments, in part because governments are equally subject to biases.

Behavioural economics can thus enable smarter intervention, but does not necessarily imply more intervention. Just as a consumer's purchasing process can be affected by biases along the way, so can each stage of a government agency's deliberations—which avenues are explored and not explored; which evidence is relied on; the order in which the analysis is conducted; and so on. Again, also on this topic, behavioural economics provides useful insight that adds to the mainstream thinking, rather than radically overhauling it.

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1 Introduction: context, scope and structure of the report

1.1 Context of the report

Commissioned by The Netherlands Authority for Consumers and Markets (ACM), this report is the first to assess systematically how behavioural economics in its current state influences, or could influence, each of the main instruments and tools used in competition policy.[2] It adds to a growing body of literature that explores what behavioural economics actually means for competition policy. Since the behavioural economics literature is still developing, and is increasingly being tested in policy practice, this report will not be the final word on this subject.

1.1.1 What is behavioural economics?

Behavioural economics uses insights from psychology to explain the effects of cognitive and behavioural processes on consumer behaviour and market outcomes. It has received widespread attention in the past five to ten years, from academia to policy-makers and the wider public, in part owing to popular books on economics and psychology such as *Nudge* and *Predictably Irrational*.[3]

Behavioural economics has established itself as a distinct discipline within the field of economics.[4] In broad terms, traditional economic models rely on stringent assumptions of rationality and consistently ordered preferences. Behavioural economics provides a framework for exploring systematically how interactions between demand and supply are affected when less stringent assumptions are made about how people behave. Certain human cognitive and behavioural characteristics result in constrained (bounded) rationality and potential 'biases' in decision-making and outcomes (as explained in greater detail in section 2 of this report).[5] These characteristics include information framing, the use of heuristics in decision-making, and time-inconsistent preferences.

In academia, the rise of behavioural economics has led to an extensive debate about the relative merits of traditional and behavioural economics. One question is whether behavioural economics is more accurate than traditional economics at predicting certain market outcomes. It is not the case that behavioural economics has overthrown the existing paradigms in economics. The following represents a synthesis of some of the arguments on both sides of this debate.

– Traditional models still perform well in explaining and predicting many economic phenomena, despite stringent assumptions of rationality—after all, any model explaining

[2] Oxera is grateful for the discussions and brainstorm sessions held for this study with the following people: ACM/NMa staff; economists at the UK Financial Services Authority; Professor Vincent Crawford, All Souls College, University of Oxford; and Professor Sir John Vickers, All Souls College, University of Oxford. Oxera is fully responsible for the content of this report. It does not reflect the views of the ACM. The ACM (in Dutch: Autoriteit Consument en Markt) came into existence in April 2013 through the merging of the competition authority (the NMa), the telecommunications and postal regulator (OPTA) and the Consumer Authority. The study was initially commissioned by the NMa.

[3] See Thaler and Sunstein (2008), and Ariely (2008).

[4] The exact boundaries between behavioural economics and other, traditional, disciplines in economics are not always clearly defined; nor do they necessarily need to be. As explained in section 2, this report deals with the main distinguishing features of behavioural economics.

[5] The terms 'consumer bias', 'irrational consumers' and 'errors in consumer decision-making' are often used in the literature, but are not wholly accurate. The cognitive and behavioural characteristics of humans that are the subject matter of psychology and behavioural economics, simply exist, and as such cannot be judged to be erroneous or otherwise. The terms 'bias' and 'irrational' are used in the sense of a deviation from the perfectly rational consumer, and have a somewhat negative connotation. More neutral terminology that is sometimes used is that consumers (and people in general) have 'bounded rationality', and that this can lead to 'sub-optimal' decision-making or market outcomes as benchmarked against a particular social welfare standard. Nonetheless, for clarity and consistency with the literature, this report uses the term 'bias' in many places.

the real world must necessarily make simplifying assumptions, and this does not automatically affect its validity. Furthermore, many phenomena that are associated with behavioural economics have been analysed or captured in more traditional models as well—for example, information asymmetries, network effects, search and switching costs, and seemingly irrational consumer behaviour such as preferring an expensive branded good over a cheaper unbranded equivalent.[6]

– However, as set out in this report, there are also certain market situations and outcomes that can be better explained through behavioural economics than through traditional models, or where an assessment from both angles provides a greater understanding.

It is not within the scope of this report to explore this academic debate. It is far from resolved, and behavioural economics as a field in its own right is still developing.

1.1.2 What does behavioural economics imply for policy, and, in particular, for competition policy?

The debate in academia about the relative merits of traditional and behavioural economics is mirrored in policy debates around the world. Insights from behavioural economics are starting to have some traction in consumer and economic policies—for example, in the USA, the UK, the Netherlands and at the EU level, in the areas of healthcare, pensions, and government information provision.[7]

Behavioural economics has also captured the attention of competition law and policy. Competition authorities are increasingly looking for lessons from behavioural economics to help them determine whether markets are working in the interests of consumers. In the past few years prominent agencies, such as the US Federal Trade Commission (FTC) and the UK Office of Fair Trading (OFT), have produced several reports and statements on this.[8] This report for the ACM can be seen in that context.

An important policy question is whether behavioural economics affects the standard instruments and tools used in competition policy, and, if so, how. The traditional models of competition, monopoly and oligopoly that underpin much of competition policy today come from the literature on microeconomics and industrial organisation (IO). Competition policy also relies on the fields of econometrics and financial economics.[9] How does behavioural economics add to this?

Competition practitioners (officials, lawyers, judges and economists) have expressed many different views on the usefulness of behavioural economics for competition policy. A synthesis of some of the arguments is given below.

– Just as traditional economic models can explain some of the phenomena associated with behavioural economics, competition practitioners have always had some awareness of consumer biases, and past competition cases have sometimes taken these biases into account without any explicit reference to behavioural economics.

– In addition, bounded rationality and consumer biases typically have greater relevance where individual consumers, as opposed to companies, are concerned, and competition policy often deals with company behaviour or business-to-business disputes, which can usually be analysed with traditional instruments and tools.

[6] There are traditional economic models that explain how: i) a market may fail to function where the buyers have less information about the product than the sellers do (asymmetric information); ii) a buyer's demand for a good may depend not only on price but also on the demand of other buyers (network effects); and iii) competition is less effective in markets where consumers face high search or switching costs. Likewise, a consumer's 'irrational' high willingness to pay for a branded good can be captured using traditional demand curves.

[7] For example, the US administration appointed Cass Sunstein, co-author of *Nudge*, as an adviser, and the UK Cabinet Office appointed a 'Behavioural Insights Team'. See Sunstein (2010) and Cabinet Office Behavioural Insights Team (2010). For an overview of some of the European Commission initiatives, see Ciriolo (2011).

[8] See, for example, Federal Trade Commission (2010) and Office of Fair Trading (2010a).

[9] See Niels, Jenkins and Kavanagh (2011).

– It has been argued that the adverse outcomes resulting from bounded rationality are best dealt with under consumer protection rather than competition policy (see also section 6). It is also not the case—and this report does not imply—that consumer biases and sub-optimal market outcomes automatically justify policy intervention. Government intervention can suffer from biases too (see below).

– Another argument that casts doubt on the relevance of behavioural economics to competition policy is that this field of economics is reasonably well-developed theoretically but not yet empirically. The theory has not been sufficiently proven, and practical policy implications are difficult to test.

– On the other hand, it is argued that there are certain types of competition problem that can be better understood, or remedied, with reference to insights from the behavioural economics literature.

The jury is therefore out on whether behavioural economics does, or should, make a difference to competition policy. An ultimate test is whether incorporating the lessons from behavioural economics would lead to more effective enforcement and better-functioning markets. The literature to date has not examined in a systematic way whether changes need to be made to the current competition instruments and tools.

This report for the ACM paves the way towards filling this gap. Building on the existing behavioural economics literature, including studies that have begun to explore the impact on competition policy, the report provides an overview of whether and how behavioural economics, as it currently stands, can be of practical relevance for the main competition policy instruments and tools. As the behavioural economics literature is still developing, its relevance and use in competition policy may also evolve.

1.2 Scope of the report

1.2.1 Main questions addressed in the report

This report answers the following main questions.

– On the main insights from behavioural economics—how do cognitive and behavioural characteristics influence consumers, and what are the implications for competition and market outcomes? This is discussed in sections 2 and 3.

– On the practical implications for competition policy—for each of the main instruments and tools used in competition investigations and remedy design, what is the relevance of behavioural economics, and how could it add to current approaches? This is the practical assessment developed in sections 4 and 5.

– On the overall policy conclusions—what is the overall impact of behavioural economics on competition policy, and how does this relate to other policies, such as consumer protection and financial regulation? This is discussed in section 6.

1.2.2 Focus on consumer biases

Most of the behavioural economics literature deals with consumer biases: a natural extension of the analysis of humans' cognitive and behavioural characteristics. This report also focuses on consumer biases, which means that its findings are most directly applicable to markets in which the buyers are end-consumers.

Nonetheless, firms (or the people who work for them), be they suppliers or buyers in a market, may also be characterised by bounded rationality and biases, and this can be relevant for competition policy. There is another, somewhat less developed, strand of the literature that deals with firms' biases. For completeness, this strand is referred to in the report where relevant, but not elaborated on. Likewise, there is a strand of literature dealing

with behavioural finance, analysing behavioural biases in investors and traders. This literature is mostly relevant for capital and securities markets, and is outside the scope of this report.[10]

Lastly, governments (or the people who work for them) are also characterised by bounded rationality and biases.[11] This is important to bear in mind when discussing remedy design and policy implications of behavioural economics in general (sections 5 and 6). An important lesson from other economic policy areas applies here too: market failures, even if fully identified and understood, cannot always be effectively remedied because there can be government failures as well. By the same token, not all adverse market outcomes resulting from bounded rationality and consumer biases can be remedied by governments, in part because governments are also subject to biases.

1.2.3 Focus on competition law instruments

Competition authorities in many jurisdictions, including the ACM, have legal instruments to investigate the following practices:

- abuse of dominance or unilateral conduct, including predation, price discrimination, loyalty rebates, bundling and tying, and excessive pricing—relevant provisions include Article 102 TFEU and Article 24 of the Dutch Competition Act 1997;
- restrictive agreements, such as cartels, other horizontal agreements, and vertical agreements—relevant provisions include Article 101 TFEU and Article 6 of the Dutch Competition Act 1997;
- anti-competitive mergers—relevant provisions include the EU Merger Regulation and Articles 26–49 of the Dutch Competition Act 1997.

This report explores the relevance of behavioural economics for the economic analyses carried out in cases under each of these instruments. It also explores how, if at all, competition law instruments can be used to address adverse outcomes resulting from bounded rationality and consumer biases. In order to intervene under competition law, there must be an anti-competitive conduct, agreement or merger. However, in markets with problematic outcomes there may not always be such a trigger for intervention. Other relevant policies to deal with such markets include consumer protection and financial regulation. The interaction between the various policies is further explored in section 6.

In this regard it is worth noting that one competition regime, that of the UK, has an additional competition law instrument which can be, and has been, used to address adverse market outcomes resulting from consumer biases. This is the market investigation instrument under the Enterprise Act 2002.[12] These investigations can be used to intervene in markets where competition appears to be ineffective, but where there is no obvious abuse of dominance or restrictive agreement (and hence no trigger to intervene under the other competition law instruments listed above). Remedies can be imposed on a forward-looking basis to address the adverse competition outcomes. This instrument has been applied, among other sectors, to a number of financial services products, such as payment protection insurance (PPI), home credit, personal current accounts, store cards and extended warranties.[13] Examples of these investigations are provided in the report where relevant.

1.2.4 Systematic review of the tools used in competition policy

In line with the focus on competition law instruments, Oxera has systematically reviewed the practical relevance of behavioural economics for each of the main tools used by competition

[10] Leading contributions to this literature include Benartzi and Thaler (1995); Odean (1998); Shiller (2003); and Post et al. (2008).
[11] See, for example, Hirshleifer (2008).
[12] For more information, see Competition Commission (2012). Under this regime, the UK Office of Fair Trading (OFT) (and sector regulators with concurrent powers) can carry out market studies in the first instance and refer markets to the Competition Commission for an in-depth, two-year investigation.
[13] Competition Commission (2009); (2006b); (2007); (2004); and Office of Fair Trading (2012).

authorities to analyse abuse of dominance, restrictive agreements and anti-competitive mergers. The results of this review are presented in section 4 of this report.

The first parts of section 4 deal with two important intermediate stages in competition investigations: market definition, and assessment of market power. The main conceptual tools and approaches for these stages are examined (eg, the hypothetical monopolist test for market definition).

The section then turns to the assessment of business conduct and mergers. Many behavioural economics studies dealing with the impact of consumer biases on market outcomes focus most naturally on conduct within the category of potential abuse of dominance—for example, product bundling and drip pricing.[14] However, the insights from behavioural economics can also be relevant for the assessment of restrictive agreements and mergers, as discussed in the section.

Lastly, section 4 explores the impact of behavioural economics on the main empirical and quantitative tools that are used in competition investigations (eg, survey analysis to aid market definition or merger analysis).

Section 5 looks at remedy design, a relatively underdeveloped area in competition policy, on which behavioural economics can also provide insight. This can refer to remedies for competition problems that arise specifically from consumer biases, and more broadly for competition problems where behavioural economics is one of various angles for the analysis and the remedy design.

1.2.5 Use of illustrative examples from the financial services sector

Examples from the financial services sector are used throughout this report to illustrate the main points. This sector represents an important part of national and global economies, and consumers spend a significant proportion of their income on such services at different stages in their lives.[15] It is a suitable area for applying the principles of behavioural economics. Financial products such as mortgages, current accounts, pensions, and certain types of insurance policy have been the subject of a significant number of behavioural economics and similar studies.[16] There are certain characteristics of such products that may make them particularly susceptible to consumer biases, such as product complexity, infrequent purchasing, and delayed impact of decisions on consumers (see section 2.5 for more detail).

Increasingly, it is financial regulators and consumer protection authorities that are seeking to address consumer biases and the resulting adverse market outcomes in the financial services sector. However, again, the aim of this study is to explore and illustrate how competition policy—rather than other policies—might deal with consumer biases and market outcomes. (The relationship between these policies is discussed in section 6.)

While the examples cited in this report relate mainly to financial services, the guidance developed and conclusions reached will also apply to many other markets characterised by bounded rationality and consumer biases.

[14] With drip pricing, consumers face a headline price up front; as they engage in the buying process, additional charges are 'dripped through' by the seller.

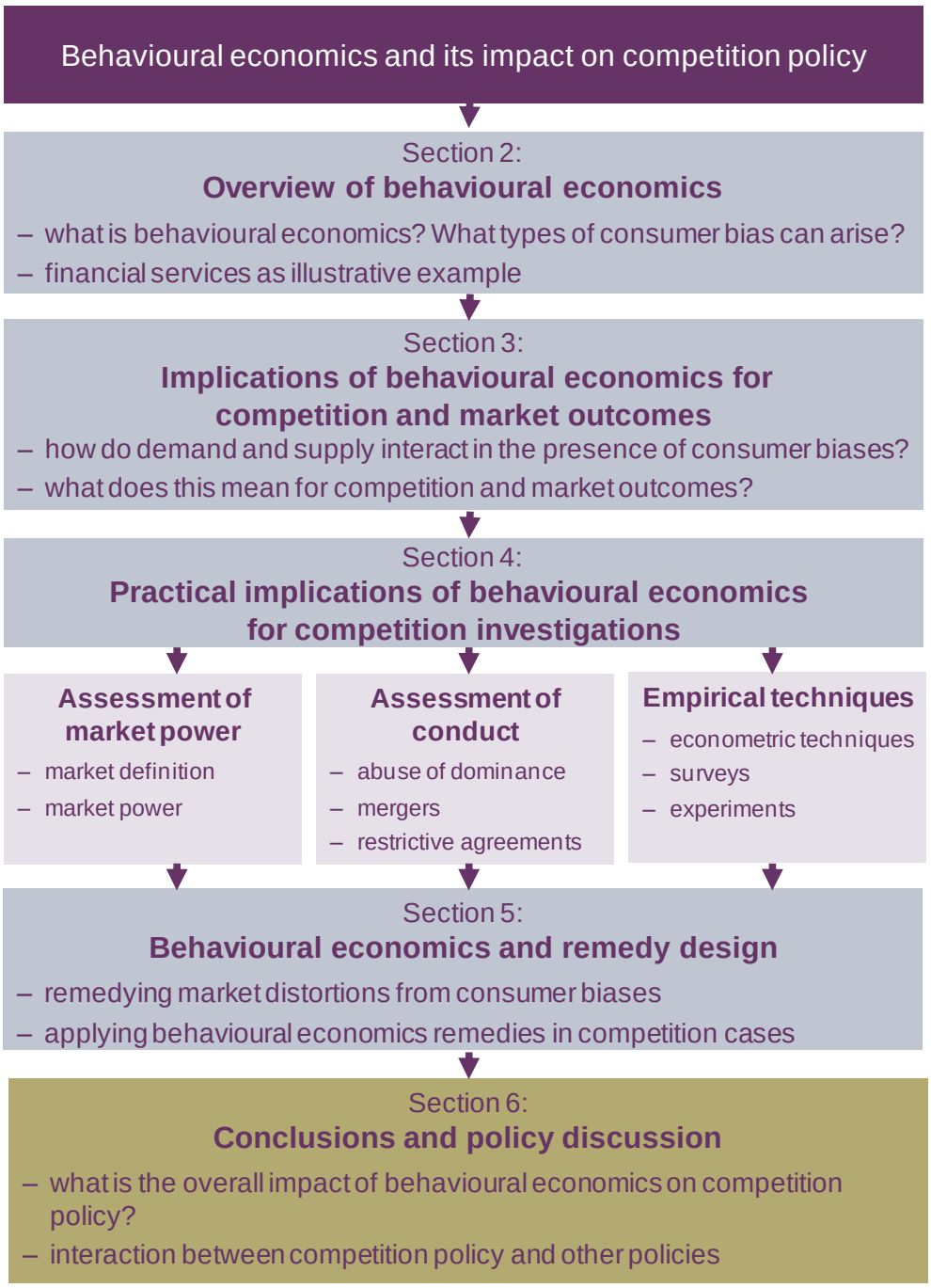
[15] To give an idea of the importance of financial services, data from the UK Office for National Statistics indicates that household expenditure on financial services (including insurance) in 2011 represented 6.4% of total UK household expenditure. As for the sector as a whole, OECD data for 2011 indicates that financial services accounted for 7.3% of GDP in the Netherlands, 8.4% of GDP in the UK, and 4.6% of GDP in Germany. Source: data extracted on November 22nd 2012 from http://www.ons.gov.uk/ons/index.html and http://stats.oecd.org/. The ACM (and before it the NMa) monitors the financial services sector on an ongoing basis through the Monitor Financial Sector, and this was part of the context for commissioning this study.

[16] See, for example, Banks and Oldfield (2006); Financial Services Authority (2008); Chater, Huck and Inderst (2010); Armstrong and Vickers (2012); and Erta et al. (2013). More references are given in section 2.5.

1.3 Structure of the report

In line with the above description, the structure of this report is as illustrated in Figure 1.1.

Figure 1.1 Structure of the report



Source: Oxera.

2 Overview of behavioural economics: cognitive processes and consumer biases

2.1 Introduction

This section and section 3 provide the context for the remainder of the report and seek to shed light on two questions.

– How do behavioural biases influence consumers in general across markets, and, in particular, in financial services markets? This is discussed in the present section.

– What are the potential implications of the insights from behavioural economics for competition and market outcomes? This is discussed in section 3.

This section is structured as follows:

– what is behavioural economics? (section 2.2)
– how do traditional and behavioural economics differ? (section 2.3)
– what types of consumer bias can arise as a result of cognitive and behavioural characteristics? (section 2.4)
– why are these biases especially relevant in financial services markets? (section 2.5)
– how might firm's (as opposed to consumers') biases affect market outcomes? (section 2.6)

2.2 What is behavioural economics?

Behavioural economics applies psychological principles to explain observed behaviours and market outcomes. It is perhaps more accurately referred to as 'psychology and economics'.

In itself, behavioural economics is not especially new—some of it dates back to the 1950s, becoming a field in its own right in the late 1970s/early 1980s with the work of psychologists Daniel Kahneman and Amos Tversky (1979), and the economist Richard Thaler (1980). What is more recent is the attention it has received from the wider public, helped by popular books on economics and psychology such as *Nudge* and *Predictably Irrational*,[17] and by Daniel Kahneman winning the Nobel Prize for Economics in 2002. The theoretical, empirical and experimental literature on behavioural economics and consumer biases has also moved on significantly in recent years.[18]

At its core, behavioural economics provides insights into individuals' behaviour which go beyond the traditional 'fully rational choice' approach, as set out in many microeconomics textbooks.[19] Traditional economic models make a variety of implicit or explicit assumptions about people's preferences, cognitive ability and rationality. These provide the basis for a useful, tractable framework for explaining market outcomes.

In particular, traditional models assume that people have preferences that are reasonably free from external influence. People regularly 'update' their own information from experience, and they learn from their past experiences. They also use all available information to make

[17] Thaler and Sunstein (2008); and Ariely (2008).
[18] See, for example, Spiegler (2011).
[19] As noted in section 1, the exact boundaries between behavioural economics and other, traditional, disciplines in economics are not always clearly defined; nor do they necessarily need to be. This report covers the main distinguishing features of behavioural economics.

fully rational judgements, with the ultimate aim of maximising their utility. Given these assumptions, it is possible to make fairly straightforward predictions about how consumers will behave, based on their preferences, their budget and the prevailing prices of different goods in the marketplace. It is not considered necessary to explore in any detail *why* they make these decisions.

Behavioural economics seeks to integrate theory and practice from the psychology literature into economics. In essence, the approach has been to identify assumptions in traditional economics that may not be realistic; to demonstrate anomalies; and, where possible, to propose alternatives. The behavioural economics literature provides a backbone for understanding why people may face a variety of problems in processing information and making decisions.

As discussed throughout this report, while behavioural economics can have relevance for competition policy, it does not invalidate the existing models of consumer and firm behaviour. Traditional economic models can be combined with insights from behavioural economics to deal with some of the issues discussed in the behavioural economics literature.[20] In addition, in many cases competition policy already takes into account the fact that consumers do not always behave in a perfectly rational way, and that firms can take advantage of these biases. For example, the literature on switching behaviour acknowledges that consumers may not regard products as perfect substitutes, and that there can be barriers to switching. Whether this is attributable to rational thinking may be of secondary importance in this context.

Behavioural economics can help to explain why search and switching costs might arise, and how consumers actually make decisions. From a regulatory perspective, however, understanding such processes is important only as a means to an end. Behavioural economics will generally be of most relevance where the incorporation of its psychological underpinnings allows for a clearer explanation of market outcomes than a traditional model does. This is most likely to be the case in situations where systematic (ie, non-random) biases significantly hamper consumer choice, and, in turn, where firms are able to exploit these biases, and affect market outcomes, in a systematic way.

What behavioural economics therefore adds is a richness of understanding about why certain forms of anti-competitive conduct—deemed less feasible using a traditional approach—are actually more feasible; why the market may not always correct these distortions; and how remedies might be designed to correct competition problems (without implying that intervention can always improve market outcomes). Behavioural economics adds to, rather than replaces, the existing toolkit available to policy-makers and competition authorities.

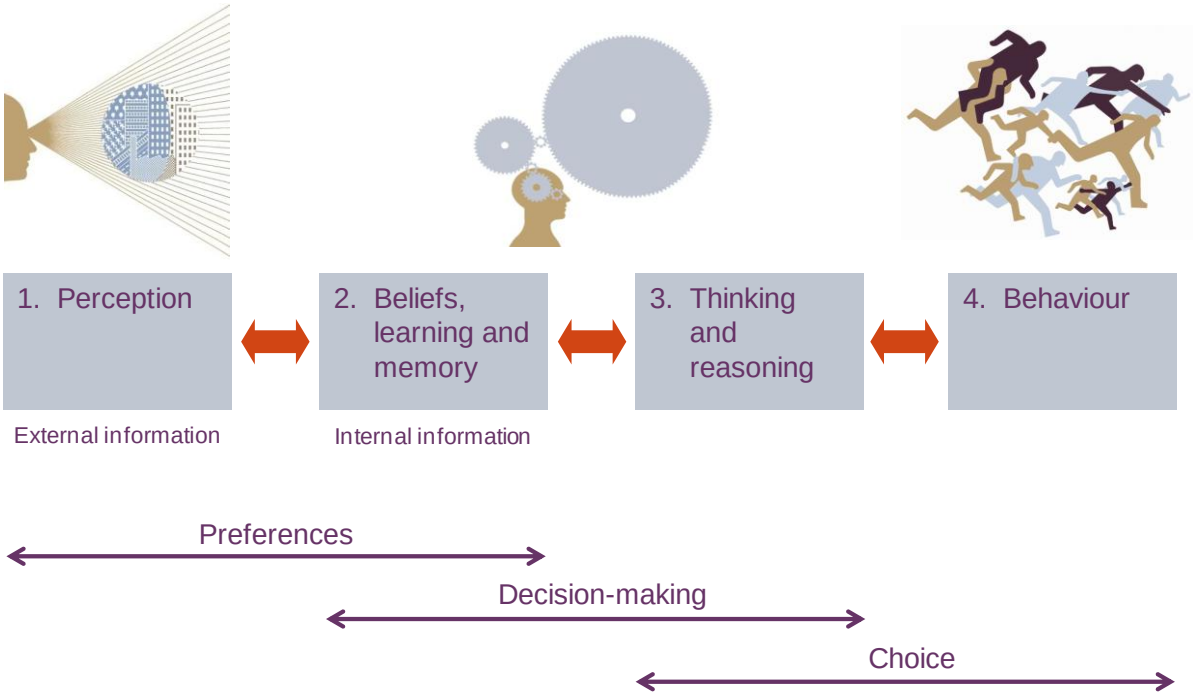
2.3 Comparing traditional and behavioural economics

The assumptions of behavioural economics differ from those of traditional economics in a number of ways. To illustrate this, it is useful to consider some of the core psychological processes involved when people make choices.

The top half of Figure 2.1 displays processes that will be familiar to psychologists: how people perceive information presented to them; how they draw on their internal information, such as beliefs, goals, and experience; how they then think about and weigh up the best course of action; and lastly, how they subsequently behave. The bottom half of the figure matches these to concepts that are familiar to economists: consumers' preferences, their decision-making process, and the choices they make in practice.

[20] For example, by incorporating search and switching costs. See section 3.2 for a discussion.

Figure 2.1 Stylised representation of cognitive and behavioural processes involved in making choices



Source: Oxera.

Working from left to right, basic traditional economic models make a number of implicit or explicit assumptions that underpin the outcomes of these models.

– **Preferences do not depend on context**. Traditional models assume that the way in which information is perceived, and someone's preferences, are not affected by the way in which information is presented or 'framed'. As long as the substance of the information is the same, the same decisions will be made. (Traditional economics does recognise that the cost of time is not zero, so search costs can be relevant.) As to beliefs and goals, consumers are interested only in maximising the value of their own absolute level of utility. Utility is unaffected by social comparisons or by concerns of fairness (although externalities can be captured in traditional models). In short, preferences are not reference-dependent.

– **Decision-making involves fully rational deliberation**. Traditional economics assumes that, when making decisions, people use all available information and that they are able to remember their past experiences in full. It is also assumed that consumers engage in rational, conscious reasoning to weigh up the best course of action.

– **Choices over time are time-consistent**. Traditional models further assume that consumers behave in a time-consistent way. Consumers do not put off making decisions that they know are in their long-term interest, and are able to resist short-term behaviours that go against their long-term interest.[21]

The above assumptions, while stringent, are often *good enough* in terms of predicting in general how people are likely to behave in response to price changes, for example. Yet there are also situations where the simplicity of the assumptions is evident to the extent that traditional economics fails to predict observed behaviour.

[21] This is not to say that deferring decisions is never rational. Real-options theory provides a rationale for deferring investment or other business decisions.

Behavioural economics adopts more specific assumptions about consumer preferences, decision-making and choice. It takes account of a cornerstone of psychology—that people rely on two cognitive systems (see Table 2.1):

– System I processing, undertaken by the older (in evolutionary terms) parts of the human brain, involves instinctive processing, rather than conscious 'thinking'. This involves 'behaviourist' responses;

– System II processing, undertaken by the 'newer' parts of the brain, facilitates conscious, rules-based processing. This involves 'cognitive' processing.

Table 2.1 Two cognitive systems

System I (automatic)	System II (reflective)
Uncontrolled	Controlled
Effortless	Effortful
Associative	Deductive
Fast	Slow
Unconscious (lack of self-awareness)	Conscious (self-aware)
Skilled (pre-learned)	Rule-following

Source: Based on Thaler and Sunstein (2008). See also the dual-process model described in Figure 1 of Kahneman (2002).

Recognising this distinction calls into question whether consumers always make conscious and fully deliberative choices. The 'choice architecture' matters, and this can be determined by a firm supplying a particular good or service to consumers. Firms can determine the substance of the information presented and how it is framed. The three most important assumptions of behavioural economics for the present purposes are as follows.

– **Preferences depend on context**. Preferences are reference-dependent, rather than being driven by absolutes alone. For example, people dislike losing what they perceive they already own (their 'endowment') more than they like making gains. The prospect of a reward of €200 may be needed in order to outweigh the prospect of a penalty of €150.[22] This is called 'loss aversion', or the 'endowment effect'. Therefore, how information is presented, or framed, to consumers in terms of gains or losses can affect their preferences. Loss aversion is driven by an automatic emotional response. Similarly, framing effects are driven heavily by system I processing, are ingrained, and, as such, can be difficult for consumers to resist or overcome. This is discussed further in section 2.4.2. In addition to being loss-averse, people care about status and fairness.

– **Decision-making involves taking shortcuts**. Conscious, fully rational, deliberation of every single decision would be exhausting to apply to all day-to-day tasks. Instead, some decisions are made purely subconsciously and automatically, given what consumers have learned, without much by way of thinking at all. This relies heavily on

[22] See Kahneman and Tversky (1984). The authors presented a large sample of physicians with two hypothetical dilemmas. In the first, 600 people are expected to die following the outbreak of a disease. Here, adopting programme A would lead to 200 lives saved, and adopting B would lead to a one-third probability that 600 lives would be saved and two-thirds probability that no lives would be saved. 72% chose programme A (the safe option), and only 28% chose programme B (the risky gamble). This might be expected for people with 'risk-averse' preferences (who prefer known outcomes to risky ones). This dilemma was then reframed: if programme C is adopted, 400 people are expected to die, whereas if D is adopted there is a one-third probability that no one will die and a two-thirds probability that 600 people will die. Here, 22% chose programme C (the safe option), while 78% chose programme D (the risky option). In fact, the two dilemmas posed are identical in terms of outcomes (outcome A = C and outcome B = D), but how the information was framed in terms of switching from gains ('saved lives') to losses ('deaths') led the physicians to reverse their choices. This reversal phenomenon breaches a fundamental assumption in traditional economics that preferences are invariant to the initial status quo endowment (preference orders should not change when the description of outcomes changes).

system I processing. In addition, between conscious and subconscious decision-making lies a series of shortcuts known as 'heuristics'. For example, individuals may make quick decisions based on a selection of the information provided in the marketplace, their memories of recent experiences, looking to what others are doing, or focusing on what they think are salient aspects of the information. Heuristics saves a lot of time and effort, in particular when dealing with complex problems, but can be imperfect and open to exploitation by firms. This is discussed further in section 2.4.3.

– **Choices over time can be time-inconsistent**. Consumers can face a conflict between their short-term urges (system I processing) and what would be best for them in the long term (system II processing). In economics terminology, their preferences can be 'present-biased' or 'time-inconsistent' relative to what traditional economics would predict. As the time for action draws nearer, optimal plans can be put off. This is discussed further in section 2.4.4.

2.4 What types of consumer bias can arise?

2.4.1 From cognitive processes and decisions to biases

The above factors simply reflect reality in terms of how people think and behave. This does not mean that consumers necessarily suffer from bias—the term 'bias' should in any event be used with caution (see Box 2.1). What it does mean, however, is that consumers can be subject to systematic departures from rational behaviour that can lead to systematic 'errors', which, moreover, firms may then exploit. Different authors categorise differently the types of bias that can arise; for simplicity, Oxera relates them here to the three-part distinction presented in section 2.3 above.

Box 2.1 Use of the term 'bias'

As noted in section 1, care should be taken in using the terms 'consumer bias', 'irrational consumers' and 'errors in consumer decision-making', which are often used in the literature. Humans' cognitive and behavioural characteristics that are the subject matter of psychology and behavioural economics simply exist, and as such cannot be judged to be erroneous or otherwise.

From a scientific standpoint, the term 'bias' is simply a deviation from the norm or from some standard model. It does not mean negative or bad. However, the term has an alternative meaning in the English language: to adopt a viewpoint that is not objective, and which is therefore vulnerable to being wrong. This report refers to the term 'bias' in the former sense, not the latter. This is arguably how economists should approach the term. Whether consumer attributes are right or wrong is more of a philosophical issue.

The biases discussed in this report, in the sense of processes adopted, include loss aversion, use of heuristics, and time-inconsistency. However, what matters most to economists and policy-makers are the outcomes. Therefore, from an objective standpoint, this report refers to consumer biases in the sense that not only are there deviations from the traditional models as a matter of process, but this also changes actual consumer behaviour and hence market outcomes.

The same applies in relation to rationality: it is often rational for consumers to rely on heuristics in order to make quick and (for the most part) appropriate decisions, rather than tiring themselves out by exploring every conceivable angle before buying something. Therefore, while consumers who use heuristics are not fully rational in the sense of the traditional models, as a matter of process they are operating rationally by adopting shortcuts. In any case, the outcome may be the same (or observationally equivalent) to that predicted by traditional models.

2.4.2 The way information is presented and framed can help firms to exploit consumers

Section 2.3 noted that consumer perception is, in practice, dependent on context. The way in which information is framed can affect a consumer's preferences in relation to the options available. In turn, this can lead to consumer biases.

Framing can influence consumer behaviour in the following ways.

– **Attribute framing**. Consumers can react differently depending on how a product's attributes are described—for example, whether a fee is expressed in percentage terms or in absolute terms. An administrative tax of 2.5% may be considered better value than a charge of €100, even if the two are in effect the same. Attributes can also have loaded meanings. Charges that appear to be externally imposed may be treated differently (on fairness grounds) from those that appear to have been imposed by the vendor. Likewise, if a product is described as being 'free of charge', this can elicit a positive emotional response.

– **Anchoring effects**. Anchoring is a particular framing effect in which consumers' preferences, and hence their appraisal of different available options, is affected by what is presented as an initial reference point or 'anchor'. Anchoring can influence consumer perceptions even when the initial anchor is arbitrary or irrelevant. For example, if a bottle of wine is initially priced at €10 and then reduced to €5, consumers may perceive that they are getting a better deal than if the wine were offered at €5 in the first instance. Consumers may also perceive an option at the top of a price-comparison website list as being better value than one towards the bottom, even when there is no real difference between the two.[23]

– **Salience effects**. Faced with complex information, consumers may use as a reference point what they perceive to be the most salient information available. They may focus on upfront prices and ignore add-on fees; they may compare some features of a product and ignore other important features (eg, looking at the megapixel capabilities of digital cameras, but not the viewer size); and they may place weight on the fees charged (eg, by pension providers) rather than on prospective returns. Some of these are pure framing effects, while others also concern the substance of the information provided (and relate more to decision-making).

– **The endowment effect**. Because consumers are often loss-averse (the endowment effect), the way in which they respond to information can depend on the initial reference (anchor) point, and on whether subsequent deviations from this reference point are presented in terms of gains or losses. Consumers may place a higher value on what they already perceive to have purchased than on what they have yet to purchase—in other words, they value the same product more highly if they already own it than if they do not yet own it. The endowment effect can lead to status quo bias[24]—ie, making a decision and not changing one's mind if there is the prospect of loss. This is an important potential source of consumer inertia.

– **Mental accounting**. Coined by Thaler (1985), this term describes how people think differently when money comes from different sources or is allocated to different 'accounts'. For example, people may think differently according to whether they use a credit card or cash. If they pay for a meal by credit card, they may spend more than if they use cash. Such mental accounting breaches the standard economic principle of fungibility of money (ie, a particular amount of money is the same regardless of what it is used for or how it is paid).

2.4.3 Instinct and heuristics can result in sub-optimal decisions

While heuristics may provide a useful shortcut to making quick decisions, and is often 'rational' under the circumstances, it can also lead to sub-optimal outcomes. In consumer markets, errors can be made in the calculations of prices, product attributes, probabilities and payoffs, which in turn can be exploited through framing and the substance of the information provided.

[23] Armstrong (2008). This example and that of the wine bottle illustrate that, while behavioural economics has now provided a deeper and more structured insight into consumer behaviour, such behaviour has been known to marketing professionals for decades.
[24] A term coined in Samuelson and Zeckhauser (1988).

– **Availability effect and salience**. Consumers may suffer from 'availability biases', whereby they judge the probability of an event occurring according to how easily the outcome can be recalled from their own recent experience, current publicised events, or how easily the event can be imagined. Since consumers may place a disproportionate emphasis on information that is most salient to them, they may overestimate the likelihood of recurrence of events that have occurred to them recently, that have been publicised on the news, or that are particularly memorable. Examples include dividend payouts and insurance claims.

– **Representativeness bias**. Many questions require people to rely on the 'representativeness heuristic', where the problem at hand, A, tends to be evaluated by how closely it seems to resemble something that looks like B. This can lead to miscalculations. What consumers may think is the right way of calculating price or comparing between products may not be the correct approach for the problem at hand.[25] This type of bias can also affect consumers' abilities to forecast probabilities, or to distinguish between random and non-random events.

– **People may be prone to optimism bias**. Consumers may not be good at assessing the probability of particularly unlikely events—for example, over-predicting their chances of winning the lottery.[26]

– **People may be prone to confirmation bias**. They may selectively remember recent positive experiences and forget bad experiences, which may lead them to conclude that they generally get things right. People may associate a good outcome with their own behaviour, action or skills when, in reality, they had little to do with the outcome—they can be 'fooled by randomness' (Taleb 2005).

– **People may follow the herd**. This may save on search costs in terms of cognitive effort, time and money, and may be a rational strategy in a number of situations. However, it can also lead to negative consequences if people use others' behaviour as a rule of thumb for the correct course of action when, in reality, others are making mistakes.

In addition, a point is worth making on information overload. Too much information may be just as bad as too little. Presented with too much information, people may decide not to decide. For example, if only three types of pension plan are offered, consumers may make a purchase (they can select the most attractive), but may fail to make a purchase at all if they have a choice of 20 alternative plans.

This point is about the substance of the information provided (in particular, disclosure), as much as it is about how the information is framed. Notably, information overload makes both perception and consciously processing options difficult. Instinct, using system I processing, may simply be to adopt the line of least resistance and to procrastinate. Alternatively, consumers may simply select the default or recommended option.

2.4.4 Difficulties in making decisions between the present and future can hinder consumers

Psychology shows that people can have difficulty in making decisions between the present and future—they can be short-sighted in these situations. It may therefore not be possible to rely fully on consumers' self-interest to lead them to the best choices over time. Two reasons have been given for this.[27]

[25] A common illustrative example is as follows: 'a bat and a ball together cost €110. The bat costs €100 more than the ball. How much is the ball?' With some time to think, the reader will work out that the answer is €5, but heuristics—in this case the shortcut for working out a price difference—may suggest €10.
[26] This is not to say that playing the lottery is irrational. People can get satisfaction from playing itself, even if they realise that the chances of winning are very low.
[27] For examples of these effects, see Laibson (2010).

– **People may hold mistaken beliefs today about what they will need in the future**. For example, they might not think that they need to save for their retirement. This is driven by the factors discussed above, which may affect people's ability to make good choices: framing can affect preferences, and complexity and information overload may make it difficult to process the substance of the information.

– **Even if people do know what is in their future interest, they may not act on this knowledge**. This is the present-biased or time-inconsistent behaviour referred to in section 2.3, whereby optimal plans are put off. It is often modelled using a 'hyperbolic discounting' schedule.[28]

Time-inconsistency, like the endowment effect, can lead to inertia. Consumers may be unwilling to engage in searching even if they know it is in their interest to do so. A consumer may be unwilling to switch their existing mortgage provider if they perceive that doing so would incur potential costs in future (both tangible and hassle costs), but they may also procrastinate due to time-inconsistency (system II processing says 'must search tomorrow'; when tomorrow comes, system I processing says 'don't bother today').

A familiar empirical example of time-inconsistency is that of gym membership, as discussed in Della Vigna and Malmendier (2006). The authors show how consumers who pay upfront membership fees for gym membership, given their subsequent usage, can pay significantly more than if they had simply paid per visit.[29] This suggests that people treat gym membership as a form of commitment, with the intention to go to the gym regularly and get value for money. Once this amount is paid, and the time comes nearer to go to the gym, they fail to do so. The authors explain this through overconfidence, hyperbolic discounting, and non-cancellation owing to inertia.

It is nevertheless possible for consumers to recognise that they suffer from such biases and to adopt pre-commitment strategies that inhibit their desires for immediate gratification at the point in time when they become vulnerable to them. In the above example, those paying upfront for gym membership who subsequently could have paid less had they simply turned up on the day may not have gone to the gym at all had they not pre-committed themselves.

2.5 Why are these biases relevant in financial services?

2.5.1 How are financial services different?

Compared with other goods and services, retail financial services products can be particularly complex and can involve decision-making over long timescales. Many of these products have a number of the following features.

– They are **abstract** and **non-tangible**, at least when compared with many other more visible goods and services. A pension plan, as set out in a detailed information pack, is much more abstract than a piece of furniture or a bus journey.[30]

– They can be **information-heavy** and **complex**. Financial services products can have multiple attributes and price points. For example, an insurance contract can run to several pages. Different insurance policies may have different levels of cover, exclusions, add-ons, and so on. The vendor has control over how this information is presented, and can change the various attributes at fairly low cost. Framing of information and salience anchoring matters here—eg, the salience of the annual percentage rate (APR) of a loan product versus the add-on fee. Consumers may be attracted by the rewards of a particular current account as these often have salient

[28] Under hyperbolic discounting, valuations fall quickly for short delay periods, but then fall slowly for longer delay periods.
[29] In this study the average cost of gym membership was found to be $75 per month, and the average number of visits four per month, thus effectively costing almost $19 a visit. The pay-per-visit charge was $10 per session.
[30] Gilbert (2006) points out that objects we can see come to mind more readily since they activate the visual cortex (the part of the brain responsible for processing visual information).

features to which a consumer can relate, as opposed to other features such as overdraft fees, which may not be as salient (or may seem less relevant). Moreover, a lack of financial literacy can harm consumers' ability to make sound financial decisions.[31]

– They can involve money spent now in return for **prospective gains** in the (distant and contingent) future, with some element of **risk**. Pensions and savings are a good example of where consumers' ability and inclination to make a choice now about something that will not affect them until sometime in the future are important.

– They can be **experience goods**, which cannot be tested before purchase. Consumers will only discover how good their holiday insurance cover is if they have an accident abroad, or how good their motor insurance is if they are involved in a car accident.

– They can involve **non-repeat** or **infrequent purchasing**. Once a product has been purchased, consumers may not reappraise whether the product suits their needs. There is no learning by doing in making purchases (unlike products that consumers purchase regularly, such as groceries).

– They may involve some form of **external financial advice**. Decisions on pensions, share investments, mortgages and life assurance can involve advice from a trusted third party. This brings to the fore the role of information framing, trust and disclosure.

– The **financial consequences** of buying the wrong product (or not buying the right product, or any product) can be serious. Purchasing the wrong loaf of bread or eating at a mediocre restaurant is unlikely to harm consumers in the long run. The financial consequences of purchasing the wrong pension (or no pension at all) can be significant. It may be a long time before the consumer becomes aware of any faults or mis-selling, or of the consequences of not being protected.

Nevertheless, for the purpose of this report, the following should also be borne in mind.

– Most of the aforementioned features are not unique to financial services products, but many financial services products exhibit a combination of these features—which in itself is quite unique. Energy supply contracts, gym memberships, supermarket shopping and many other products and purchasing situations are influenced by consumers' cognitive characteristics.

– Various financial services products can be much like other non-financial services products—for example, car insurance and home contents insurance are not necessarily complicated products, are bought (or renewed) each year, and do not typically involve third-party advice.

– Even in areas where financial services are different to other products, effective financial services regulation (from both a prudential regulation and a consumer-protection standpoint) can result in markets functioning well. Market-driven responses, such as voluntary information disclosure or information provision by independent advisers, may also enhance efficiency.

2.5.2 What is the evidence on consumer biases in financial services?

There is now a large body of empirical evidence on behavioural biases in financial services consumers. The majority is from the USA, but new studies have also been commissioned in Europe and elsewhere. Much of the latest evidence uses laboratory experiments to test

[31] For example, Franses and Versendaal (2012) undertook a survey in the Netherlands to assess the effectiveness of campaigns aimed at increasing consumer awareness of financial products. Those surveyed were asked to select a financial product while the information at their disposal was varied: negative returns were either explicitly revealed or concealed by 'N/A'. It was concluded that those surveyed were more likely to select riskier financial products when the information about negative returns was hidden. This conclusion suggests that people's choice for financial products can be manipulated.

consumers' reactions to different choice frames. These involve a controlled setting, and financial rewards to participants. (The potential for using experiments in competition law is discussed in section 4.4.)

Evidence on biases in general

By way of a recent example, the European Commission, following concerns raised in its annual Consumer Markets Scoreboard,[32] requested a study to be undertaken on the behavioural economics of consumer decision-making in retail financial services, the main findings of which are summarised in Box 2.2 below. The study by Chater, Huck and Inderst (2010) examined the theoretical and empirical evidence to date, undertook surveys to understand consumer experiences, and set out the results of laboratory experiments. It noted that:

> The financial environment has evolved so much that consumers are often ill-prepared to make sound decisions about increasingly complex retail financial products. The inability to benefit fully from this market is in part due to limited financial literacy or asymmetric information, but it may also be directly related to instincts driving consumers towards choices which are inconsistent with their long-term preferences. Recent evidence shows that consumers often have limited time to fully understand complex retail financial products. Herding instincts and over-reliance on experts' advice may also limit rational reflection.

Box 2.2 EU study of consumer decisions in financial services

The authors surveyed 6,000 consumers across eight EU Member States to gauge the decision-making processes of both recent purchasers and non-purchasers of retail investment products. The survey found that:

- **consumers are often confused about the risks of their investment**—in particular, in the case of pensions, whether they are exposed to the risks of the stock market;
- **information searching is limited**—only around 33% of purchasers compared investments from more than one provider or considered more than one product from a single provider;
- **advice is prevalent in the retail investment market**—nearly 80% of investments are made in a face-to-face setting, usually with the investment provider or a financial adviser. 58% of investors say their final choice of product was influenced by an adviser, while the adviser initiated the purchase on a quarter of occasions;
- **trust in advisers is high, but consumers are often unaware of potential conflicts of interest**—the majority of investors do not perceive their adviser to be biased, and trust the advice they receive. Conflicts of interest are often disclosed verbally only, if at all, and most investors disregard the information in any case.

Based on these initial results, the authors undertook some economic experiments to explore the degree to which consumer choices in financial services in general are influenced by behavioural biases. Key findings were:

- **people struggle to make optimal investment choices, even in simplified investment tasks**—only 56% of funds were invested optimally;
- **investment decisions are prone to framing effects and biases**—those surveyed made poorer choices when the optimal choice was harder to understand (eg, fees framed as percentages). They were disproportionately averse to uncertainty (risky investments), ambiguity (incomplete information) and product complexity;
- **simplifying and standardising product information improves investment decisions**—standardising and reducing the amount of information helped consumers to make an optimal choice between similar investments.

The authors also explored biases arising in contexts in which financial advice is provided. Advisers tend to be paid for their services through commissions provided by suppliers of financial products,

[32] The 2010 Scoreboard revealed apparent problems in the functioning of retail financial service markets. It showed that the market for investments, pensions and securities ranked the lowest of 50 consumer markets on a number of indicators, including overall market performance, ease of making comparisons between different providers, and customer satisfaction.

which can generate conflicts of interest. The experiments explored the impact of disclosing conflicts of interest, with the following important findings:

- **the impact of disclosing conflicts of interest is context-dependent**—distant online subjects responded little to disclosure. People surveyed within laboratory settings exhibited a strong reaction to the disclosure of biased incentives, showing mistrust of advice;
- **full and transparent disclosure may be necessary**—those surveyed online, who were informed that their adviser was paid a commission, did not react to this disclosure unless it was accompanied by a 'health warning'. Those surveyed within laboratory settings, who were told the exact details of their adviser's remuneration structure, responded without such a warning;
- **disclosing conflicts of interest elicits a knee-jerk reaction (ie, system I processing) that can be harmful as well as helpful**—disclosure led to better decisions when the interests of the adviser and the person being advised were adversely aligned to be begin with, but led to loss of trust and worse outcomes for the consumer when their interests had previously been aligned;
- **rather than requiring disclosure, consumers may pay an upfront fee for financial advice, but this has its own problems**—a significant minority of people (20–30%) who are particularly loss-averse may be disproportionately averse to paying an upfront fee for advice.

Source: Chater, Huck and Inderst (2010).

Role of financial advice

Using an economic experiment, the US Federal Trade Commission explored the impact of mortgage brokers disclosing to prospective consumers the commissions that the brokers received for arranging a loan with a particular provider (Federal Trade Commission 2004). It found that consumers treated the commission information as particularly salient. They placed too much emphasis on the commission, and too little on whether the loan was keenly priced. Consumers paid more for their loans than they would have without the commission information. This also created a bias against broker-arranged loans, even when the broker loans cost the same or less than the direct-lender loans. By placing brokers at a disadvantage to direct lenders, this could generate less competition and higher costs for all mortgage customers.

Role of financial education

Traditional economics would say that more financial education would help consumers to avoid the information and complexity pitfalls. Behavioural economics has shown that financial education, either for less educated individuals or more generally across the population, has its limitations.

The UK Financial Services Authority (FSA) commissioned a study to analyse what drives people's 'financial capability'—ie, their ability to make sound financial decisions (Financial Services Authority 2008).[33] It found that this involves key knowledge and skills, but also that psychological traits seemed to be more important than informational differences in determining differences in abilities. Psychological biases, such as procrastination, loss aversion, status quo bias and information overload, dominated in affecting people's decisions. The empirical findings also showed that financial education programmes had few major lasting effects on knowledge or behaviour. In combination, this called into question the effectiveness of the (then) strategy to increase financial capability through an education-based approach, as opposed to interventions that seek to take account of people's biases.

Pre-commitment

Behshears et al. (2011) show that people often want to tie their hands (pre-commit) when offered a savings product that enables them to do this. In their study, more people opted for a 'commitment' account, which had penalties for early withdrawal, than for a similar account with more flexibility. One would have expected that time-consistent people would opt for an account providing more liquidity if they receive the same, high, return on that account.[34] This

[33] In April 2013, the FSA was replaced by the Financial Conduct Authority and the Prudential Regulation Authority.
[34] If the return on the account with penalties is higher, it is rational to choose such an account.

shows that people can be aware, to some degree, of their time-inconsistency bias, and that commitment devices can work if appropriately designed.

Effect of default options

Laibson (2010), among other authors, plays down the role of financial education as a solution, and instead highlights that a main way of dealing with consumer biases is to employ 'default options'. Much of this work involved examining why individuals do not make choices that are in their long-term interests, such as opting into low-cost savings plans and pension schemes. This work identified that such behaviour is driven not so much by people holding mistaken beliefs about what is in their long-term interests ('I don't need to save for retirement'), but by time-inconsistency and the accompanied procrastination ('I'll enrol in a retirement plan next month').

In the USA, although there are clear benefits for employees to enrol in a 401(k) retirement savings plan, including tax advantages and other benefits, participation in this scheme for new starters at US firms had been low historically. Using a sample of firms, with default non-enrolment, after one year of tenure, 40% of employees signed up to the scheme. Consumer education (or lack thereof) did not appear to be the barrier. Indeed, in the context of this scheme, even when prospective participants attended a seminar during which the scheme was described to them in intuitive terms, the effect on participation was positive but small.

Laibson (2010) illustrates that, to overcome this, the use of defaults can be powerful. When enrolment was made simpler for potential participants, it typically increased to 50%; when employees were required to make an active choice to opt in or out, enrolment increased to 70%; and when employees were defaulted into the scheme but could choose to opt out, participation typically increased to around 90%. Very few people chose to opt out.[35] Laibson recommends that policy-makers should always run small-scale experiments before designing policy interventions in areas where people are affected by social norms, rather than relying on pre-held theories or intuition about how people behave.

Hence framing through defaults, in a way that overcomes the endowment effect, and which appeals to social norms, matters. Such interventions are known as soft or liberal paternalism, in which choice for the individual is not necessarily compromised (under default opt-in or active choice, consumers can still choose not to participate)—see also section 5.

2.6 A short description of firm biases

Much of modern psychology literature focuses on the behaviour of individuals, which explains why this is the main focus of much of the behavioural economics literature. Organisational psychology is a strand of psychology that looks at how firms function as collections of individuals within an organisation.[36] There is also an earlier body of literature on the behavioural theory of the firm, stemming from the 1950s and 1960s, which questioned whether firms were profit-maximisers with perfect knowledge.[37]

The question is whether the biases faced by firms materially affect market outcomes. As a starting point, it would be expected that firms do not suffer from biases to the same extent as individual consumers. This is because firms would be expected to focus more objectively on their profit (the bottom line) in making decisions. They have the resources and capacity to devote more time and effort to selecting the right suppliers to buy from. Firms may actively research which markets they will seek to enter, and how much they will charge for their products. Managers must answer to their board and shareholders when they make mistakes (a subject matter of traditional principal–agent theory). Firms interact with the market at

[35] Benartzi and Thaler (2007) also show how default-ins work in pensions savings plans in the USA.
[36] See Borman, Ilgen and Klimoski (2003); and Anderson et al. (2002).
[37] See, for example, Cyert and March (1963).

regular intervals, collect data on their performance over time, and may have better scope for learning.

Armstrong and Huck (2010) surveyed the literature on firm biases. They start with a quote from Milton Friedman (1953, p. 13), who argued that, even if firms were not fully rational, this may not matter because competition still acts as a discipline on firms to maximise their profits:

> Let the apparent determinant of business behaviour be anything at all—habitual reaction, random chance or whatnot. Whenever this determinant happens to lead to behaviour consistent with rational and informed maximization of returns, the business will prosper and acquire resources with which to expand; whenever it does not, the business will tend to lose resources and can be kept in existence only by the addition of resources from outside. The process of 'natural selection' helps to validate the hypothesis [of 'rational and informed maximization of returns']—or, rather, given natural selection, acceptance of the hypothesis can be based largely on the judgement that it summarizes appropriately the conditions for survival.

Armstrong and Huck (2010) present some evidence—both real-world and experimental—that firms (or experimental subjects playing the role of firms) can depart from the profit-maximising paradigm in the long run.

– **Objectives**—firms may be content to achieve satisfactory rather than optimal profits; managers may face incentives to care about relative rather than absolute profits (eg, market shares); firms might punish rivals who behave 'unfairly' towards them; and firms may base pricing decisions on sunk costs as well as avoidable costs.

– **Decision-making (heuristics)**—firms typically operate within a highly complex and uncertain environment, and need to consider not only their own but also their rivals' strategy. They often resort to decision-making shortcuts. Firms might rely on simple rules of thumb—imitating the strategies of well-performing rivals, or changing strategies only when profit falls below some acceptable threshold—rather than on full calculation of complex optimal strategies.

– **Optimism bias**—chief executive officers (CEOs) and other managers may be overoptimistic about the actions that they undertake (eg, strategy, mergers and projects).

– **Influence of personality**—group decision-making could introduce extra biases, and leave managers free to pursue their own (more personal) objectives, which may differ from maximising shareholder value.

– **The effect of biases on market outcomes**—if the market is imperfectly competitive, it is not always the case that the profit-maximising firms outperform 'biased' firms. Paradoxically, firms' profits may be enhanced by hiring managers whose objectives differ from profit maximisation (eg, in hiring an aggressive or overoptimistic CEO, or by rewarding a CEO based on their performance relative to peers).

A main message from the behavioural economics literature on firm biases is that it is still a new area and makes less forthright predictions than the literature on consumer biases. What it does suggest, however, is that it can sometimes be useful to explore what drives firms' behaviour in practice, how they make decisions, and how these factors determine success or failure in the market in question.

Section 3 discusses the implications of behavioural economics for competition and market outcomes, again primarily from the perspective of consumers' cognitive and behavioural processes (and how these interact with firms' actions). The literature on firm biases might in future contribute more to the analysis of market outcomes, but further theoretical and empirical research would be required.

3 Implications of behavioural economics for competition and market outcomes

Section 2 showed that consumers of financial services and other products can be subject to biases due to framing effects, limits on decision-making ability, and time-inconsistency. The current section discusses the implications of consumers' cognitive and behavioural processes for competition and market outcomes. It focuses on those effects on market outcomes that are of most relevance to competition law and policy. There is a broader, nascent literature—not explored here—on how behavioural economics may influence the main market models used in the IO literature (as also noted in section 1).[38]

This section is structured as follows:

– what does behavioural economics have to say about demand and supply interactions? (section 3.1)
– how can firms exploit consumer biases by introducing pricing frames and complexity? (section 3.2)
– what are the implications for market power—a central concept in competition law and policy—and the scope for consumers and competitors to discipline market power? (section 3.3)
– section 3.4 concludes.

3.1 Demand- and supply-side interactions

Behavioural economics demonstrates that consumers are sensitive to the way in which information is framed and have limits to their decision-making ability, and that this has implications for their preferences, decisions and behaviour. In turn, the way in which firms on the supply side present their offerings to consumers can affect market outcomes. Importantly, firms may have an incentive to exploit or exacerbate consumer biases systematically.

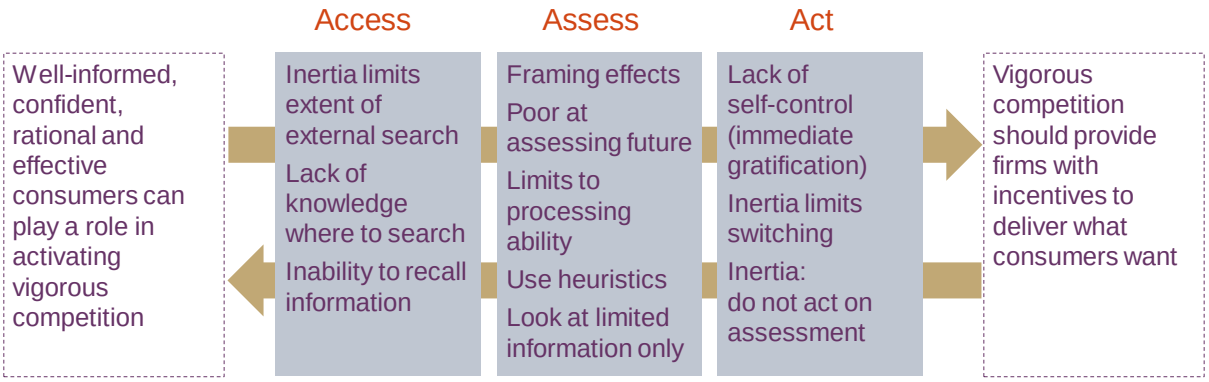
A recent study by the OFT sets out a useful framework which shows how consumers interact with the supply side in three stages. In well-functioning markets, consumers:

– **access** information about the various offers available in the market;
– **assess** these offers in a well-reasoned way;
– **act** on this information and analysis by purchasing the product or service that offers the best value.[39]

Figure 3.1 illustrates how, at each stage, consumers' cognitive processes and bounded rationality might hinder the virtuous circle between the demand side and supply side that exists in well-functioning markets.

[38] A leading recent contribution to this literature is Spiegler (2011).
[39] Office of Fair Trading (2010a), p. 9.

Figure 3.1 Interactions between demand and supply: where the virtuous circle may break down



Source: Office of Fair Trading (2010c). This figure is available in several OFT presentations, and a condensed version is provided in Office of Fair Trading (2010a).

The behavioural economics literature has shown that firms on the supply side may go a step further and seek to take advantage of consumer biases in each of the three stages.

– **Accessing information**—firms can make it more difficult for consumers to perform searches. Because consumers do not always look at pricing terms that are not provided upfront, firms may exploit this by putting more of the price into add-on services, adding clauses, or making searching harder using drip pricing.

– **Assessing offers**—firms can make it more difficult for consumers to assess the best deal. As consumers can find it difficult to compare differently structured offers, firms may exploit this by making their prices less clear, increasing the number of options, or raising the degree of complexity. They may also use price promotions ('was x/now y' pricing) and framing to distort decision-making.

– **Acting on information and analysis**—firms can make it more difficult for consumers to act to get the best deals. Consumers may display more inertia than traditionally thought, perhaps due to overconfidence in their capacity to improve their situation at a later time. Firms, knowing this, may raise switching costs, for example by requiring existing customers to use registered post to cancel, using defaults and automatic renewals, or using time-limited offers.

Evidence from field and laboratory experiments shows that certain of these forms of conduct can harm consumers. The remainder of this section discusses how these demand and supply interactions affect competition and market outcomes. What this means for competition cases is explored in section 4.

3.2 Firms' actions to raise search and switching costs through pricing frames and complexity

3.2.1 Search costs and product differentiation in IO and behavioural economics

The notion that firms may introduce search costs, switching costs and product differentiation (whether real or artificial) to soften price competition and raise prices is not new in economics—indeed, it is a staple of the modern IO literature (see Box 3.1 below).

Box 3.1 Search and switching costs and product differentiation in the IO literature

The idea that firms seek to limit the degree of comparability between their own products and those of competitors is not new to economics. Much of modern IO theory builds on this to get away from the 'Bertrand paradox', which predicts that a market with as few as two firms, each selling identical products, and which compete on price, produce a competitive outcome. Search costs, switching costs and product differentiation, or some combination of these, are a means for firms to avoid head-to-head price competition.

Diamond (1971) presents an extreme example, in which low (but non-zero) search costs mean that consumers simply choose between firms at random, and each firm can charge monopoly prices. Known as the 'Diamond paradox', it is a search model *without* any search, as consumers, correctly, do not expect to get a better deal from searching. Anderson and Renault (1999) describe a model of monopolistic competition that seeks to escape from the the Diamond paradox. Their approach separates out the issues of search costs and product differentiation. They found that, as long as there is some product differentiation, consumers do undertake searching. Market prices are higher when the search costs are high and fall as the number of firms increases.

Salop (1979) describes a different model involving horizontal product differentiation. The model is in essence a more complete exposition of Hotelling's much earlier 1929 linear city model of product differentiation (Hotelling 1929). Here differentiation is described as consumers who are at different fixed locations (or have different tastes), who then face transport costs for travelling to alternative firms not in their locality (or, by analogy, a psychological cost of not getting the product they prefer). Firms then need to choose whether to enter the market, for a given fixed entry cost, and where to locate along this taste spectrum. They then set prices.

In this model, prices are higher when transport costs are high, there are only a few firms, the market is smaller, and the fixed entry costs are high. However, given that there are fixed entry costs, more firms can actually enter and coexist in the market, not just when the market is larger (more firms can fit into the circle), but—and more problematically—when transport costs are high. The intuition behind this latter result is simple. Product differentiation is used by firms to soften head-to-head price competition. This enables more firms to survive in the market than would if they had competed more intensively on price. Klemperer (1987) also describes how goods that are not differentiated at the initial purchase stage, but for which there are switching costs later (a form of 'artificial' product differentiation), can also soften price competition, thereby increasing firm profits.

The value of behavioural economics beyond the existing IO literature is that it can cast additional light on what drives search costs and switching costs, and on how product differentiation affects consumer behaviour, in each of the access, assess and act stages (the ability and inclination to search, compare products, and seek out better deals). It can then provide insight into how firms might be able to exploit consumer biases.

For example, in the context of Salop's model described in Box 3.1, facilitating entry by more firms may be of little help in reducing consumer prices if, at the same time, transport costs (somehow) increase. What Salop did not model endogenously is how these transport costs might increase. This is now being addressed by the behavioural economics literature on pricing and product obfuscation. Whereas, in Salop's model, increasing the number of firms, holding everything else constant, reduces prices, the behavioural economics literature illustrates how firms may then also raise transport costs in order to stay in the market in equilibrium.

In the main IO models, in most situations where firms have overcome the 'Bertrand paradox', having more firms in the market leads to greater head-to-head competition, thereby lowering prices for consumers. Behavioural economics suggests that this is not always the case—see section 3.3. As noted in section 1, there is still substantial debate as to the relative merits of these various theoretical approaches, in terms of both their academic contribution and policy relevance.[40]

[40] In his recent textbook drawing together many strands of the behavioural economics and IO literature, Spiegler (2011) argues that the burden of proof should be not only on the bounded rationality literature to demonstrate why its predictions are better

3.2.2 Pricing frames matter

There is now quite a large body of experimental field evidence showing that pricing frames matter. Morwitz et al. (2009), through a literature review and analysis, examine the impact of various forms of partitioned pricing. Hossain and Morgan (2006) study eBay auctions of CDs, and find that auctions with lower opening-bid reserve prices but higher shipping charges attract more bidders and more revenues than those with higher opening-bid prices and lower shipping charges. This suggests that, in making their bids, potential bidders focus more on the reserve price as salient, and less on the add-on price. Clark and Sidne (2008) also find that bidders in online auctions tend not to process shipping charge information fully, allowing sellers to generate higher revenues using partitioned pricing.

Kim and Kachersky (2006) provide psychological explanations for these types of finding, noting how perception and computation may be affected by the characteristics of the partitioned price. The size of the main price relative to the add-on price, and the degree to which the surcharge language conveys that the add-on is within or outside the company's control (eg, 'tax', 'fee', 'additional charge'), both matter. Ott and Andrus (2000) find that consumers treat expenses that are presented as being beyond the control of the firm more forgivingly than other add-ons. Morwitz et al. (1998) note that consumer behaviour also depends on whether a surcharge is expressed as a percentage or a monetary amount.

The above discussion suggests that firms can have an incentive to engage in these practices in order to take advantage of consumers. An experimental study commissioned by the OFT from London Economics (2010) explored how various pricing practices used by firms can influence consumer behaviour. The study used a controlled experiment to test five pricing frames, whereby the true price is provided in a complex way: drip pricing, 'sales', complex pricing, bait pricing, and time-limited offers. The study found that all of these pricing practices have some adverse effect on consumer choice and that most of them do significantly impair consumer welfare.

Drip pricing (a form of partitioned pricing) is particularly interesting. This experimental analysis identifies this as a profitable strategy that may harm consumers. The endowment effect and mental accounting seem to be involved here: having engaged in the buying process, people's point of reference (the anchor) shifts and they feel that they already own the product, so they are more inclined to pay not to lose it. Box 3.2 provides more detail of this study.

Box 3.2 Price framing and non-optimal outcomes for consumers

London Economics (2010) used controlled economic experiments to analyse whether the way in which prices are presented or 'framed' to consumers has an effect on consumer decision-making and welfare. The study combined a baseline treatment, with prices expressed simply as a unit price, with various forms of pricing frames:

- **drip pricing**, where consumers see only part of the full price upfront, and price increments are dripped through during the buying process;
- **sales**, in which a sale price is given and a pre-sale price is also given as a reference to the consumer, 'was €2, is now €1' (actual prices are identical to the baseline treatment);
- **complex pricing**, where the unit price requires some computations, such as '3 for the price of 2';
- **baiting**, in which sellers may promote a special price, but only a limited number of the good is actually available at that price;
- **time-limited offers**, where the special price is available for a predefined short period of time.

The construct of the experiment was that participants (consumers) were given the choice of purchasing from one of two shops with different prices, in order to buy up to four units of a particular good. The only way of seeing the prices offered by either shop is to travel to it, thus incurring a

than those of the 'standard model', but also on the advocates of augmented variants of the standard model (ie, where elements of behavioural economics are added to the standard model) to demonstrate why the assumptions and predictions of these augmented variants remain valid for understanding complex product environments.

search (travel) cost. If the consumer starts at shop 1 and perceives the price to be high, and thinks that shop 2 might be cheaper, they could travel to shop 2. This would incur additional search costs, but the consumer could travel back to shop 1 if shop 2 turned out to have higher (perceived) prices.

For the various experiments, different combinations of price frames were used in shops 1 and 2 in order to explore how consumers' perceptions of price at the first shop they visited were influenced by framing, and, on this basis, whether they then purchased from the shop concerned or sought better deals elsewhere. For example, in the drip pricing frame, consumers at shop 1 would see only the baseline price but, on purchasing, would face add-on fees; alternatively, in the time-limited offer frame, they would see an offer with the heading 'only available this visit'.

The study found that frames do matter, and that consumers make more mistakes, and pay more on average, under pricing frames than under the baseline of simple unit pricing. In all scenarios except the sales frame, the first shop benefited from increased sales. Drip pricing and time-limited offers led to the most mistakes in purchasing (quantity) decisions and in searching, compared with optimal consumer behaviour, and to the largest welfare losses. In particular, under these pricing frames consumers tended to make purchases at the first shop when the prices were too high, rather than incurring search costs to explore the offerings of the alternative shop. Search errors decreased as search costs increased, since higher search costs mean that purchasing from the first shop is indeed more likely to be optimal.

The authors attribute the drip-pricing effect to anchoring and the endowment effect: if a consumer sees a low base price and decides to buy the good, they shift their reference point since they imagine that they already own the good. When they later realise that there are additional charges, loss aversion/the endowment effect means that they are less willing to give up the good, which was already 'in their basket'. They purchased the good despite the increase in price. Time-limited offers were attributed more to errors in cognitive decision-making—a mistaken belief that prices would necessarily go up should they leave the store. Consumers often fail to visit the alternative store, and so they often do not learn that their belief is false.

By repeating the experiment with the same subjects, the authors explored whether consumers learn from their mistakes over time. They found that errors do decline over time, but at a slowing rate, such that learning cannot completely eradicate the problem. In the time-limited frame there is no learning at all (for the reasons noted above).

Source: London Economics (2010).

3.2.3 Firm strategy and product differentiation to exploit consumer biases

Kalayci and Potters (2010) consider the supply-side reaction of firms to consumer biases using laboratory experiments. Their analysis indicates that sellers in this setting created multiple-attribute products and set higher prices in order to confuse buyers, thereby sharing the market with other sellers, rather than simplifying the information and competing on price to capture market share. Box 3.3 provides more detail.

Box 3.3 Buyer confusion and supply-side strategy: experimental evidence

Kalayci and Potters (2010) examine both the demand- and the supply-side reactions of firms. They explore, experimentally, how complex pricing affects consumers and the incentives faced by firms—ie, whether buyer confusion leads to higher prices, and whether sellers have incentives to make it harder for buyers to compare products.

A common intuition behind theoretical models is that buyer confusion reduces the price elasticity of demand, which allows firms to raise prices. A unique advantage of experiments in this respect is that it is possible to distinguish spurious from real product differentiation. The authors note substantial experimental evidence that shows that making good decisions is difficult when the choice problem is complex. However, they also highlight that these studies do not then explore, experimentally, how these cognitive limitations affect the marketing strategies and prices of sellers.

The authors set up an experiment in which there are two sellers, each selling a good of a different quality (high and low), and two buyers. The number of attributes used by the sellers to describe their respective goods to buyers does not affect the real quality of the goods (which is still either high or low, regardless of the attributes attached to it). The sellers first decide on the number of attributes that their goods will have when presented to buyers. On learning the number of attributes selected by their rival, each seller must then set an overall single price for their good.

Presented with this information, buyers have 15 seconds to choose to purchase from seller 1 or seller 2, given prices and the (potentially) confusing information on quality, or to refrain from purchasing altogether. For each good, this involves calculating a payoff: undertaking a weighted calculation of overall product quality, based on the attributes selected by the sellers and the listed quality of those attributes, and subtracting from this the price selected by the sellers. This decision is straightforward if each firm simply selects one attribute, but becomes much more difficult as the number of attributes is increased (thereby confusing consumers).

The experimental results indicate that buyers make more sub-optimal choices when the number of attributes chosen by the sellers is higher. Most importantly, the overall prices listed by the sellers increased as the number of attributes selected by them also increased. In other words, confusing consumers allows higher prices to be charged for the same underlying quality of the good.

A further finding of interest is that prices and profits were lower when the sellers were informed that the buyers would be replaced with perfectly rational ('robot') buyers.

Source: Kalayci and Potters (2010).

3.3 Market power and disciplining by consumers and competitors

3.3.1 Behavioural economics and the concept of market power

Market power is a central concept in competition policy. There are two ways in which it is generally understood. The first relates to a company's ability to raise prices above the competitive level. The second relates to its ability to exclude its competitors. As discussed in this section, an important contribution of the behavioural economics literature is that firms engaging in certain forms of partitioned and complex pricing behaviour may have more market power than traditional economics would predict.

There is no 'bright-line test' for market power. It is a matter of degree. At the 'benign' end of the spectrum, a limited degree of market power can arise simply because products are differentiated in some way (an example is the location and opening hours of corner shops). The first threshold for market power that features in competition law is where there is sufficient influence from a practice or a company for there to be an appreciable effect on competition.[41] Dominance is a higher threshold for market power.[42] Whether the presence of consumer biases implies that firms meet these thresholds for market power needs to be assessed on a case-by-case basis. This is further discussed in section 4.

Behavioural economics also provides further understanding of why market power can persist. The concept of market power has a temporal element to it. Market power which occurs temporarily may be damaging for some consumers in the short run, but does not necessarily damage the competitive process, as this position of market power gets eroded. (Indeed, any attempt to exploit the temporary market power is what attracts new entry and is hence an integral part of the competitive dynamics in markets.) Only persistent market power is likely to raise concerns under competition law.

Well-functioning markets tend to correct themselves over time, even if there are consumer biases. For example, firms that are open and straightforward in their communication with customers could gain market share at the expense of those that seek to confuse and exploit customers—the 'good' drives out the 'bad'. Consumers could learn about shrouding practices and add-ons, and firms would care about their reputations. Certainly, this is the case in a number of markets. Firms can make a virtue out of, and establish a competitive advantage in, being up front and honest with customers. They may then be rewarded not only through

[41] This concept has often been related to the consideration of non-hardcore horizontal and vertical agreements under Article 101 TFEU and its national equivalents.
[42] Dominance has been defined in EU case law as 'a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of the consumers'. Case 85/76, *Hoffmann-La Roche & Co AG v. Commission* [1979] ECR 461, recital 38.

traditional model mechanisms (consumers choose the products that give most value for money), but also because consumers care about fairness.

However, partitioned pricing strategies do seem to work in some real-world markets (as discussed in section 3.2), generating additional market power and profits. Behavioural economics provides relevant insight here. There is an emerging theoretical and experimental literature showing that the market mechanism does not always prevent firms from engaging in behaviour that takes advantage of consumer biases. This is discussed further in the next sub-sections.[43]

3.3.2 Disciplining by consumers: inertia, self-correction mechanisms and learning

Inertia may mean that customers do not switch between products. Therefore, even if there are several competitors in the market, owing to the lack of switching each competitor can charge a monopoly price, or at least more than would be observed in a fully competitive market. Furthermore, customers may form a trusted relationship with their providers and develop loyalty, potentially preventing them from switching to competitors in the event of a (small) price increase.

In some cases, customers may not be aware of alternatives or find it difficult to compare alternatives. For example, in markets characterised by drip pricing and add-on sales, customers may be 'locked in' and not able to switch at a later stage in the sales process due to the endowment effect. Hence, they may be less likely to switch between providers later in the sales process.

Even when firms are exploiting consumer biases, the market can correct itself where learning and reputation effects are strong, and where there is frequent purchasing. As noted in section 2, consumers may also commit to not behaving in a time-inconsistent way.

There is an argument that consumers need to be exposed to situations in which they make errors in order for them to learn from their mistakes. In this context, Spiegler (2006, pp. 1 and 2) notes that firms are better at learning how to exploit consumers than consumers are at avoiding being exploited:

> In reality, firms and consumers often differ in their ability to understand the market model. Firms interact more frequently with the market, and pay closer attention to it, than most consumers. As a result, they have more opportunities to learn the market model and the market equilibrium. Moreover, because prices are typically set by firms, they are in a position to complicate the consumer's task of understanding the actual value of their products, by employing complex pricing schedules … One could argue that repeated exposure to the market would enable consumers to learn the true value of each alternative, thus saving them the need to rely on simplifying short-cuts. However, these learning opportunities are scarce in situations such as those [described].

Agarwal et al. (2013) use real-world credit card statement data to examine learning over time, and find that consumers with more experience of credit cards do make better choices. Examining add-on fees (cash advance, late payment, and over-limit fees), the authors find that, through negative feedback (paying a fee), consumers learn to avoid triggering future fees. However, this knowledge depreciates over time.

Learning is itself a mental activity that may be subject to storing and recall biases. In addition, learning is more difficult when a firm's practices appeal to hard-wired biases (certain forms of framing, such as loss-aversion frames, are inherently difficult to resist, even in a repeat setting). Conditioned or automated (system I) learning does not occur under such frames. Conscious learning (system II), to override a conditioned response, requires

[43] In what follows, a distinction is made between disciplining by consumers and disciplining by rivals. This is mainly for analytical convenience, as the drivers behind the two concepts can be slightly different. However, in practice, disciplining by consumers and by rivals will often go hand in hand and reinforce each other.

deliberation, effort and time before what is learned becomes automated (akin to learning how to ride a bicycle). Firms may try to disrupt learning pathways rather than facilitate them.

Notably, however, third parties, including consumer and campaign groups, all have a role to play in helping consumers to learn, as do websites, social networks and discussion forums. As regards comparing prices of goods sold via the Internet, where attempts are made to improve comparability firms can seek alternative ways of shrouding price information. Ellison and Ellison (2009) show that some Internet retailers can attempt to make prices less clear in order to limit comparability and customer search. However, in such a high-tech sector, and with consumer experience of repeat online purchasing, it does appear that practices are changing. Internet price-comparison sites now often display both base prices and postage and packaging, for example, as do search engines that offer stand-alone price-comparison results.

3.3.3 Disciplining by consumers: 'naive' versus 'sophisticated' consumers

Different consumers will be willing to search for low prices to a different extent. The behavioural economics literature has analysed the impact of the presence of 'naive' consumers on market outcomes, primarily on prices. Naive consumers are unable to learn or compare prices, which affects their purchasing and searching behaviour. In contrast, 'sophisticated' consumers are well-informed and purchase from the firm offering the lowest price.[44]

Firms acknowledge the presence and behaviour of sophisticated and naive consumers, and realise that they may exert market power over naive consumers, but not over sophisticated consumers. In such models, both the minimum price paid by sophisticated consumers and the average price in the market increase in line with the proportion of naive consumers: the higher the proportion of naive consumers, the higher the prices, and hence the greater is the market power of firms over both naive and sophisticated consumers.

The literature on drip pricing finds that sophisticated consumers can benefit from naive consumers. Firms using drip pricing set low prices for the primary product in order to attract consumers, and then make profit by selling secondary products to these same consumers for high margins. Naive consumers fall into this 'trap'. Sophisticated consumers are likely to anticipate the trap, and purchase the primary products for the low price, while purchasing secondary products through a different channel. The implication can be that naive consumers cross-subsidise the sophisticated consumers, but to what extent this happens and has a significant impact on naive consumers is an empirical question.

3.3.4 Disciplining by rivals

Firms employing desirable practices may discipline those employing undesirable practices. This is the self-correcting market mechanism. If desirable practices rendered undesirable practices unprofitable, competition would facilitate the crowding-out of undesirable practices. If other firms employing desirable practices are profitable, they constrain the ability of firms employing undesirable practices to benefit from consumer biases. For example, Shapiro (1995) demonstrates that educating other firms' customers by offering them more transparent and attractive pricing schemes should be a profitable strategy for firms. This requires that competition in the market is sufficiently strong, and that consumers are sufficiently willing to put some effort into learning.

As discussed in section 2, a number of behavioural economics studies have shown that this self-correcting mechanism may not always function. Gabaix and Laibson (2006) and Heidhues, Koszegi and Murooka (2012) demonstrate that shrouding may not unravel, and that desirable practices could in fact be crowded out by undesirable practices—see also the next sub-section.

[44] There is analogy with the search literature, in which a distinction is made between shoppers (no search costs) and non-shoppers (positive search costs). See, for example, Stahl (1989).

Taking the example of financial services, the effectiveness of the self-correcting mechanism may be diminished by two characteristics.

– **Infrequent purchasing**—consumers may not be able to learn from previous purchases, and not build the experience needed to comprehend complex pricing practices. For example, people taking out life insurance may not have any experience to rely on.

– **Bespoke pricing**—a complex insurance product, such as term life insurance, offers an example of bespoke pricing. Insurers apply risk-based pricing by setting prices on the basis of the risk of the person to be insured. Risk-based pricing is common practice in insurance. This means that relevant characteristics such as age and medical conditions are taken into account. This could make it more complicated or time-consuming for consumers to compare prices, since they would have to actively ask firms to provide price quotes.[45]

3.3.5 The number of suppliers and the effect on naive and sophisticated consumers

In order to examine add-ons, Gabaix and Laibson (2006) present a theoretical model of a form of portioned pricing. In theory, if markets work well, and consumers are fully informed and rational, firms would not hide (or shroud) add-on information from their customers. However, this may not be the case if, within a market, there are sophisticated consumers on the one hand and naive consumers on the other. Naivety here concerns the attention that consumers pay to the pricing: the former always take into consideration the full price of a product including add-ons, whereas the latter do so only if they observe add-on information clearly.[46] Importantly, if the proportion of naive customers is high enough, *all* firms—including those with low market shares and hence not usually thought of as having market power—choose to shroud the add-on price information.

Why is this? In the situation described, sophisticated consumers buy the base good but not the add-on. They receive a subsidy from naive customers who pay the add-on fees. Competition between firms fails to unwind this, since any attempt by any one firm to educate naive consumers about the add-on market will—if there are close substitutes for the add-on product—lead to a loss of the profitable naive customers. At the same time, sophisticated consumers, who are not profitable to the firm, prefer to buy from firms that offer loss-leader prices on the base good, and would rather that the status quo of shrouded add-ons was retained. Referred to as the 'curse of de-biasing', all firms exploit the biases, and no single firm has an individual incentive to correct its behaviour in consumers' overall interests.

Heidhues, Koszegi and Murooka (2011) model sophisticated and naive consumers in the retail market for credit.[47] In this, naivety focuses on the issue of *self-control*: all borrowers are time-inconsistent and, whereas sophisticated consumers appreciate their time-inconsistency, naive consumers do not. For a given contract type, naive consumers under-predict the likelihood that they will miss future repayments, and also do not observe the penalties for doing so, and hence they under-predict future charges. In turn, firms can target naive customers with products that have cheap upfront baseline repayment terms, accompanied by high and hidden penalties. In this setting, vigorous competition between firms is insufficient to protect naive consumers from exploitation if enough (sophisticated) 'arbitrage' consumers are present—these have little interest in the loan product itself, and benefit from the cheap upfront payment terms while avoiding the penalties. The presence of arbitrage consumers

[45] In practice, however, the application process in various countries is facilitated by brokers and price-comparison websites, which require consumers to fill in only one application form and which then provide quotes from multiple providers. Risk-based pricing means that prices tend to be cost-reflective in each risk pool (each pool containing consumers with a similar degree of risk), and is therefore efficient from an economic point of view—a large body of literature exists to demonstrate this. Risk-based pricing combined with some sharing of information on risk factors among insurers and the use of price-comparison websites where quotes are immediately available to consumers can result in competitive market outcomes. See Rees and Wambach (2008); Oxera (2010d); Oxera (2009a).

[46] In this model, all consumers observe the add-on price after they have completed the transaction.

[47] The framework used in the paper builds on that set out in Heidhues and Koszegi (2010).

forces *all* firms to exploit consumer naivety, enabling firms to make higher profits. Notably, firms do not make exploitative profits when arbitrage consumers are absent from the market.

These studies may suggest that the traditional supply-side position—namely, that 'more competition', through more firms in the market or more intense competition between existing firms, will drive out poor practices—may not always hold. The market may become stuck in a sub-optimal equilibrium for consumers.

These studies also raise the parallel question of whether the actions of sophisticated consumers 'protect' naive consumers. In this regard, Armstrong and Vickers (2012) noted the need to distinguish between cases in which naive consumers benefit from the presence of sophisticated consumers and those in which competition works to subsidise sophisticated consumers at the expense of the naive. They noted that the argument for consumer protection intervention in the former case is weak; and that, in the latter case, more attention needs to be paid to valuing the distributional impacts of interventions that benefit naive consumers.

It is important to note here that the idea that having more suppliers in the market may not be sufficient to resolve market failures is not new. The traditional literature on externalities and information asymmetries has demonstrated that, left to their own devices, markets may not always produce optimal outcomes or unwind market power. A classic example is that of adverse selection: the consumer is unaware of the quality of the product they are buying, but the seller has this knowledge. Taking the often-quoted example of a used-car market, in which there are sellers of good-quality cars and bad-quality cars ('lemons'), consumers may view the price charged for the car as an indication of its quality (Akerlof 1970). To gain a competitive edge, sellers of lemons may seek to undercut rivals selling good-quality cars. In turn, sellers of good-quality cars may be excluded from the market. This may cause a downward spiral in which the market price drops further, leading to even lower product quality being supplied in the market. In this instance, it is not (a lack of) competition between car sellers that is causing the problem, but the informational asymmetry enjoyed by sellers over buyers.

3.3.6 The theoretical finding that having more suppliers may not improve market outcomes

Spiegler (2006) goes further than the above studies: not only may competition not resolve the shrouding issue, it may actually exacerbate it—competition can make things worse rather than better. In his model, firms may adopt complex multi-component pricing strategies. In the face of information overload, consumers find it difficult to grasp this structure in its entirety, so they resort to heuristics, sampling a small number of dimensions and choosing the best-performing firm along these sampled dimensions. This heuristic saves considerable cognitive resources, and is applicable to many market settings, but firms may then have an incentive to increase complexity.

In this framework, as competition increases, firms react by making pricing less clear and exploiting consumers, rather than engaging in more competitive pricing. Therefore, Spiegler notes, policy interventions that would foster competition in a market with rational consumers (increasing the number of competitors, introducing attractive outside options) may have adverse welfare effects if consumers have limited ability to evaluate complex offerings.

Piccione and Spiegler (2012) examine the circumstances in which more competition does or does not lead to lower prices for consumers. They note that, in financial services, there have been numerous attempts across Europe to standardise products so that consumers will find it easier to make comparisons (eg, between current accounts). The authors develop a model in which each firm chooses both how to price its product and how to frame this pricing. Consumers' 'ease of comparison' is then a function of firms' framing decisions. The study finds that a competitive outcome of low prices arises only when consumers are unaffected by framing. The authors note that their findings illustrate how 'spurious' product differentiation can be a means of confusing customers and raising prices.

These studies are mostly theoretical and make a number of assumptions. Some of the conclusions are controversial. The notion that more competition may (in certain situations) be harmful to consumers goes against the general grain of established competition policy. More work would be required to examine these theories and to test them more thoroughly in real-world and laboratory settings.

3.4 Conclusions

The cognitive processes and consumer biases discussed in section 2 have implications for how demand and supply interact and the market outcomes. As discussed in the current section, phenomena such as search costs, switching costs and product differentiation have long been understood in the IO literature and in competition policy. The added value of behavioural economics is that it can cast further light on what drives search and switching costs, and on how product differentiation and complexity affects consumer behaviour in each of the access, assess and act stages—the ability and inclination to search, compare products, and seek out better deals. Consumer biases may get in the way of a virtuous circle between demand and supply, thus affecting market outcomes.

Behavioural economics also sheds light on how, on the supply side, firms may be able to exploit consumer biases at each of these stages. In particular, pricing frames matter. Experimental studies show how pricing practices such as drip pricing, sales offers and complex pricing can be profitable strategies that may harm consumers. With drip pricing, the endowment effect and mental accounting play a role: having engaged in the buying process, people's point of reference (the anchor) shifts and they feel that they already own the product, so they are more inclined to pay not to lose it. Likewise, experiments show that sellers may have an incentive to create multiple-attribute products and set higher prices in order to confuse buyers, rather than simplifying the information and competing on price to capture market share.

There is academic debate about whether and how such results from behavioural economics influence the main models used in IO theory. This section has focused more narrowly on the main effects on market outcomes that have practical relevance for competition policy.

One conclusion from the behavioural economics literature that has direct relevance for competition policy is that firms engaging in practices such as partitioned and complex pricing may have a greater and more persistent degree of market power than would follow from the traditional models of competition. Consumers may not provide adequate discipline, and consumer learning may not be perfect. The presence of many naive (as opposed to sophisticated) customers may exacerbate these adverse effects. In the longer term, entry by new competitors may not always resolve the problem. There are market situations where even firms with small market shares have an ability and incentive to engage in these practices.

What all this means for competition investigations in practice is explored in sections 4 and 5. It is certainly not the case that competition policy intervention is called for in all these situations. First, the above situations are theoretical possibilities, and the severity of the adverse market outcome would have to be assessed empirically. Second, intervention may not be appropriate or possible if the established market power thresholds in competition law are not met (as discussed in section 4, market power is a matter of degree, and competition law concerns arise only if there is a significant degree of market power). To the extent that intervention is nonetheless deemed desirable, other instruments that might be used include consumer protection and financial regulation (see section 6).

4 Practical implications of behavioural economics for competition investigations

4.1 Introduction: from behavioural economics insights to the practical tools for competition investigations

Sections 2 and 3 gave an overview of the cognitive and behavioural processes that characterise consumers and that may result in biases, thus affecting market outcomes. This section explores the implications of consumer biases for the main instruments and tools used in competition investigations, addressing the following questions.

- Do the standard tools used in competition investigations already take consumer biases into account where these biases are relevant?
- Should the standard tools or their application be modified according to insights from behavioural economics?
- Are there any alternative tools from the behavioural economics literature that can be used in competition investigations?

This section is structured as follows.

- Section 4.2 discusses how behavioural economics may influence the way market power is assessed in competition investigations—starting with market definition, followed by the assessment of current competition (in particular market shares) and new entry.

  An important practical competition policy question (explored in section 4.2) is whether the insight from behavioural economics that firms may have greater market power because of consumer biases (as presented in section 3) translates into more frequent findings of dominance, possibly through the delineation of narrow relevant markets.

- Section 4.3 addresses how certain insights from behavioural economics can be relevant to the assessment of abuse of dominance, restrictive agreements and mergers, and how these instruments may be applied in situations where market outcomes are affected by consumer biases.

- Section 4.4 explores the implications for empirical techniques used in various types of competition investigation.

- Section 4.5 concludes.

4.2 Implications for the conceptual approach to identifying market power: market definition, strength of rivals and buyers, and entry

4.2.1 Market definition as the first stage in assessing market power: how can it incorporate the insights from behavioural economics?

If, as behavioural economics would suggest, firms may have a greater and more persistent degree of market power than would follow from traditional models, the standard approach in competition investigations of first defining the relevant market should be capable of identifying such market power.

The aim of market definition is to identify competitive constraints on the firm or firms in question. It is an intermediate stage in the competition analysis—first, one defines the

relevant market; next, one assesses the existence and degree of market power in that market.[48]

Demand-side substitution: behavioural economics and the SSNIP test

The hypothetical monopolist, or SSNIP, test is now a standard framework for market definition in competition policy, and has been recognised by most competition authorities around the world.[49] It is in essence about how consumers react to prices, as captured by the price elasticity of demand (supply-side substitution in market definition is discussed below). This price elasticity can be influenced by many factors, including those studied in the behavioural economics literature (see sections 2 and 3).

Conceptually, however, because the SSNIP test is concerned with *how*, not *why*, consumers respond to price, at one level it may not really matter whether these responses are influenced by biases. Hence, to the extent that the SSNIP test is applied using observed, actual consumer responses (known as 'revealed preferences')—for example, using econometric analysis of price and sales data—behavioural economics may have little to add.

Nevertheless, in practice the SSNIP test is frequently implemented through an analysis of how consumers are *likely* to respond to a price increase ('stated preferences')—for example, through a consumer survey. In these cases, while the same conceptual approach is employed (ie, the idea that a market is something worth monopolising), the measurement of price sensitivity through surveys can itself be distorted by consumer biases (as discussed in section 4.4 below). In addition, in order to assess substitutability between products, it can still be useful to understand why consumers behave in a certain way, in addition to observing their actual behaviour.

A number of other conceptual aspects of the SSNIP test also raise questions to which behavioural economics might offer insight—in particular, the existence of price discrimination markets; and the implication of practices such as non-linear and drip pricing and bundling and tying. These are discussed in turn in the sub-sections below.

4.2.2 Market definition with price discrimination: what does behavioural economics add?

Price discrimination can give rise to separate markets by (groups of) customers. This may occur when some customers have a greater choice of alternatives than others, and suppliers can exploit this difference by targeting the latter, 'captive', customers with higher prices, without this being undermined by arbitrage (where the non-captive customers can somehow resell the product to the captive ones, or purchase it on their behalf). A hypothetical monopolist can profitably impose a SSNIP on the captive customers. A common example is time-sensitive versus non-time-sensitive airline passengers.

Behavioural economics contributes to the literature on price discrimination by identifying additional dimensions by which customers can be categorised.

– **Sophisticated versus naive customers**. As seen in section 3 in the context of financial services, a sophisticated customer is well-informed about the product they have bought and about available alternatives. A naive customer may be someone who has carried out limited research and has a limited understanding about the product they are purchasing. For example, when taking out a current account, a sophisticated customer would be aware of additional charges that they might incur on the account (eg, for an

[48] In practice, a focus on market definition may result in a framing bias, where it is all about what is 'in the market' and what is 'out'—everything that is in the market is equally relevant, and everything that is out is irrelevant. This potential shortcoming of market definition is well-understood in competition policy (albeit, the framing bias is not always avoided in practice).

[49] Starting with the 'focal product' (the product or geographic area in question), the test asks whether a hypothetical monopolist would impose a small but significant, non-transitory price increase (hence the abbreviation SSNIP). If it is not profitable (or profit-maximising) for the monopolist to raise its price by a small amount—usually 5% or 10%—this must be because much demand is lost to other products. If this is the case, the nearest of those substitute products must be included in the market. In other words, a market is something worth monopolising.

unauthorised overdraft). As a result, they would not be expected to use the unauthorised overdraft facility and incur overdraft charges.

It is well-known from the traditional economics of price discrimination that captive customers can be protected by the non-captive customers, to the extent that suppliers cannot differentiate between the two types. That is to say, it may not matter that some customers are captive if there are enough non-captive customers who can undermine a price increase. Where suppliers can effectively separate the two groups—and price-discriminate—no such protection exists.

As discussed in section 3, several behavioural economics and other studies have shown that sophisticated customers may not always protect the naive (captive) customers. Applying the basic ideas put forward by Armstrong and Vickers (2012) to market definition, it is necessary to distinguish between cases in which naive customers do benefit from the presence of sophisticated customers—and hence price-discrimination markets may be irrelevant—and cases in which the competitive outcome is such that sophisticated customers get a good deal at the expense of the naive, and where separate markets might therefore be defined for the two groups.

A practical question that arises in these cases is how to identify naive and sophisticated customers. This will be case-specific. One approach is to follow actual pricing practices by the firms in the market in question, which can be aimed precisely at exploiting the separation between the different groups of customers. For example, that there is a difference between time-sensitive and non-time-sensitive air passengers can be gauged from the significant price differentials in the market, without necessarily having to define the precise boundary between the groups.

Another approach is to apply market-specific criteria. For example, in a recent investigation into interest-rate hedging products sold to small and medium-sized enterprises, the UK FSA distinguished between unsophisticated and sophisticated customers, defining the latter as customers who, in the financial year during which the sale was concluded, met at least two of the following: i) a turnover of more than £6.5m; or ii) a balance sheet total of more than £3.26m; or iii) more than 50 employees.[50] Although this was a mis-selling case rather than a competition investigation, such criteria based on industry practice could be used in competition investigations as well to explore the difference between sophisticated and non-sophisticated customers.

– **Active versus less active customers**. In this context ‘active’ means customers (continuously) searching for the best deals, unlike the less active customers, who do not. This does not necessarily correspond with the classification of sophisticated versus naive customers, since not all sophisticated customers are active.

  For example, credit card companies typically offer promotional interest rates for a certain period of time, after which the standard rate is applied. Some credit card holders may switch to take advantage of the promotional interest rates (which could be as low as 0%) but then stay with this credit card provider rather than shopping around again, even though there may be credit cards with lower promotional or standard rates available. The active credit card holders with a revolving balance (ie, an outstanding balance where only the compulsory minimum repayments are made) will frequently switch and transfer their outstanding balance in order to take advantage of attractive introductory interest rates—they may also not make any additional purchases (to which the standard

[50] This reflects the criteria used in the Companies Act 2006 for classifying companies that are subject to the small companies regime, and which have less stringent reporting requirements, and are therefore less likely to have staff or advisers with appropriate knowledge and skills. In addition, the FSA agreed with the banks that they can classify a customer as sophisticated if they can demonstrate that, at the time of the sale, the customer had the necessary experience and knowledge to understand the service to be provided and the type of product or transaction envisaged, including its complexity and the risks involved. A ‘non-sophisticated customer’ is one that is not a ‘sophisticated customer’. See Financial Services Authority (2012).

rate is often applied) and therefore switch purely to obtain free or low-cost credit. These customers are sometimes known as 'surfers'. The implications for market definition and market outcomes could be twofold:

– if the market were defined to include all different types of customer, it could look highly competitive based on standard indicators such as switching rates, but this would overlook the fact that some customers are less active and may not get such a good deal (and are not protected by the active customers);

– in certain circumstances, the less-active customers could end up cross-subsidising the active customers (the surfers). Although, strictly speaking, this may not be a competition issue (unless separate markets could be defined), it may raise distributional concerns from a consumer-protection perspective.[51]

Behavioural economics thus contributes to the assessment of market definition by highlighting the potential existence of the different sub-sets of consumers, and in which circumstances they may arise. Whether consumers in these sub-sets can actually be meaningfully distinguished and whether they do indeed give rise to separate price-discrimination markets needs to be assessed case by case using empirical analysis.

4.2.3 Market definition for bundles and aftermarkets where consumer biases influence market outcomes

Product bundling and the presence of secondary products or aftermarkets represent a challenge to competition policy generally.[52] An extensive body of literature and case law has been developed on this, mainly in the context of abuse of dominance. Behavioural economics adds insights to this literature, as discussed below.

This section contains the first part of the discussion on bundling and aftermarkets in the report, since the first complexities in the analysis in these cases often arise at the market definition stage. Section 4.3 continues with the discussion of anti-competitive effects where there is bundling or an aftermarket, in the context of abuse of dominance.

Examples of such situations in the financial services sector include travel insurance purchased from a travel agency after booking a flight, and insurance products offered to a customer who commits to substantial loan or investment products (eg, insurance against the possibility that customers may not be able to pay off a mortgage, or insurance against underperformance of their investment product).

The starting point for the market definition exercise

As regards market definition, the main difficulty lies in choosing the right starting point for the SSNIP test: does the hypothetical monopolist control just one product, or a bundle (or the primary and secondary product in the case of aftermarkets)? The choice will have to be determined by the specific market and competition problem in question.

Behavioural economics provides additional insights into whether the secondary market is a separate relevant market from the primary market, or whether there is a 'systems market'

[51] For a discussion, see Oxera (2010a), section 2. In this case, the analysis suggested that the 'surfers' formed a relatively insignificant group. Their balances accounted for a small share of overall balances and the lost interest income resulting from surfers not paying a standard transaction APR on their balances was insignificant, which suggested that any distributional issues would also be small.

[52] Bundling occurs when two or more products are sold more cheaply together than individually ('mixed' bundling), or when they are sold only together ('pure' bundling). Bundling is a common business practice—with a left shoe comes a right shoe, and with a car come four wheels and tyres and a stereo. Bundling has many economic justifications, but it may also raise potential competition concerns (see section 4.3 below). Secondary markets or aftermarkets exist where, in order to make full use of a product, the customer must buy associated products or services that are complements to the original product. Textbook examples of aftermarkets include cars (a primary product) and spare parts (the aftermarket or secondary product); razors and razorblades; printers and toner cartridges. Competition issues may arise where the choice of aftermarket product is limited to those that are compatible with the primary product already purchased. When buying the primary product, consumers may fail to take into account the ongoing costs, and when they subsequently want to buy the secondary product, they may find they have limited choice, giving the seller the opportunity to exploit its market power.

that includes both the primary and secondary product. A systems market would be more appropriate if customers are fully aware at the time of purchase that what they buy is a system—ie, they know that they may purchase the secondary product or service as well and they take this into account when making the primary purchase decision.

An example would be legal expenses insurance offered when buying motor insurance. Some price-comparison websites now indicate whether the premium quoted is based on motor insurance with or without legal expenses insurance. In other words, consumers may be aware of the cost of legal expenses insurance. If the market is a systems one, the test is whether a hypothetical monopolist controlling one system faces competition from other systems—does one insurance provider face a pricing constraint from other insurance providers?

If consumers are sufficiently aware of the secondary product, and if this product is also offered by alternative providers separately from the primary product, they may shop around and choose to buy either the primary and secondary product from the same supplier or from different ones. This should result in a competitive market for secondary products. Travel insurance is an example. Although some customers may purchase travel insurance from their travel agent, it is also offered by a wide range of insurers, either directly or indirectly through intermediaries such as insurance brokers or banks (these insurance policies may have the benefit of covering longer periods or multiple journeys). As long as a sufficient number of people compare the cost of travel insurance offered by travel agents with the cost of policies offered by other providers, this can exert pressure on the prices set by travel agents. In this case there is likely to be a separate market for travel insurance (one that covers both travel agents and other providers), rather than a systems market that covers travel and travel insurance sold by travel agents.

There are other circumstances in which system competition is not strong enough to constrain market power in the secondary market, and where a systems market definition would therefore be less appropriate. For example, given customers' cognitive processes and bounded rationality (discussed in sections 2 and 3), they may not fully take into account the need for the secondary product when choosing the primary product, or are unable to process sufficient information at the time of the primary purchase. Such a situation can also arise when the primary product already has a large installed base of customers who are locked in for the foreseeable future, either because they would face high switching costs if they were to move to another primary product, or because of biases such as inertia, loss aversion and endowment effects.

Add-on and drip pricing

A related question for market definition arises in markets with add-on and drip pricing (practices discussed in section 3). What is the starting point for the SSNIP test in which a hypothetical price is applied? Should it be the headline (primary) price which attracted the consumer to the product in the first place, or should it be the total price that the consumer ends up paying?

Behavioural economics would suggest that consumers may be more sensitive to increases in the price of the primary product than in the prices of add-ons. Firms can use add-on pricing and drip pricing in order to benefit from the lower price sensitivity of consumers to prices of add-ons and secondary products.

Therefore, the insights from behavioural economics suggest that if all firms in the market apply the same pricing practices and consumers compare overall prices between firms over a longer time period (eg, when making repeated purchases), a SSNIP test applied to the total price is still relevant. However, if consumers persistently and systematically focus only on the primary price when comparing competing offerings, that may be the focal point for market definition. Add-ons would then be in separate relevant markets, covering individual consumers who are, at that point, captive to the selected supplier.

The SSNIP principles can thus lead to rather narrow relevant markets in these situations. As in the case of price-discrimination markets, the contribution of behavioural economics is to highlight this as an issue that may arise when examining markets characterised by drip pricing and add-on sales. Whether this is an actual issue should be considered on case-by-case basis.

4.2.4 A precedent on narrow markets based on insights from behavioural economics? The payment protection insurance case in the UK

PPI provides cover for consumers who take out credit against events that may prevent them from keeping up with their repayments. Policies tend to pay out following unemployment, accident or illness (depending on the specific terms). PPI is considered a secondary product because it is purchased only once the primary product (in this case, a credit facility) has been bought.

When the UK Competition Commission initiated its investigation in 2007, PPI had developed into a popular retail insurance product, sold alongside personal loans, credit cards, overdraft facilities and mortgages.[53] Mis-selling allegations in relation to PPI were investigated in parallel by the FSA.[54]

Why do people buy primary and secondary products from the same provider? While in some markets there may be benefits of enhanced compatibility (in buying computer hardware and software, for example), in many other cases consumers may simply find it more convenient to buy the primary and secondary product at the same time, in the same place. In the case of credit card PPI, the purchase of insurance from the same firm providing the credit card would protect repayments on any balance outstanding at any point in time. Other, third-party PPI providers would not have access to the cardholder's account details and would typically offer protection for a fixed amount. This would leave the cardholder potentially exposed, since the amount covered might not necessarily match the cardholder's balance at any given time.

From a competition perspective, problems arise with secondary products where consumers are deterred from shopping around for the product that is most appropriate for them. Although consumers may do so for the primary product, a failure to research the secondary product thoroughly may result in a lack of competition for the latter. This can lead to poor quality or high prices—particularly if neither quality nor prices can be easily observed or understood by consumers prior to the purchase. This was the issue examined in the PPI case.

To define the relevant market, the Competition Commission addressed the following two questions.[55]

– Does consumer behaviour in the market for the secondary product constrain the behaviour of providers?

  If consumers are sufficiently aware of the secondary product, and if it is also offered by alternative providers separately from the primary product, they may shop around and choose to buy the primary and secondary product from the same supplier or from different ones. This should result in a competitive market for secondary products.

  The Commission's investigation found that most lenders offered a PPI product only in combination with the credit product sold—in other words, it was not possible to obtain a loan from bank A and then purchase the PPI from bank B.

[53] Competition Commission (2009) and (2010).
[54] The FSA began investigating the market for PPI in 2005. See Financial Services Authority (2005), and, for a more recent update, Financial Services Authority (2009a).
[55] While this case was assessed under the market investigation regime in the UK (as explained in section 1), it also involved a stage of market definition and is therefore a relevant example for other competition law instruments as well.

While a number of stand-alone PPI products had been launched, their sales volumes were relatively limited. Alternative insurance products were available, but evidence on competitive pressure from these products was mixed. One of the most important options available to consumers was, perhaps, simply not taking the PPI product—in other words, opting for no insurance. The Commission found that 60% of consumers who took personal loans and 80% of those who took credit cards did not purchase PPI.[56]

– Does consumer behaviour in the market for the primary product constrain provider behaviour in the market for the secondary product?

  Even if consumers do not shop around for the secondary product separately, competition concerns do not necessarily arise. If, when shopping around, consumers compare the total cost of the products they wish to buy, the secondary product may be subject to competitive constraints. If the (high) price of the secondary product affects the total cost of both products, this price is likely to affect demand for the primary product, thereby imposing constraints on providers' behaviour.

  Consumer surveys undertaken by the Commission and by credit providers indicated that a significant proportion of consumers do indeed think about buying PPI before applying for a loan, and that some consumers look at various PPI products when shopping around for a loan. However, the Commission concluded that the number of consumers actually comparing in detail the costs of combined credit and PPI products was insufficient to place genuine competitive pressure on PPI providers.

The Commission therefore concluded that the relevant product market was an individual distributor's, or intermediary's, sales of a particular type of PPI policy. In other words, each distributor held an effective monopoly over the sale of PPI to its own credit customers.[57]

This case therefore represents an example of a market definition exercise in which consumer biases are taken into account and tested empirically, and which confirms the finding of behavioural economics (discussed in section 3) that firms may have greater market power than the number of suppliers in the market alone would suggest. However, whether this case serves (or should serve) as a precedent for narrow market definitions in competition investigations into this type of market remains an open question.[58]

4.2.5 From market definition to assessing market power: market share and concentration measures

Market share and concentration measures are useful initial indicators of the degree of existing competition in the market. They capture the relative size of firms in the market. In EU case law there is a strong presumption linking market share to market power. In *AKZO* (1991), the General Court ruled that a company with a stable market share of more than 50% in a relevant market would be deemed dominant unless there were exceptional circumstances.[59]

From an economic perspective, market shares should, in any case, not be seen as the sole indicator of market power. The insights from behavioural economics discussed in section 3 reinforce the notion that market shares may not be a good representation of (lack of) market power of firms. In the presence of consumer biases, even firms with relatively low market

[56] Competition Commission (2009), p. 26 (data for 2008).
[57] This narrow market definition was asymmetric as regards stand-alone PPI providers. While the Commission found that PPI sold by distributors and intermediaries was not competitively constrained by stand-alone PPI, stand-alone PPI was considered to be constrained by the PPI policies sold by distributors and intermediaries.
[58] Markets cannot be delineated at one's discretion—there are established techniques, and any market definition needs to be in line with the available empirical evidence. However, market definition also involves a degree of judgement, for example in relation to the time period over which markets are believed to correct themselves, or whether temporary market power is considered to be of concern.
[59] Case C-62/86, *AKZO Chemie BV v Commission of the European Communities*.

shares may be able to engage in practices that are harmful to consumers, as discussed in section 3.

An example where a competition authority followed this logic is the Competition Commission investigation into the personal banking market in Northern Ireland (Competition Commission 2007). Based on its finding that consumers did not frequently switch current-account providers—in part explained by the consumer biases discussed in section 2.5—the Commission concluded that all providers of personal current-account providers had 'unilateral market power', including those banks with a market share of less than 5%.

Such a conclusion about market power held by firms with small market shares, while in line with the thrust of the behavioural economics literature discussed in section 3, is uncommon in competition investigations. It was reached in the context of a market investigation under the UK Enterprise Act 2002 (as explained in section 1), where the test for intervention is whether there are adverse effects on competition. It remains open to question whether this approach should be seen as a precedent for determining market power under the traditional competition instruments dealing with abuse of dominance, restrictive agreements and mergers.

4.2.6 Potential competition and barriers to entry: insights based on consumer and firm biases

Potential competition is normally considered as part of the assessment of market power. This can be in the form of supply-side substitution, which in most competition regimes forms part of the market definition stage, or in the form of new entry.

Supply-side substitution requires there to be no significant additional 'sunk' investments or costs of switching; it must be sufficiently swift; and it must be of a sufficient scale to constrain the hypothetical monopolist. Behavioural economics adds to this analysis by identifying consumer biases that may have the effect of limiting the extent to which consumers can switch between different supply-side alternatives. Consumer inertia means that consumers may be reluctant to change to other suppliers, even in the presence of low switching costs and substantial price differences. Therefore, behavioural economics suggests that when it comes to supply-side substitution arguments which if successful would widen the market, it is important to consider whether consumers would actually switch between the product in question and the suggested alternatives.

In its inquiry into Rabobank's acquisition of Friesland Bank, the NMa (2012) examined whether Internet banking places a competitive constraint on the 'bricks-and-mortar' sales channel. The NMa recognised that the extent to which consumers consider bank branches and the Internet to be substitutes depends on the nature of the financial product in question. If the product is relatively simple with a low impact, consumers may care less about the physical location of a supplier, and may find it attractive to arrange and manage a financial service over the Internet. Savings accounts are a good example. Conversely, if consumers take out a mortgage, they may be more inclined to opt for a mortgage provider with a local presence in order to benefit from a personal interaction and close communication with the provider. Thus, while from a supply perspective banks might easily use the Internet to reach customers in areas where they do not have branch presence, this may still not result in sufficient supply-side substitution to widen the market because of customer behaviour in practice.

The likelihood of new entry can also be affected by biases on the supply side. Even where there is a clear business case for entry (or supply-side substitution), it may still not take place because of irrational beliefs among firms. The bias may also point in the opposite direction, and result in a greater likelihood of entry than suggested by a rational business case. The behavioural economics literature has provided some insights into such firm biases (see the brief overview in section 2.6).

Firms, just like people, can fall prey to optimism bias—they can systematically underestimate the risk that a negative situation will occur. For firms, this negative situation would mean that their activities are not profitable. The empirical literature has demonstrated that firms can be overconfident when predicting their future, and, more particularly, underestimate the risk that their activities will not be profitable. To mitigate this, firms may use a hurdle rate for new investments which is significantly above their cost of capital. Nevertheless, the optimism bias can still affect firms' decisions, including the decision to enter a market. In the context of supply-side substitution, the optimism bias can have a positive effect on competition since it encourages firms to enter a market where otherwise they might have been more reluctant.

In a paper that has some relevance for the assessment of barriers to entry, Camerer and Lovallo (1999) explore why empirical studies in the USA at that time revealed high rates of business failure. The authors use experiments to explore whether optimism bias among entrants of post-entry performance is a potential explanation for this, and find that excessive entry occurs owing to managers' overconfidence in their skill. The authors put this down to 'reference group neglect'. Subjects in the experiment appeared to ignore the fact that they were competing with a reference group of subjects who also regarded themselves as highly skilled.

Whether these considerations coming out of the behavioural economics literature will become part of the mainstream analysis of entry barriers remains to be seen. In investigations where the competition authority wishes to get a good understanding of existing and potential patterns of entry, supply-side biases may be one aspect it could explore. However, a better theoretical and empirical understanding of such effects is still needed.

4.2.7 Countervailing buyer power

It has been recognised in competition policy that if buyers have sufficient power over their suppliers, this can limit concerns about market power. Countervailing buyer power, in the traditional sense of fully offsetting seller market power, is unlikely to exist in consumer markets in general, and in retail financial services in particular. Nonetheless, behavioural economics provides some insight into why disciplining of sellers by consumers may sometimes be effective. This often has to do with fairness reasons.

It has long been recognised that people care not only about their own material welfare, but also about, first, their immaterial welfare, and second, the welfare of other people. Fairness and reputation considerations may directly enter people's preferences, and these factors have to some extent been captured in traditional economic models. Behavioural economics explores this theme more deeply. The literature refers to preferences that acknowledge the social ties between people as 'other-regarding preferences'.[60] Fairness is one of the non-material factors that people may care about, and several studies have explored the existence and nature of fairness as a factor forming part of people's preferences through laboratory experiments.[61]

Fairness may affect consumer responses to price increases. If consumers regard a price increase as unfair, they may want to punish their suppliers by no longer purchasing their products, even if this comes at their own expense. Such behaviour occurs more frequently than would follow from traditional economic models. However, the extent to which it is sufficiently prevalent as to undermine the seller's market power needs to be assessed case by case; in many cases it will not be sufficient.

There are situations in which fairness considerations can influence market outcomes. Customers of financial services can grow accustomed to services being offered free of charge. For example, in a number of countries it has been common for current accounts to be free of charge to bank customers.[62] When customers grow accustomed to this, they may

[60] For a survey article on other-regarding preferences, see Sobel (2009).
[61] See, for example, Fehr and Schmidt (2006).
[62] Customers do have to pay for additional services, such as the use of a credit card or an overdraft. See Oxera (2006).

consider banks starting to charge for the current account and payment services as unfair in itself, with potential negative publicity. This could then be one factor preventing banks from unilaterally changing to a different charging model.

4.3 Behavioural economics and the assessment of abuse of dominance, restrictive agreements, and mergers

4.3.1 Exploiting consumer biases: does competition law capture this?

EU case law on abuse of dominance has historically established a two-step approach, where dominance is first determined and the practice is then assessed mainly on the basis of its form rather than its economic effects. In recent years, the EU approach to Article 102 TFEU has placed greater emphasis on the economic effects of practices.[63] Behavioural economics has a great deal of insight to add with regard to the effects of particular business practices on consumers and on competition. This is why behavioural economics is of relevance to the effects-based approach to abuse of dominance cases, as explored in the next sub-sections.

A first question that arises is whether the exploitation by firms of consumer biases—as discussed in section 3—could be directly captured under the abuse of dominance provisions. In this regard, the usual distinction must be made between exclusionary and exploitative forms of abuse. While interventions under the abuse of dominance rules tend to focus on exclusionary behaviour (ie, conduct that harms competition in a market), the underlying legislation in Europe also condemns exploitative conduct that is directly at the expense of customers. Article 102 covers practices that involve 'directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions'.

However, abuse of dominance cases involving the direct exploitation of customers are rare, and usually limited to excessive pricing cases (as opposed to other exploitative practices, such as reducing service quality). Whether behavioural economics means that competition authorities should look more closely at exploitative abuse cases is a question for further debate. It is probably the case that the adverse market outcomes resulting from the exploitation of consumer biases can often be dealt with more directly under consumer protection rules rather than through competition law (as discussed in section 6).

4.3.2 Bundling and tying as a potential abuse: what does behavioural economics add?

Turning to exclusionary abuses, EU case law determines that a dominant position in one market can be abused in a related market.[64] Bundling and tying are two mechanisms to achieve this. Behavioural economics provides additional insight into how tying or bundling might be anti-competitive—in effect, by raising the cost to competitors of competing in the bundled or tied market.

Section 4.2 above discussed the implications on bundling and aftermarkets for market definition. The discussion here focuses on the abuse. Bundling or tying by a dominant firm between two markets can be an abuse of a dominant position, where this raises the cost to competitors of competing in the bundled or tied market and leads to market foreclosure. Traditional economics has accomodated the leveraging idea. The crucial assumption that makes this kind of behaviour possible in the traditional framework is that the physicality of the pure bundling denies consumers choice, and places competitors at a disadvantage. In contrast, the competition concerns tend to be more limited when the dominant firm offers a mixed (as opposed to a pure) bundle—ie, consumers are free to buy the bundle or products separately.

One additional, albeit somewhat theoretical, insight from behavioural economics is that a pure bundle does not need to exist in a *physical* sense for competition concerns to arise. As

[63] This shift has taken place to some extent in case law, but in particular through the European Commission's policy efforts to reform the approach to Article 102. See European Commission (2009a).
[64] Case C-333/94 *Tetra Pak v Commission* [1996] ECR 1-5951, paras 29–31.

discussed in the preceding sections, consumer choice depends on what information is presented to consumers, how and when. The way in which the dominant firm offers two products may in effect cause a strong *psychological* tie between the two—ie, the consumer may perceive the two effectively as one single product because of framing effects.

The European Commission *Microsoft* cases are useful examples to show how behavioural economics can add to the assessment of bundling, tying and aftermarkets. Consumer biases played a role in the Media Player case, which focused on Microsoft's practice of bundling (by default and free of charge) Windows Media Player with its Windows operating system (European Commission 2004). Microsoft was dominant in the operating system market, but competitors were vying to gain market share in the emerging media player market. By bundling Media Player as the default application through which all media would play when a consumer bought a PC, Microsoft was considered to have leveraged its dominance in the operating system market into the market for media players.

Traditional approaches would suggest that, if consumers are fully rational, this default does not matter—after all, consumers can quickly log onto the Internet, and download an alternative media player free of charge (ie, the information is available, and switching costs are low). However, when viewed from the perspective of behavioural economics, it follows that consumers may not switch from the preloaded Microsoft programs.

Indeed, the European Commission found that the pre-installation of Media Player on Windows created the potential for leveraging since, on the demand side, 'users who find WMP pre-installed on their client PCs are … in general less likely to use alternative media players as they already have an application which delivers media streaming and playback functionality', whereas, on the supply side, 'an aspect to consider is that, while downloading is in itself a technically inexpensive way of distributing media players, vendors must expend resources to overcome end-users' inertia and persuade them to ignore the pre-installation of WMP.' (European Commission 2004, paras 845 and 870) Hence the finding of abuse took account, albeit implicitly, of the behavioural biases that consumers face.

4.3.3 Secondary products and shrouding: how do the abuse of dominance rules apply?

Section 3 noted that where products are complex, there is a potential for the market to become stuck in a shrouding equilibrium involving cross-subsidies between consumers, and that more competition (eg, through reduced barriers to entry) may not, on its own at least, always be the solution.

In a 2008 market study, the OFT stated that the market for personal current accounts was not working well for consumers (Office of Fair Trading 2008). According to the OFT, a combination of complexity and lack of transparency meant that consumers and competition were focused almost exclusively on more visible fees, and not on the less visible elements such as insufficient-funds charges and forgone interest (which make up the majority of banks' revenues). This was compounded in the case of insufficient-funds charges by a lack of simple mechanisms for consumers to opt out of an unarranged overdraft. Many consumers also believed that it was complex and risky to switch bank accounts, resulting in low switching rates.

The OFT was not persuaded that additional profits made from less visible elements were fully competed away in terms of lower fees in other areas. It also believed that the market might be 'stuck in an equilibrium that does not work well for many consumers'. The problem, as the OFT saw it, does not appear to relate to the number of providers of current accounts (there are quite a few of these), but to the difficulties in the current model for new entrants to gain market share supplying only pure banking products (without cross-subsidisation).

Whether such competition concerns can be dealt with under the rules on abuse of dominance is less clear. First, a dominant position must be established, which depends on market definition and the assessment of market power, as discussed above. In a market with several different providers, it may be difficult to establish dominance, unless there was

evidence to define very narrow markets, or various individual providers are deemed to have unilateral market power (or potentially joint dominance). Examples of such findings were given in section 4.2. However, there is little precedent on such approaches under the abuse of dominance provisions in competition law. Equally, there is little precedent of a practice of shrouding (even if carried out by a dominant firm, making entry difficult) to be found to be an abuse as such. At this point in time, the most that can be said is that the impact of behavioural economics in this area of competition law currently and in future is as yet unclear.

4.3.4 Behavioural economics, collusion, and coordinated effects in mergers

Economic theory has a good deal to say about why and how cartels are formed, and behavioural economics provides some further insight into this question. This insight also applies to the assessment of tacit collusion (coordinated effects), which can be relevant in merger investigations.

In operating a cartel, or maintaining tacit collusion, the first step is to reach agreement on prices, volumes or customers. The likelihood of firms doing so is discussed in the literature on firm biases (see section 2.6). Adding to the existing theoretical understanding of cartels (which emphasises the importance of reputation and signalling), behavioural economics shows that building trust matters when firms try to reach a collusive agreement (Armstrong and Huck 2010). In laboratory experiments, collusion rarely occurs when there are more than two firms, unless there is face-to-face contact to build up trust before interacting in the market. This seems to indicate that, without prior trust being established, collusion is actually harder to facilitate with three or more firms compared with standard IO models.[65]

The expected pay-offs from participating in a cartel can be affected by consumer biases. The incentive to collude would be stronger if the pay-off from collusion is much higher than that from fierce competition. However, if, in the competitive outcome, a firm enjoys relatively high (unilateral) market power, the incentive to participate in the cartel will be much weaker. The discussion in section 3 shows that, in a market where consumer biases are present (such as endowment effects and inertia), the extent of firms' individual market power can be greater and more persistent than would follow from traditional models. As a result, the difference between a competitive outcome and a cartel outcome in a market with consumer biases may be narrower, and firms may actually be less likely to collude than in the absence of such biases.

Firm biases can also affect the pay-offs from participating in a cartel. Behavioural economics suggests that if firms care about relative profits rather than absolute profits, collusion may be less easy to sustain (Armstrong and Huck 2010). This is because the short-run benefits of deviating from the agreement are larger, since, by undercutting its rivals, a deviating firm not only boosts its own profits but also harms its rivals, and firms may get some satisfaction from harming rivals.

Finally, the literature on firm biases provides some insight into punishment and the losses from deviation from the cartel. Firms' responses may be more 'emotional' than would follow from traditional economic theory (Armstrong and Huck 2010). Therefore, a cartel member's response to deviation may be more aggressive than in the standard oligopoly models, and the losses from deviating would be greater than predicted. This could help to sustain collusion compared with situations where firms care only about their own profits (as, rationally, they would do).

The above insights are mainly theoretical, and may not be relevant in many instances. As noted in section 2.6, the literature on firm biases and its relevance for competition policy are areas for further development. Mainstream economic thinking about cartels and tacit

[65] In the IO models of oligopoly there is no particular threshold for the number of firms above which tacit collusion becomes impossible (it just has to be a small number).

collusion does not yet fully embed the insights from behavioural economics set out in this sub-section.[66] As this literature develops, it may provide some useful additional understanding of what makes collusion successful or unsuccessful, and could thus add to the list of factors that competition authorities take into account when assessing collusion or coordinated effects in a specific case.

4.3.5 Behavioural economics and vertical agreements

Vertical agreements are entered into between firms in different parts of the production or distribution chain to buy, sell or resell goods or services. As in other industries, vertical agreements often arise in the distribution of financial services products and may involve various arrangements and one or two parts of the value chain. The competition implications of these arrangements have recently been investigated by regulatory authorities such as the European Commission, the Autoriteit Financiële Markten (AFM) in the Netherlands, and the FSA.[67] Competition investigations under Article 101 TFEU or its national equivalents have also been applied to these agreements.

Vertical relationships and market outcomes in the distribution of financial products

The value chain in the financial services sector varies by type of product. For some products it can be complex. Behavioural economics can provide further insight into how the different distribution models and vertical agreements may affect consumer behaviour and how that may affect competition and market outcomes.

As discussed in section 2.5, the nature of the recommendation or advice to which a broker may be able to give access will depend on the relationships between the intermediary and the providers and the way intermediaries are regulated, as will the scope of products and providers. Consumer behaviour and awareness of these relationships are likely to affect the impact of these relationships on competition.

– **Tied brokers**—an insurance broker that is tied to a particular provider will give access only to the products of that provider, thus limiting the range of products for their customers. As long as customers are aware of this and shop around by approaching several insurance brokers, this should not necessarily affect the degree of competition. However, as noted in section 3, if less sophisticated consumers are not sufficiently aware, or if, more generally, consumers find it too much hassle to approach several different (tied) brokers, competition may be affected.

– **'Independent' or multi-tied brokers**—even if a broker is not tied to a particular provider and gives access to the products of multiple providers, the broker's recommendation may still be affected by the nature of its relationships with the providers. In general, as long as consumers have access to a number of brokers or directly to a number of providers, commissions may not result in significant concerns from a competition or consumer protection perspective.

  However, for more complex products, where consumers often rely on one adviser and the biases discussed in section 2.5 are more likely to prevail, competition and consumer protection issues may arise. In the UK, this was one of the reasons for a ban being imposed on commissions in relation to the provision of retail investment products.[68] There are currently discussions at the EU level about whether a similar ban should be imposed Europe-wide, and in the Netherlands about banning commissions in relation to certain non-life insurance products.[69]

  Commissions may also result in 'inefficient' switching (in this context, typically referred to as churn or sales bias). Commissions give intermediaries an incentive to sell products

[66] A recent treatise reflecting mainstream economic thinking on cartels can be found in Marshall and Marx (2012).
[67] Autoriteit Financiële Markten (2009). Financial Services Authority (2009b).
[68] See Financial Services Authority (2009b); Oxera (2009b), (2010b) and (2010c).
[69] See, for example, Ministry of Finance (2011) and (2012); and Maijoor (2012).

and to advise existing customers (eg, with pension products) to switch provider.[70] One of the implications is that, in the presence of commissions, a high switching rate is not necessarily an indication of healthy competition.

– **Price-comparison websites**—typically giving access to products of a wider range of providers, these websites give consumers choice and facilitate the comparison of prices across products from different providers. (However, such websites may also themselves raise competition issues.[71])

  In some cases, price-comparison websites act as brokers rather than as more neutral websites that simply collect information from retailers' websites. This means that they will receive commissions from providers or agree 'factory gate prices' with providers, and then set their own retail prices. Consumers may not always be aware of this.

A main competition concern about vertical restraints is that they may be used to foreclose access of competitors to inputs or distribution channels. As this involves interactions between firms and consumers, the relationship may be affected by consumer biases and therefore behavioural economics could provide additional insights into the assessment.

In competition law, to show that foreclosure has taken place, it is usually necessary to demonstrate that a significant part of the distribution channel is cut off. Behavioural economics suggests that it would be important to consider the extent to which consumers actually switch between distribution channels. As discussed in section 3, several factors may mean that such switching is limited owing to the endowment effect, loss aversion and inertia. Consumers may form trusted relationships with their advisers, or may not realise that the agent is tied or motivated by commissions.

A case in point is the ban on tied agency relationships imposed in Italy. In the context of a wider attempt by the Italian competition authority to liberalise the insurance market, a ban was placed on contractual clauses that prevent brokers from distributing products of multiple insurance providers.[72] First introduced in 2006 in relation to motor insurance, the ban was extended in 2007 to all non-life insurance products. Tied agency contracts were seen to restrict choice to consumers and foreclose distribution channels. By allowing brokers to offer insurance products from different providers, the authority hoped to make it easier for consumers to select the best product available, thereby increasing competitive pressure on providers.

These examples show how behavioural economics insights can sometimes be relevant to the assessment of restrictive agreements in the financial services sector (over and above the relevance that behavioural economics may have to market definition and the assessment of market power in such cases).

4.3.6 Behavioural economics and mergers: rationale and efficiencies of mergers

The relevance of behavioural economics to merger investigations has largely been discussed above in the context of market definition, the assessment of market power, and coordinated effects. Some additional insights come from the literature on firm biases.

One insight relates to the motivation behind a transaction. Mergers are mostly driven ultimately by some consideration of profit-maximisation—through expected efficiencies, synergies, growth opportunities, or enhanced pricing power. However, the behavioural economics literature highlights that there could be other motivations for mergers. As Armstrong and Huck (2010) note, CEOs may care about their pay relative to other CEOs, or the firm's market share relative to that of others. This can lead to deviations from profit-maximising behaviour and to waves of merger activity.

[70] See Financial Services Authority (2009b), p. 71.
[71] See, for example, Office of Fair Trading (2010b), section 9 'Price comparison websites'.
[72] Autorità Garante della Concorrenza e del Mercato (2009). Senato della Repubblica (2006).

A merger may also be driven by optimism bias on the part of senior management as regards the firm's ability to realise efficiencies post-merger or to increase prices. Managerial overconfidence could explain why companies that undertake mergers sometimes seem to underperform.

The fact that mergers may take place for reasons other than profit-maximisation does not really affect the standard analysis of unilateral and coordinated effects in merger investigations. However, it can help competition authorities to gain a better understanding of the rationale behind the transaction, which can sometimes be relevant for the assessment of the likely impact on competition and efficiencies.

4.4 Implications for empirical techniques applied in competition investigations

4.4.1 Econometric analysis: behavioural economics and revealed preferences

Competition authorities and parties are both increasingly using econometric analysis in competition cases to provide additional evidence about the relationship between variables (eg, price and quantity, in the case of market definition). Using demand and price data, a regression can be undertaken estimating the effect of changes in price on demand.

By analysing past data on prices and quantities, regression analysis assesses consumers' revealed preferences—what choices consumers actually made in the past, given the prices and other factors at the time of purchase. This implies that any effects of bounded rationality and consumer biases are already reflected in those choices, and hence already taken into account. As such, the insights from behavioural economics do not necessarily affect the actual outcomes of econometric analysis.

Behavioural economics can nevertheless make an important contribution to econometric analysis. By informing practitioners about customer behaviour and helping them to understand how the markets function, behavioural economics can assist in correctly formulating the testable hypothesis and specifying the econometric model. For example, if the practitioner is aware that the market may be characterised by sophisticated and naive consumers, they may incorporate this into their demand model as a testable hypothesis.

Furthermore, behavioural economics may be used to interpret econometric results and match them to underlying market and consumer dynamics. For example, if an econometric regression finds that demand is particularly inelastic in a market for a secondary product, behavioural economics may explain why customer switching in that market may be difficult (eg, the endowment effect or loss aversion).

4.4.2 Consumer surveys: best practice based on insights from behavioural economics

Consumer surveys are an alternative approach to estimating the responsiveness of consumers to price (or other product features). Their appeal is that they can be relatively cost-efficient and quick (although more sophisticated variants of customer surveys can be more elaborate and expensive). Through surveys, information on customers' stated preferences can be obtained—ie, what they say they would do after a price increase or if they were forced to select an alternative product—as opposed to revealed preferences reflecting what they actually did (or would do).

Conjoint or discrete-choice surveys are a more sophisticated and generally more robust type of survey. Instead of asking respondents what they would do after a hypothetical price increase, a conjoint survey asks them to choose among products with different characteristics (price being one of these), which more closely resembles the actual choice-making situation that customers often find themselves in. The merits of conjoint analysis over more simple surveys can thus be seen from a psychology and behavioural economics perspective.

Competition authorities and practitioners increasingly use survey evidence. The NMa has used surveys in a number of financial services markets in different contexts. For example, in a mortgage market study in 2011, it relied on surveys to elicit consumers' preferences in terms of their willingness to switch to less established (foreign) providers (NMa/Monitor Financiële Sector 2011). As a complement to these, a real-life check was undertaken analysing the click behaviour of consumers on a mortgage-comparison website.

There is significant debate about the usefulness and reliability of surveys. One well-understood potential shortcoming is that the survey responses may be biased and therefore not reliable. This is one area where behavioural economics has already provided significant added value to competition policy—not just in understanding consumer behaviour in the market concerned, but also in designing the survey method itself. In recent years, there have been useful lessons in how to limit the risk of bias in survey results, drawing directly on the insights from psychology and behavioural economics. An important contribution to this learning is the guidance document published jointly in 2011 by the OFT and Competition Commission in the UK, setting out good practice in the design and presentation of consumer survey evidence in market definition and merger inquiries.[73]

Lessons from behavioural economics on how biases in surveys can be dealt with

Some specific lessons on survey design can be derived from the behavioural economics literature (eg, Lucey 2005). The literature on survey biases is not new, and is rooted in both marketing and psychology. However, the survey biases that are relevant for competition policy can be understood through behavioural economics terminology. The recognition of biases should help with survey design and minimise their distorting effects. The following is a non-exhaustive overview of behavioural biases and weaknesses that can undermine the reliability of surveys.

– **Framing bias**—respondents may be influenced by the framing of questions. When asking consumers a question to define the market for add-on insurance (such as a question about which products consumers considered before purchasing the insurance), the outcome of the survey may differ depending on whether the questions are framed positively or negatively. For example, if consumers are asked directly whether they shopped around for a particular secondary product, they may indicate that they did not, but if asked whether they took into account the price of the secondary product while shopping around for the primary product, the same consumers who responded negatively to the former question may now respond in the affirmative. This illustrates that the framing should match as closely as possible the actual purchasing and decision-making process of consumers.

– **Action versus intent**—surveys ask respondents to indicate their hypothetical action (or intent), which may well differ from their real action. For example, when asked to indicate their response to a price change, consumers may interpret the question as that they are supposed to switch to another firm. If consumers would experience this price increase in practice, they might not switch if there are strong endowment and inertia effects. Actual switching could then be lower than the survey results suggest.

  The literature has also found that survey respondents tend to overstate their propensity to take actions that require some effort (Tourangeau, Rips and Rasinski 2000). Consequently, their responses reflect what they believe to be the 'best' response, rather than necessarily what they would do in practice. This relates to the issue of time-inconsistency, discussed in section 2. Consumers may think that they will take action to switch mortgage provider, ignoring the likelihood that, when the time comes to do so, they will put this off.

[73] Office of Fair Trading and the Competition Commission (2011). This guidance document also makes some general points about statistical significance and the statistical properties of surveys. The discussion here focuses on consumer biases in surveys.

Practical lessons from behavioural economics for survey design

From the behavioural economics literature and the Competition Commission/OFT guidance document, a number of practical lessons emerge that practitioners and competition authorities can bear in mind.

– **Use of pilot surveys**—the increased awareness of consumer biases in surveys has in recent years encouraged piloting; for example, testing the extent to which consumers understand the questions, checking to ensure that response scales do not introduce systematic biases, and not incorporating irrelevant variables into the econometric analysis of survey evidence. In this sense, knowledge of behavioural economics makes it easier for competition authorities to create reliable surveys.

– **Ensuring a representative sample of the population: what behavioural economics adds**—statistical techniques are available to assess whether the sample is representative. However, while it is generally straightforward to ensure that the sample is representative in terms of easily observable and objective characteristics such as age, gender and socio-demographics (and these in themselves may be correlated with differences in behaviour), it may be more challenging to ensure that the sample is representative in terms of other differences in behaviour, in particular types of behaviour that are correlated with characteristics that are more difficult to observe.

  For example, although data on socio-demographics and level of education may be used as proxies for the extent to which consumers are sophisticated or naive, this may not always be correct. Likewise, it could be that consumers who are familiar with financial issues are more likely to complete a survey on financial issues than those who are less familiar (a form of self-selection bias). Careful explanation of the survey purpose and questions could mitigate non-participation of consumers with less familiarity.

– **Incentives offered to participants**—care needs to be taken in providing people with incentives to participate in a survey (eg, in the form of payments). While financial incentives can improve participation, the literature on social contracts illustrates that this can have an adverse impact on the quality of response.[74] For example, subjects may be tempted to give responses that they believe would be appreciated by the survey organiser. Alternatively, they might be indifferent and careless, participating for the payment only.

– **Wording of survey questions**—the language used in surveys should be clear and easily understood, and should not encourage consumers to provide tactical responses. In competition cases, lessons from previous surveys indicate that such problems could be minimised in practice by:

  – avoiding jargon such as ‘substantial lessening of competition’ because consumers may not understand this;

  – avoiding any indication or suggestion that consumers are interested parties, as this could encourage responses to influence policies (a ‘strategic bias’);

  – not mentioning the role of the government, since responses of certain consumers could be influenced by their negative or positive perception of the government.

  In a previous market investigation survey, the Competition Commission identified a potential ‘acquiescence bias’, in which consumers were asked: ‘Do you know how much [name of bank] charges when you set up a standing order?’, and given the response categories: ‘yes’, ‘no’, ‘not sure’, and ‘refused’ (Office of Fair Trading and Competition Commission 2011). The combination of an assertive question and response categories

[74] See, for example, Singer (2000).

was deemed to push consumers to respond 'yes' in order to avoid being regarded as poorly informed.

– **Percentages and figures**—many people have difficulties understanding percentage changes. In line with this, consumers may be more likely to understand questions about price increases if these are framed in terms of absolute amounts, or in both absolute and percentage terms.

4.4.3 Other techniques: using experiments for market definition and merger analysis

Experiments are commonly used in behavioural economics to gather empirical information about individuals' actions. To Oxera's knowledge, they have not been used very often for the purpose of competition investigations, but there seems to be some potential to do so.[75]

In the absence of actual information about consumer behaviour in the specific context in question, the value of experiments can be particularly high. Experiments can also help in getting around some of the problems that may be present in undertaking surveys (as discussed above). There are broadly two types: laboratory experiments and field experiments.

In laboratory experiments, people are asked to make decisions in a controlled setting—for example, in a room monitored by the researchers, potentially using interactive computer simulations. The results are monitored electronically, and the controlled environment enables multiple trials of the same scenario, allowing a picture to be built up of typical behavioural responses. The participants are tested to ensure that they understand the rules of the experiment, and the results are often linked to financial rewards, to ensure that participants have a stake in the outcome.

As the name 'field experiments' suggests, these are conducted in a real-world (or 'field') setting. They use natural 'shocks' to gather information about consumers' response—for example, consumer behaviour in response to changes in prices, the availability of products, or the presence of suppliers.

Experiments, either laboratory or field, tend to be less vulnerable to the aforementioned behavioural biases and weaknesses involved in surveys because they rely on actual rather than hypothetical choices. They can be used to determine a consumer's actual response to a price increase in the specific context of the competition issue being investigated—for example, dependent on whether the product is a simple one, is comprised of a primary and then a secondary product, or a situation where there are primary and add-on fees.

Practitioners can even test whether there is a statistically significant difference between consumer responses to hypothetical increases in prices when this is presented as a simple frame versus the more complex frames that are closer to reality. In effect, competition authorities could use this as a sense-check on the validity of their SSNIP test approach.

Experiments could be used to support market definition in a number of ways. Laboratory experiments could be used to test the validity of a comparison of product characteristics by exploring consumers' understanding of products and product characteristics. The degree of control over the information on which people base their decisions is high in laboratory experiments. This provides an advantage over field experiments, where the information available to people to make their decisions can vary.

Field experiments provide an alternative to surveys as a source of testing consumer responses to price increases. In the event of a sudden price increase in certain products—for example, due to an external shock in input prices—actual consumer responses can provide

[75] As this is an unexplored area, this report sets out the potential usefulness of experiments in the context of competition policy, but their limitations would need to be explored further.

valuable information, which, in turn, can be used as part of a SSNIP test. Field experiments take this principle further by controlling the shock to prices that occurs.

There is therefore scope to employ experiments more frequently when defining relevant markets or assessing the closeness of competition in specific cases. (See Box 4.1 for insights into how such experiments might work.)

Box 4.1 Potential for experiments in market definition and merger cases

The literature pointing to experiments being used to define markets or assess the closeness of competition in merger cases is sparse. Meyer (2006) suggests that a controlled experiment could be undertaken by randomly allocating differing surveys to different respondents. However, this is not the same as using information on real decision-making by consumers in a laboratory or field setting, in response to financial incentives, when conditions are controlled by the practitioner.

There are aspects of the choice problem that may never be captured in a survey, or even in a laboratory setting where participants are under abstract, controlled conditions and are subject to financial incentives (although laboratory experiments with real-world products are different). Essentially, it may be difficult to place a consumer 'in the moment', emotionally, in a survey or under sterile laboratory conditions. For example, is it really possible to predict the value of time for a commuter, in order to develop isochrones and to define a geographic market, when the person being surveyed is not at the train station and already experiencing delay?[76] (See also the next sub-section.)

It is of note that the marketing departments of large companies can and do regularly use controlled field experiments to gather information on consumer responses to changing product prices and attributes, and to gauge demand elasticities. An example in financial services is a field experiment by Bertrand et al. (2010) in South Africa in relation to direct mail, whereby a consumer lender randomised advertising content, loan price, and loan-offer deadlines simultaneously, to examine the impacts of each of these individual features.

These types of field experiment might also be used to assess whether two heavily marketed brands are substitutes. This is difficult to gauge in a simple survey, since the parts of the brain that respond to the stimulus invoked by the brand in the physical world are not activated through a somewhat abstract survey. As Lemley and McKenna (2012) note, neuroscience research shows that brands convey emotional content as well as information about product characteristics:

> This is why, despite the fact that people tend to prefer Pepsi over Coke in blind taste tests, those exposed to the brand names during the test tend to prefer Coke: exposure to the Coca-Cola brand stimulates a region of the brain not stimulated in blind taste tests. When preferences created by that information or those attachments are substantial and rivals cannot readily attain the same status, then it is simply wrong to say that the brand does not constitute its own relevant market. Demand is not price elastic between the two. And the trademark itself prevents supply substitution.

The authors highlight that, since intellectual property rights contribute significantly to this product differentiation effect, the existence of such rights makes it more likely that two products that might otherwise be regarded as competing with one another in the same market might not be effective substitutes for each other. This could even lead to individual, brand-specific markets.

While the authors do not explore whether this has implications for running experiments, it would seem that there is a role in assessing the impact of branding on consumer perception and biases by running real laboratory and field experiments. For example, such an experiment could involve placing Coke and Pepsi in vending machines next to one another, and varying the prices. While these sorts of real-world experiment may often be difficult to implement, they need not be any more expensive in practice than designing and implementing surveys.

4.4.4 Catchment area and generalised travel cost analysis for geographic market definition

Techniques used for geographic market definition, catchment area and isochrones analysis often rely on actual consumer behaviour (revealed preferences) to define the market. Because of this, these techniques already incorporate any behavioural biases; hence, there seems to be no reason to amend techniques such as catchment area and isochrones

[76] See Oxera (2011).

analysis. Naturally, the presence of behavioural biases may change the outcomes as determined by these techniques, as well as the interpretation of the outcomes.

Traditional tools in transport economics capture most factors relevant in consumer views, such as drive times and the perception of 'generalised travel costs' (the sum of the monetary and non-monetary costs of a journey). Calculating generalised travel costs can take into account many factors, such as opportunity costs (what else you could have done during that time), or the fact that some of the time spent has a greater 'cost' (waiting at a railway station is more 'costly' than sitting in a comfortable leather seat while on the move).[77] Behavioural economics can provide further insight into how such consumer preferences and perceptions can translate into actual consumer behaviour. This is an area for further research.

4.5 Conclusions

4.5.1 Behavioural economics, market definition and the assessment of market power

As noted in section 3, one important conclusion from the behavioural economics literature is that firms engaging in practices such as partitioned and complex pricing may have a greater and more persistent degree of market power than would follow from the traditional models of competition. Whether such a higher degree of market power is sufficient to meet the thresholds for intervention under the traditional competition rules against restrictive agreements, abuse of dominance and anti-competitive mergers would need to be assessed on a case-by-case basis. Such an assessment starts with market definition.

Insights from behavioural economics do not significantly change the practices associated with market definition in competition investigations. The SSNIP test remains an appropriate conceptual framework for defining the market in the presence of the consumer biases discussed in section 2. Conceptually, because the SSNIP test is concerned with *how* consumers respond to price, and not *why*, it may often not really matter whether these responses are influenced by biases. Nevertheless, behavioural economics insights into why consumers behave in a certain way can help in framing the market definition analysis (eg, when specifying the econometric model or survey to be carried out) and in interpreting and understanding the results of the analysis.

Some insights are relevant for the practical application of the SSNIP test. It is well known that the choice of the price base to which a price increase is applied as part of the SSNIP test is crucial in obtaining a meaningful market definition. Behavioural economics suggests that this question is especially relevant where more than one price is involved—for example, where there are bundled products, add-ons and drip pricing. Furthermore, it may be relevant to consider price-discrimination markets based on customer groupings that follow from the behavioural economics literature—in particular, the distinction between sophisticated and naive customers.

The application of the SSNIP test to markets with drip pricing or secondary products may lead to finding 'pockets' of market power—narrow markets, with market power/dominance for the provider. The PPI case is an example. This makes the abuse of dominance rules a potentially relevant instrument to intervene in such markets (in particular in jurisdictions that do not have the same market investigation powers as exist in the UK).

However, significant caution should be exercised in such circumstances; there is little precedent of such intervention, and there may be a risk of over-intervention. Market definition is intended to be an informative first step in the assessment of market power and competitive constraints: competition authorities and practitioners need to be careful to avoid a 'framing

[77] More background on generalised cost can be found in Button (1993).

bias' where a market power finding rests on only a narrow market definition and does not take into account other indicators.[78]

4.5.2 Behavioural economics and the assessment of conduct and mergers

Behavioural economics has a great deal of insight to add on the effects of particular business practices on consumers and on competition (as discussed in section 3). This is why it can be of relevance to the effects-based approach to abuse of dominance and restrictive agreement cases.

In many conduct and merger cases in consumer markets, it may be useful to consider whether there any relevant behavioural economics aspects, not as the sole approach, but rather as part of the broader economic toolkit with which a case can be analysed. One cannot really classify competition investigations according to whether behavioural economics is relevant or not; sometimes consumer biases and bounded rationality will be a major factor in the investigation and other times it will be just one aspect among others that need to be considered.

Abuse cases involving the direct exploitation of customers are rare, and usually limited to excessive pricing cases (as opposed to other exploitative practices, such as reducing service quality). As noted above, behavioural economics indicates that firms may sometimes have a greater ability to exploit their customers (or, more specifically, exploit consumer biases) than would follow from traditional models. Whether this means that competition authorities should look more closely at exploitative abuse cases, or leave it to consumer protection and financial regulation policies, is a question for further debate (see section 6).

As regards bundling and tying, behavioural economics shows that the consumer biases discussed in section 2 may reduce competition within a particular market or between markets, providing additional credence to the notion that a company can lever market power from a market in which it is dominant into one in which it faces competition. Whether such competition concerns can be dealt with under the rules on abuse of dominance is less clear. First, a dominant position must be established, which depends on market definition and the assessment of market power (as discussed above). Second, there is as yet relatively little precedent on such cases under the abuse of dominance provisions.

The assessment of restrictive agreements (horizontal and vertical) and mergers can be largely undertaken using traditional approaches, which are well understood by competition practitioners. However, there are a number of useful insights from behavioural economics which could be used to supplement these traditional approaches.

– In the area of cartels, behavioural economics flags additional considerations (beyond those identified in traditional models) that could influence the likelihood of cartel behaviour being sustained. This insight is equally relevant for the assessment of coordinated effects (tacit collusion) in merger cases.

– As regards vertical restraints, the main insight from behavioural economics into the assessment of vertical restraints is in relation to foreclosure of distribution channels. In financial services, the role of financial advisers in the distribution chain is of particular interest, and the way consumers behave in this context has been studied in the behavioural economics literature, shedding light on how competition or regulatory authorities could assess such vertical arrangements.

– The relevance of behavioural economics to merger investigations has largely been discussed in the context of market definition, the assessment of market power, and

[78] Whether application of the abuse of dominance provisions results in over- or under-intervention is ultimately a subjective question, and has been debated more generally. From an economics perspective, there is consensus that interventions against unilateral conduct should be made with caution, so as not to stifle competition and protect inefficient competitors. This also holds in markets characterised by consumer biases.

coordinated effects. Some additional insights come from the literature on firm biases, in particular with regard to the motivations to merge, and merger efficiencies.

4.5.3 Behavioural economics and the empirical techniques used in competition investigations

Behavioural economics has provided some useful additions to the toolbox of empirical techniques used in competition investigations.

- For econometric analysis of revealed preferences, insights into consumer behaviour can help to identify which variables to include in the model, and to interpret the results of the analysis.

- Behavioural economics sheds significant light on how surveys for market definition and merger analysis can be designed to obtain reliable information on stated preferences. Insights from psychology and from the behavioural economics literature have already helped guidance to be developed on best practice in the use of surveys, and have generated a better understanding of their merits and limitations.

- Finally, there is potential to make greater use of experiments in competition investigations, a tool frequently used in the behavioural economics literature that can add to, or improve upon, results obtained from econometric and survey analysis. The use of experiments in competition policy is as yet an unexplored area.

5 Behavioural economics and remedy design

5.1 Remedies in competition policy: what behavioural economics has to add

Most of the literature on competition policy focuses on the identification and analysis of competition problems. Much less attention has been paid to the design of remedies for these problems. As one commentator noted back in 2007, 'Everybody likes to catch them, but nobody wants to clean them.'[79] This is an important shortcoming and is increasingly recognised as such among competition officials and practitioners.

This section explores how behavioural economics insights can help in the design of remedies. These remedies can be in relation to cases that deal directly with market outcomes and competition concerns resulting from consumer biases, as discussed in sections 3 and 4, but also cases where the competition problems are more 'traditional' (ie, not mainly related to consumer biases as such), but where behavioural economics principles can be applied to remedy those problems.

The term 'remedy' is used here in a wide sense. It includes not only remedial actions that directly alter the structure of the market or the behaviour of the parties under investigation, but also the imposition of fines on those parties. Competition authorities and courts around the world use different combinations of these types of remedy.[80]

Section 3 discussed how the presence of consumer biases and bounded rationality on the demand side can have a negative impact on market outcomes. By the same token, behavioural economics shows how competition problems might be resolved through remedies targeted at the demand side. This represents a shift in focus from traditional competition policy remedies, which have focused mostly on the supply side—for example, structural remedies breaking up firms, requiring divestments, or removing legal entry barriers; or behavioural remedies such as restrictions on firms' pricing.

Within behavioural economics there are different schools of thought about remedies. The 'liberal paternalist' school would argue that simple 'nudges' can be introduced which do not restrict consumer choice in any way. By contrast, more interventionist remedies do restrict consumers' choice sets, but are aimed at increasing the power that consumers have over the choices available to them. These are broader interventions aimed at reinforcing 'consumer sovereignty'.

This section is structured as follows:

– what are the main approaches to remedies that follow from behavioural economics? These approaches are not all directly applicable to competition cases, but would form the basis for designing any such competition remedy; (section 5.2)
– how are these approaches applied in actual competition cases? (section 5.3)
– what does behavioural economics have to say about setting fines? (section 5.4)
– section 5.5 concludes.

[79] Comment made by Tad Lipsky at the 2007 Federal Trade Commission hearings on Section 2 of the Sherman Act (transcript of March 28th, p. 47, at http://www.ftc.gov/os/sectiontwohearings/docs/transcripts/070328.pdf).
[80] The award of financial damages against the infringing party in follow-on damages actions before national courts is another form of remedy, but is not discussed here.

5.2 Remedies for market distortions resulting from consumer biases

5.2.1 Liberal paternalist remedies

The liberal paternalist school of thought recognises that it is not completely understood why people behave the way they do. In addition, it acknowledges that a heavy-handed approach by policy-makers—for example, banning certain products, or subsidising others—is not always desirable or cost-effective, and may have unintended consequences. Therefore, this approach involves designing remedies that, to some extent, work *with* consumers' biases and limited decision-making abilities, rather than necessarily seeking to correct them. This does not necessarily mean more intervention, but rather 'smarter' intervention. Given the influence of framing, and the impediments that people may face in making decisions, 'nudging' seeks to alter the choice architecture within which people make decisions.

Such remedies might include the following.

– **Simplifying information disclosure to key salient points**—this is aimed at overcoming framing, information overload, and inertia. For example, in the field of consumer contracts, information is most relevant at the point when a decision is made. People are averse to information overload and complexity, so simplifying the salient terms of an agreement to no more than one side of paper may improve decision-making.

– **Activating consumers to make a choice**—this is the 'forced choice', as opposed to letting people remain inert or simply opt for 'the default'. For example, it might involve requiring people to confirm by phone whether they wish to renew their insurance policy with their current provider, rather than the contract being renewed automatically. This may overcome consumer inertia.

– **Using default opt-in or opt-outs**—where an outcome is clearly superior from the consumers' point of view (as opposed to the sellers'), the policy might be to set that outcome as the default, without restricting consumers' ability to choose an alternative. For example, it may be that people are defaulted into an employee pension plan, but can then opt out. This can help overcome inertia and loss aversion (in case of fear of regret of opting into the wrong policy).

Such interventions may come at a lower cost than more heavy-handed interventions (such as subsidies or education programmes). To implement them, it is also not always necessary to understand completely consumers' preferences or decision-making processes. If such interventions do not work effectively, there are only limited unintended negative consequences.

Liberal paternalist interventions can also be aimed at ensuring that affected consumers (eg, naive consumers) are better off without making others (eg, sophisticated consumers) worse off. However, such interventions may not always be enough to correct demand-side biases and encourage market functioning, especially if there are too few sophisticated consumers to protect naive consumers (see the discussion in section 3).

5.2.2 Information provision as a remedy

Providing information can sometimes make markets work better. This type of remedy could be used in competition cases as well as in markets with adverse outcomes generally.[81] What constitutes 'good' versus 'bad' information provision in this context has been examined in the

[81] For example, in the Netherlands the financial regulator, AFM, has explored how information provision can be used to help consumers make better choices. The AFM defines financial services as 'complex' if their monetary values depend on market developments and they are sold jointly. Since 2002, suppliers of such complex financial services are required to provide a 'Financiële Bijsluiter' to consumers, which seeks to support consumer choice of financial services by informing consumers about the aim and functioning of the financial product in question, the risks and costs involved, and the financial implications if the customer wishes to cancel the product. The AFM facilitates the design of the Financiële Bijsluiter by suggesting graphical presentation of relevant information.
See http://www.afm.nl/nl/professionals/regelgeving/informatieverstrekking/fb.aspx acccessed March 2013.

academic literature (see Box 5.1). The main message from this literature is that, in getting consumers to make active choices, salient information provision is important, in terms of both the substance of the information and how it is framed (linking back to the discussion in sections 2 and 3).

Box 5.1 Information provision, defaults and consumer behaviour

Having undertaken several experimental economics studies on consumer behaviour in the fields of health and financial services, Laibson (2010) consistently finds the following:

- using default options works (when preferences are aligned to the default);
- simplification works;
- active choice works;
- social marketing is sometimes quite weak;
- incentives are often quite weak;
- education is usually ineffective.

An EU-sponsored report by Decision Technology (2010) on consumer decision-making in retail financial services suggested remedies relating to financial information provision:

- *do not* rely on financial education as a silver bullet (financial literacy/education has a relatively small impact in getting consumers to act);
- *do* simplify product information disclosure (require or encourage the presentation of a few key pieces of information, clearly separated from any extraneous information);
- *do* standardise product information disclosure (the same information for different products within a class and, where possible, across product classes);
- *do* standardise the information disclosure format (so that alignment of product information is straightforward).

In the USA, a Simplification Directive has been introduced in the form of a guideline that government agencies should follow when disclosing information to people in various forms, although it also seems relevant to the information that financial services providers might disclose (see Sunstein 2010). The guidance on 'summary disclosure' states that agencies should provide 'clear, salient information at or near the time that relevant decisions are made'. This is often 'at the point of purchase', in which 'agencies highlight the most relevant information in order to increase the likelihood that people will see it, understand it, and act in accordance with what they have learned'.

5.2.3 More restrictive consumer sovereignty interventions

In certain instances, interventions may be considered that make some customers better off and some worse off, but which, on cost–benefit grounds, result in an overall improvement. Such interventions may be aimed at protecting 'consumer sovereignty'. Pure liberal paternalist interventions also seek to achieve this, but consumer sovereignty interventions tend to include measures that go beyond just nudging consumers into the desired behaviour.

Such interventions include, for example, banning firms from engaging in certain charging behaviours (eg, point-of-sale add-ons, add-on charges and hidden penalties) and marketing activities (eg, tobacco advertising, and restrictions on television advertising of food and drink products to children). These interventions require a great deal of caution. Policy-makers ultimately have to assign weights to the welfare impacts on the different groups of producers and consumers.

Consumer sovereignty interventions may restrict consumer choice in a narrow sense, but increase consumers' control over their available choices in the wider sense of the term. Put another way, they enable consumers to determine what firms produce, rather than allowing firms to determine what consumers buy, so they move towards preserving consumer sovereignty.

In designing such interventions, there can be a fine line between liberal paternalism and simply paternalism. The UK Competition Commission investigation into personal current accounts in Northern Ireland perhaps came close to it. One of the competition concerns identified was that, in general, consumers do not actively search for alternative personal

current accounts. However, the Commission also noted that 'customers are generally not particularly interested in personal current accounts', and that 80% of those surveyed who had not switched bank gave as a reason that they had been with their current provider for a long time (Competition Commission 2006a, para 8 and Appendix 4.3). If consumers do not care about a product, should competition authorities? This is a policy question that merits consideration before intervening in a market.

5.3 Applying behavioural economics remedies in competition cases

5.3.1 Remedies in the European Commission *Microsoft* cases

The *Microsoft* cases in the EU—also discussed in section 4—show how the insights from behavioural economics can be of relevance in standard Articles 101 and 102 competition cases. The competition problem in these cases (the abuse) was one of product bundling—ie, not necessarily a market outcome driven by consumer biases along the lines discussed in section 3. Yet the remedies to this competition problem had behavioural economics aspects. In fact, one of the remedies that the Commission put forward turned out to be ineffective, and could perhaps have been improved if it had been based on insights from behavioural economics.

Part of the remedy was that Microsoft should make available versions of Windows with and without Media Player installed. In the event, few copies of the version without Media Player were sold (see Ahlborn and Evans 2009). This is perhaps not surprising since both versions were offered at the same price. When presented with the two options, consumers would most likely choose the version with Media Player already installed. A more effective remedy might have been to include a CD containing a random choice of media players for consumers to choose from. By forcing consumers to make a conscious choice in this way, and by not including a default option, consumers might have selected an option that was more suited to their needs.

In a subsequent case, the Commission investigated the bundling of the Microsoft Internet Explorer web browser with Windows and the remedy was more in line with behavioural economics insights (European Commission 2009b). Users of Windows-based PCs with Internet Explorer set as their default web browser, and who also subscribe to Windows Update (which updates their operating system), would be taken to a screen providing, at random, Internet Explorer and a number of competing browsers such as Firefox and Safari. For these consumers, this remedy in effect removed the impact of the default option, instead forcing them to make an active choice of their preferred browser.

A forced-choice approach might therefore be more effective in cutting the tie between Windows and Internet Explorer, and in dealing with instances of anti-competitive bundling or tying more generally. Hence, while the behavioural remedy in the Microsoft Media Player case by itself achieved little in restoring competition in the bundled market, the behavioural remedy in the Internet Explorer case—even if it appeared to be more interventionist—sought to restore competition by forcing customers to make an active choice.

5.3.2 Remedies in the PPI case

The most far-reaching remedy proposed by the Competition Commission in the case of PPI (also discussed in section 4) was a prohibition on selling PPI at the credit point of sale and within a fixed time period of the credit sale—the 'point-of-sale prohibition' (Competition Commission 2010). This remedy would give consumers time to shop around and encourage them to consider more carefully the price and quality features of PPI before purchasing it. It would also give stand-alone providers of PPI the opportunity to offer their PPI products more effectively. This would be expected to increase competition. The Commission concluded that the other (informational and behavioural) remedies that it proposed would not be sufficient to address the identified competition issues.

The Competition Appeal Tribunal subsequently found that the Competition Commission had failed to take into account the loss of convenience to consumers that would follow from the imposition of the point-of-sale prohibition.[82] The case was remitted to the Commission for reconsideration, which conducted further research (in particular, in the form of a number of conjoint analyses) to assess the costs and benefits of the prohibition remedy prohibition' (Competition Commission 2010).

This consumer research raised some interesting distributional issues. The survey evidence showed that, for personal loan PPI, 60% of consumers prefer the convenience of purchasing PPI at the point of sale (Accent 2010). This indicates that, for most consumers, the prohibition remedy would remove their current preferred choice. However, the Commission went on to find that the other 40% of consumers who prefer to purchase away from point of sale valued this option more than those who prefer to buy at point of sale (notwithstanding that those who wish to buy away from the point of sale could already do so, and their awareness of this could be enhanced by other remedies). The Commission concluded that, on balance, consumers overall would benefit from a point-of-sale prohibition.

This example illustrates that it is far from straightforward to design remedies that will benefit everyone, and that, when assessing the costs and benefits of remedies, competition authorities may often have to consider how to value the preferences of different groups of consumers. In this particular case, the remedy resulted in an inconvenience to 60% of customers and a potential benefit to the remaining 40%. These benefits would materialise only if these customers were indeed to decide to use their extra time to shop around.

5.3.3 Lessons from competition cases: need for empirical, laboratory and field testing

The PPI case demonstrates that, when designing demand-side remedies, it is important to obtain empirical evidence of their likely effects on consumers; it is not enough to assert that biases exist and that a specific remedy will correct them. In general, in these kinds of case, such evidence might be obtained from the empirical literature, by undertaking experimental analysis, or by undertaking other forms of 'road-testing' of remedies.

The cases discussed in this section show that there is scope for improving remedies by making better use of the insights from behavioural (and experimental) economics. Policy-makers and competition authorities are beginning to recognise the importance of behavioural biases in their analysis of competition problems, but do not yet routinely consider what types of tool to use to gather evidence on whether certain remedies will work. To quote Laibson (2010): 'do not rely on intuition; run small-scale experiments first.' This is a developing area.

5.4 Setting fines

The hefty fines imposed by the European Commission in recent years have grabbed the headlines, raising awareness of competition law among business communities and the general public.[83] Fines are intended not only to punish the perpetrator but also to deter future infringements (by either the perpetrator or others).

Economic theory has shed some light on how deterrence works, often in a setting in which would-be offenders make rational trade-offs between the rewards of the illegal activity and the risk of being caught.[84] Behavioural economics provides some additional insights which, thus far, refer mainly to consumer behaviour as opposed to firm behaviour.

One insight on the consumer side is that because of the availability bias (discussed in section 2) people tend to forget past fines after a while, and hence may still not be sufficiently

[82] *Barclays Bank Plc v Competition Commission*, [2009] CAT 27, Judgment of October 16th 2009.
[83] The Commission's Fining Guidelines set out the steps and criteria for the calculation of fines (as do similar documents in other jurisdictions)—European Commission (2006). These guidelines partly followed those issued by the NMa (2001).
[84] Leading works include Becker (1968), Landes (1983), and Polinsky and Shavell (2000).

deterred. Another is that optimism bias (also discussed in section 2) can result in criminals underestimating the probability of something bad happening to them (ie, getting caught), and hence an uplift in the fine would be required to make deterrence effective. A further insight is that fines may sometimes be less effective than social norms in deterring undesired behaviour, since a fine may become like a normal price in the mind of an individual, making that individual feel less guilty about the behaviour.[85]

Whether these insights apply to firms is an open question. For behavioural economics to achieve more direct relevance for the setting of fines under competition law, the literature on firm biases would need further development.

5.5 Conclusions

Although remedy design has received relatively little attention in the competition policy literature in the past, this has begun to change, and behavioural economics has a great deal to add. Remedies based on insights from behavioural economics can be used in cases dealing directly with market outcomes and competition concerns resulting from consumer biases (eg, the PPI case). However, they can also be used more broadly in cases where the competition problems are not mainly related to consumer biases as such (eg, the *Microsoft* cases).

An important implication of behavioural economics for remedy design is that policy-makers need to understand better the demand side of markets in terms of how consumers actually behave. Collecting empirical evidence and testing the remedies are key steps in the process.

Behavioural economics points to smarter and more targeted remedies that deal effectively with behavioural biases by seeking to correct them or finding ways of working with consumers' biases to deliver a better course of action. Such remedies may be liberal paternalist in nature, which, in a pure sense, does not deprive consumers of choice, and which results in a better deal for affected customers without making matters worse for other consumers. Such remedies might include:

– simplifying information disclosure to the key salient points, to overcome framing, information overload, and inertia;

– compelling consumers to make a choice—the 'forced choice', as opposed to letting people remain inert or simply opt for 'the default';

– using default opt-ins or opt-outs—where there is a superior outcome for consumers, the policy might be to set that outcome as the default, without restricting consumers' ability to choose an alternative.

These interventions tend to be more cost-effective than more heavy-handed interventions (such as subsidies or education programmes). Another advantage is that they retain the freedom for consumers to choose, but alter the frame within which they access information and make choices. If such interventions do not work effectively, there should not be too many unintended negative consequences.

Interventions may also be aimed at preserving consumer sovereignty. This accommodates the possibility that some consumers (eg, sophisticated consumers) may be worse off as a consequence of the intervention, but that, in cost–benefit terms, consumers as a group are better off. It also means that not all interventions involve simple nudges, but instead that there may be bans on certain forms of conduct by firms in circumstances where there is a

[85] A well-known example in the literature is that of private day-care centres in Israel which began to charge penalties for picking up a child late. These penalties turned out to be counterproductive as parents felt less guilty about arriving late once they could just pay the fine. See Gneezy and Rustichini (2000).

clear detriment to consumers. A risk with these more restrictive interventions is that there can be a fine line between liberal paternalism and simply paternalism.

In any event, there is a policy debate as to whether the adverse market outcomes from consumer biases are best dealt with through competition policy or under consumer protection or financial regulation frameworks (see section 6).

6 Conclusions and policy discussion

6.1 Do competition law and economics textbooks need amending because of behavioural economics?

This report has presented an overview of how consumer biases influence market outcomes (sections 2 and 3), and has systematically reviewed the relevance of behavioural economics to the main competition policy instruments and tools, including remedy design (sections 4 and 5). The result is a practical overview that indicates a number of areas where, based on the current state of the literature, the insights from behavioural economics can already be useful for the analysis.

This is not to say that behavioural economics has, or should have, a radical impact on competition policy. Indeed, if one were to write, or update, a textbook on competition law and economics, most of the text would probably remain unaffected by behavioural economics. It is likely that, in many competition cases, the insights of behavioural economics will not play a significant role, either because the cases concern business-to-business disputes where consumer biases are of less importance, or because the traditional competition policy tools can account sufficiently for the effects of any consumer biases.

Instead, behavioural economics can be seen as providing useful additional insight. There are certain market situations and outcomes that are driven by consumer biases and bounded rationality, and that can be better understood or explained through behavioural economics than through traditional economic models.

As discussed in this report, phenomena such as search costs, switching costs and product differentiation have long been understood in the IO literature and in competition policy. The added value of behavioural economics is that it can cast further light on what drives search costs and switching costs, and on how product differentiation affects consumer behaviour, in each of the access, assess and act stages. It can then shed light on how firms might be able to exploit consumer biases.

Furthermore, in many conduct and merger cases in consumer markets, it may be useful to consider whether there any relevant behavioural economics aspects—not as the sole approach, but rather as part of the broader economic toolkit with which a case can be analysed (which also draws on the fields of IO, financial economics, and econometrics). One cannot really classify competition investigations according to whether behavioural economics is relevant or not; sometimes consumer biases and bounded rationality will be a major factor in the investigation and other times they will be just one aspect among others that need to be considered.

In a similar vein, remedies based on insights from behavioural economics can be used in cases dealing directly with market outcomes and competition concerns resulting from consumer biases (eg, the PPI case). However, they can also be used more broadly in cases where the competition problems are not mainly related to consumer biases as such (eg, the *Microsoft* cases).

There is an ongoing academic debate about whether and how behavioural economics influences the main models used in IO theory. This report has focused on the main effects on market outcomes that have practical relevance for competition policy. These academic and policy debates are far from concluded, as the behavioural economics literature continues to develop and its usefulness for practical application is increasingly being tested. This report will therefore not be the final word on this topic.

6.2 Competition policy versus consumer protection and financial regulation policies

This report focuses on competition law. This is perhaps not the most direct policy instrument to address adverse outcomes resulting from bounded rationality and consumer biases. In order to intervene under competition law, there must be an anti-competitive conduct, agreement or merger. This necessarily limits the extent to which competition policy can be used since , since there will not always be such triggers for intervention in markets with problematic outcomes.

Consumer protection policy and financial regulation may allow for more direct intervention. Indeed, much of the behavioural economics literature on shrouded pricing and other themes seems to have been written with consumer policy interventions in mind, rather than competition policy as such. There is also a question as to whether behavioural economics, and the state of the empirical evidence base to date, provides sufficiently robust conclusions to provide for the legal certainty required in cases in which anti-competitive behaviour is alleged.

The policy question therefore remains: should competition policy play a greater role in dealing with adverse market outcomes resulting from bounded rationality and consumer biases? Or should these situations be left to consumer protection and (where financial services are concerned) financial regulation? This report does not advocate one way or the other.

One policy theme explored (in sections 3 and 4) is the extent to which the rules on abuse of dominance are a suitable instrument for intervention. An important conclusion from the behavioural economics literature is that firms engaging in practices such as partitioned and complex pricing may have a greater and more persistent degree of market power than would follow from the traditional models of competition. Rivals may find it difficult to overcome consumer inertia and endowment effects. Can, or should, such situations be dealt with under the abuse of dominance rules?

In principle, such interventions might be possible if the evidence supports a finding of narrow markets with ‘pockets’ of market power (see the discussion in section 4). However, significant caution should be exercised in such circumstances; there is little precedent of such intervention, and there may be a risk of over-intervention. Market definition is intended to be an informative first step in the assessment of market power and competitive constraints: competition authorities and practitioners need to be careful to avoid a ‘framing bias’ where a market power finding rests on a narrow market definition and does not take into account other indicators.

An instrument that allows features of competition policy and consumer protection to be combined—and which may therefore be better suited for these cases than the abuse of dominance provisions—is the market investigation instrument in the UK. These investigations can be used to intervene in markets where competition appears to be ineffective, but where there is no obvious abuse of dominance or restrictive agreement. Remedies can be imposed on a forward-looking basis to address the adverse competition outcomes, including those arising from consumer biases. Other jurisdictions may wish to consider adopting such a regime, or seek other policy options to combine features of competition policy and consumer protection.

Whether intervention is through competition policy or consumer protection policy, the behavioural economics insights discussed in this report can be of relevance to both. The conceptual approaches to assessing market outcomes, and the importance of, and techniques for, collating empirical evidence on consumer preferences and behaviour apply to consumer protection and financial regulation policies as much as they do to competition policy.

Likewise, for any type of policy instrument it must be borne in mind that governments (or the people who work for them) are characterised by bounded rationality and biases too. An important lesson from other economic policy areas applies here as well: market failures, even if fully identified and understood, cannot always be effectively remedied because there can also be government failures. Not all adverse market outcomes resulting from bounded rationality and consumer biases can be remedied by governments, in part because governments are equally subject to biases.

Behavioural economics can enable smarter intervention, but does not necessarily imply more intervention. Just like a consumer's purchasing process can be affected by biases along the way, each stage in a competition authority's or other government agency's deliberations can similarly be affected by biases—which avenues are explored and not explored; which evidence is relied on and played down; the order in which market definition, market power and conduct assessment are conducted; who conducts this, and so on. Again, also on this topic, behavioural economics provides useful insight that adds to the traditional or mainstream thinking, rather than radically overhauling it.

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