

Occasional Paper No.1

Applying behavioural economics at the Financial Conduct Authority

April 2013

Kristine Erta, Stefan Hunt, Zanna Iscenko, Will Brambley



FCA OCCASIONAL PAPERS IN FINANCIAL REGULATION

Disclaimer

The views in this paper are solely the responsibility of the authors and should not be interpreted as reflecting the views of the Financial Conduct Authority (FCA). They do not. All errors or omissions are the authors' sole responsibility.

The Occasional Paper series

The FCA is committed to encouraging debate among academics, practitioners and policymakers in all aspects of financial regulation. To facilitate this, it publishes a series of Occasional Papers in financial regulation, extending across economics and other disciplines.

These papers cover topics such as the rationale for regulation, the costs and benefits of various aspects of regulation, and the structure and development of markets in financial services. Since their main purpose is to stimulate interest and debate, the FCA welcomes the opportunity to publish controversial and challenging material, including papers that may have been presented or published elsewhere.

The main factor in accepting papers, which are independently refereed, is that they should make substantial contributions to knowledge and understanding in the area of financial regulation. The FCA encourages contributions from external authors, as well as from its own staff. In either case, the papers will express the views of the author(s) and not those of the FCA.

If you want to contribute to this series, please contact Peter Andrews or Stefan Hunt at, respectively:

Telephone: 020 7066 3104; 020 7066 3554

Email: peter.andrews@fca.org.uk; stefan.hunt@fca.org.uk

These Occasional Papers are available on our website: www.fca.org.uk. Comments are welcome on these papers; please address them to the contacts listed above.

Biographical note

The authors work in the Chief Economist's Department of the Financial Conduct Authority. Using economic convention, authors' names appear in alphabetical order bar Will Brambley who was not involved in the later stages of writing the paper.

Acknowledgements

This paper has benefited from comments and additional research carried out by colleagues at the Financial Conduct Authority. We thank Peter Andrews, Peter Edmonds, Damien Fennell and other colleagues at the Chief Economist's Department. We especially thank Martin Wheatley and Julian Edwards for their support of this work, as well as Maria-Jose Barbero, Clive Gordon, Ed Harley, Tracey McDermott and Richard Taylor for their comments and advice. We also thank the following from outside the FCA who generously provided thoughts and feedback: Patrick Barwise, Doug Bernheim, John Beshears, John Campbell, Andrea Coscelli, David de Meza, Kristof Madarasz, economists from Oxera and seminar participants at the London School of Economics and Frontier Economics. All errors are our own.

Contents

Foreword	3
Executive summary	4
1. Introduction	11
Part I: Lessons from behavioural economics	13
2. How people make decisions	14
3. Biases and consumer behaviour in retail financial markets	16
4. Biases, firm behaviour and competition	21
5. Biases and traditional market failures	24
Part II: Applying behavioural economics at the FCA	26
6. Identifying and prioritising risks to consumers	28
7. Understanding the root causes of problems	33
8. Designing effective interventions	42
9. Conclusions	51
Annex	
10 key biases, their effects, firm responses and potential remedies	53
References	61
Endnotes	68

Foreword

A rapidly growing literature on behavioural economics shows that some errors made by consumers are persistent and predictable. This raises the prospect of firms designing business models that do not focus on competing on price and quality. Behavioural economics enables regulators to intervene in markets more effectively, and in new ways, to counter such business models and secure better outcomes for consumers.

The UK Parliament has created the Financial Conduct Authority (FCA) and has given it an additional objective and duty to promote effective competition, which we believe should be on price and quality (rather than on false focal points or strategies to exclude rivals at point-of-sale). To achieve this, the FCA will first need to undertake integrated analysis of economic markets. In other words, it will need to understand how information problems, consumers' behavioural errors and firms' competitive strategies combine to produce observed market outcomes.

This involves some change from the existing practice of most conduct regulators, with one of the biggest changes relating to greater focus on understanding consumer behaviour. This paper first sets out what behavioural economics tells us about consumer decision-making in financial markets. This is based on an extensive review of the available literature. It then discusses how behavioural economics can be, and should be, used in the regulation of financial conduct.

While I recognise that this is an independent piece of research, this paper is the first in the Financial Conduct Authority's Occasional Paper series, and an important one at that. I therefore add my support for the paper.

I believe that using insights from behavioural economics, together with more traditional analysis of competition and market failures, can help the FCA assess problems in financial markets better, choose more appropriate remedies and be a more effective regulator as a result. While applying behavioural economics also brings new challenges, I believe they are surmountable.



Martin Wheatley
CEO, Financial Conduct Authority

Executive summary

People often make errors when choosing and using financial products, and can suffer considerable losses as a result. Using behavioural economics we can understand how these errors arise, why they persist, and what we can do to ameliorate them.

Behavioural economics uses insights from psychology to explain why people behave the way they do. People do not always make choices in a rational and calculated way. In fact, most human decision-making uses thought processes that are intuitive and automatic rather than deliberative and controlled.

Academic literature identifies ‘behavioural biases’—specific ways in which normal human thought systematically departs from being fully rational. Biases can cause people to misjudge important facts or to be inconsistent, for example changing their choices for the worse when essentially the same decision is presented in a different way. In other words, our normal human thought processes can lead us to make choices that are predictably mistaken.

Market forces left to themselves will often not work to reduce these mistakes, so regulation may be needed. A good example is payment protection insurance (PPI). Firms were able to earn large profits on PPI products because many buyers fundamentally misunderstood PPI pricing and the limitations in its coverage. High PPI prices allowed sellers to attract more customers by offering mortgages at cheaper rates (which consumers focused on when choosing a provider). As a result, no firm had an incentive to advertise that PPI was a poor product for many people and charge appropriate mortgage and PPI prices. This would have made the firm’s mortgage more expensive and the firm uncompetitive. Intervention was needed to solve this problem.

While it is common sense that people make mistakes, behavioural economics takes us beyond intuition and helps us be precise in detecting, understanding, and remedying problems that arise from consumer mistakes. Integrating behavioural economics into the FCA can therefore help it be an effective regulator.

This paper has two parts. In Part I we summarise the main lessons from behavioural economics for retail financial markets:

- how consumers make predictable mistakes when choosing and using financial products; how firms respond to these mistakes, and
- how behavioural biases can lead firms to compete in ways that are not in the interests of consumers.

In Part II we describe how behavioural economics can, and should, be used in the regulation of financial conduct.

Part I: Lessons from behavioural economics

Why are there more behavioural problems in financial services?

For a number of reasons, consumer choice in retail financial products and services is particularly prone to errors:

- **Many products are inherently complex for most people.** Financial products are abstract and intangible and often have many features and complex charging structures. This contrasts with many ordinary products where consumers can easily understand what they are getting and the product has a single, simple price. Faced with complexity, consumers can simplify decisions in ways that lead to errors, such as focusing only on headline rates.
- **Many products involve trade-offs between the present and the future.** Often people make decisions against their long-term interests because of self-control problems, e.g. borrowing excessively using payday loans.
- **Decisions may require assessing risk and uncertainty.** People are generally bad (even terrible) intuitive statisticians and are prone to making systematic errors in decisions involving uncertainty. So we often misjudge probabilities and make poor insurance or investment decisions.
- **Decisions can be emotional.** Stress, anxiety, fear of losses and regret, rather than the costs and benefits of the choices, can drive decisions.
- **Some products permit little learning from past mistakes.** Some financial decisions, such as choosing a retirement plan or mortgage, are made infrequently, with little learning from others, and with consequences revealed only after a long delay.

Which biases affect consumer financial decisions?

To identify and correct mistakes we need to be able to detect biases. The table below lists the most relevant biases for retail markets, categorising biases according to how they affect decisions:

- **preferences** (what we want);
- **beliefs** (what we believe are the facts about our situation and options); and
- **decision-making** (which option gets us closest to what we want, given our beliefs).

Ten behavioural biases and effects in retail financial markets

Our preferences are influenced by emotions and psychological experiences	Rules of thumb can lead to incorrect beliefs	We use decision-making short-cuts when assessing available information
Present bias e.g. spending on a credit card for immediate gratification Reference dependence and loss aversion e.g. believing that insurance added on to a base product is cheap because the base price is much higher Regret and other emotions e.g. buying insurance for peace of mind	Overconfidence e.g. excessive belief in one's ability to pick winning stocks Over-extrapolation e.g. extrapolating from just a few years of investment returns to the future Projection bias e.g. taking out a payday loan without considering payment difficulties that may arise in the future	Framing, salience and limited attention e.g. overestimating the value of a packaged bank account because it is presented in a particularly attractive way Mental accounting and narrow framing e.g. investment decisions may be made asset-by-asset rather than considering the whole investment portfolio Decision-making rules of thumb e.g. investment may be split equally across all the funds in a pension scheme, rather than making a careful allocation decision Persuasion and social influence e.g. following financial advice because an adviser is likeable

Categorising biases like this helps us consider whether people are making mistakes. Errors in beliefs or decision-making can often be clear-cut. For example, people may have beliefs about the likelihood of an event that contradicts objective probabilities.

But if people's preferences are inconsistent (and so not fully rational), it can be difficult to say that these preferences are wrong; they are after all what people want, at least at the time. If people are not making mistakes, intervening to prevent them from acting on these preferences can make them worse-off.

How do biases affect the strategies of firms, competition and other market problems?

Firms play a crucial role in shaping consumer choices. Product design, marketing or sales processes can exacerbate the effects of biases and cause problems. Firms can respond to the different biases in specific ways (we give detailed examples in the Annex). One important response is that firms will tend to increase non-salient prices and decrease salient prices. For example, if consumers tend to underestimate how much they will spend on their credit card in the future (because of projection bias or overconfidence), firms have an incentive to offer low rates today with higher rates later. Another important response is that firms will tend to obfuscate unattractive product attributes, such as exclusions in insurance contracts.

Consumer biases thus affect competition. They can lead firms to compete in ways that are not in consumer interests, e.g. by offering products that appeal to the consumer because they play to biases. Biases can also create de facto market power in markets that might appear competitive based on the number of firms alone.

We must be mindful, however, that sometimes firms might not know that their customers are making mistakes. What looks like deliberate exploitation may actually just be firms responding to observed consumer demand without realising that it is driven by biases. Regardless of what firms know, in badly functioning markets bias exploitation may be the only way for firms to attract and retain consumers and therefore to stay in business.

Behavioural biases can also interact with other market failures like information asymmetries or externalities. They can exacerbate other problems or make regulatory interventions aimed at addressing problems ineffective or even harmful.

Part II: Applying behavioural economics at the FCA

We have already begun to put behavioural economics into practice, but change will not be instantaneous. Behavioural economics raises important issues for all steps of the regulatory process.

Figure: Applying behavioural analysis

Questions addressed	
Step 1: Identify and prioritise risks to consumers	• How can we spot risks of consumer detriment caused by biases? • How can we prioritise these risks?
Step 2: Understand root causes of problems	• Could consumers be choosing reasonably? • If consumers are biased, what do they truly want and need? • How should we analyse firm-specific issues? • How should we analyse market-wide issues?
Step 3: Design effective interventions	• What interventions are available to protect consumers? • Should we intervene and, if so, how? • How can we assess the impact of interventions?

Step 1: Identifying and prioritising issues

How can we spot potential consumer detriment caused by biases?

Biases are rarely directly observable. Based on evidence on the common mistakes people make, we suggest a set of indicators that can help identify where consumer detriment from mistakes may be particularly high. The indicators highlight potentially problematic consumer and firm behaviours and product features. A complementary approach to detecting issues is to identify the true economic function of a product and then evaluate whether consumers actually use the product for this function, or for another reason.

How can we prioritise these risks?

We will prioritise risks arising from behavioural biases as with other issues. Size of the problem will obviously drive priority. Behavioural problems can cause less sophisticated consumers to pay more than others, effectively cross-subsidising the more sophisticated, so prioritisation also needs to consider these distributional effects.

Step 2: Understanding root causes of problems

Could consumers be choosing reasonably? If consumers are biased, what do they truly want and need?

When analysing problems we need to develop possible explanations as to the underlying cause and then build evidence. We must investigate whether consumers are making mistakes, and if so which biases may be the cause. Crucial evidence includes how consumers choose in different settings (e.g. do consumers choose differently as they gain experience?), their awareness of essential product information and their self-reported needs and objectives.

How should we analyse firm-specific issues?

For firm-specific issues, behavioural insights can inform what dialogue to have with, and what information to gather from the firm. Qualitative information may be enough, though data on consumer behaviour may be needed. Establishing whether the product feature or practice is common to many firms or market-wide is important.

How should we analyse market-wide issues?

Diagnosing market-wide issues naturally requires a greater level of evidence. This may include collecting first-hand data using consumer research, laboratory experiments or field experiments (also called randomised controlled trials, or RCTs). Analysis must consider the broad context of the market, including how firms compete, what other market and regulatory failures are present and how consumer biases interact with these factors.

Step 3: Designing effective interventions

What interventions are available to protect consumers?

Behavioural economics offers new perspectives on interventions that the FCA could use, for behavioural and other problems in the market. Ordered from least to most interventionist, there are four ways in which the FCA could solve behavioural problems:

1. **Provide information.** Require firms to provide information in a specific way or prohibit specific marketing materials or practices.

2. **Change the choice environment.** Adjust how choices are presented to consumers.
3. **Control product distribution.** Require products to be promoted or sold only through particular channels or only to certain types of clients.
4. **Control products.** Ban specific product features or whole products that appear designed to exploit, or require products to contain specific features.

We could expand our toolkit by using more ‘nudges’ — small prompts that, if designed well, have low costs and can lead to better decisions by biased consumers without restricting choice. Providing information or changing the choice environment can be nudges. As these less interventionist measures do not constrain consumer choice, they are preferable, if they are effective in preventing mistakes.

Understanding how consumers make decisions can also improve the effectiveness of traditional remedies, such as disclosure.

Consumer psychology is nuanced, however, and specific interventions can succeed or fail based on small details. Interventions should therefore ideally be tested in practice before implementation, possibly using RCTs. Often consumer biases are just one part of a problem, and a package of market-wide measures will be required.

Should we intervene and, if so, how? How can we assess the impact of interventions?

Applying behavioural economics also brings additional challenges. We will have to tackle difficult questions like: what is in consumers’ best interests, where should the limits to consumer responsibility lie, and how effective are less interventionist measures, such as nudges, or more interventionist measures, such as product banning?

When choosing between different measures, or no intervention at all, we need to assess their costs and benefits, to the extent that this is practically possible. A wide variety of factors should be considered including (i) whether firms can circumvent the measure, (ii) negative and positive impacts on innovation, (iii) transfers between different groups of consumers, e.g. the more and the less sophisticated, (iv) the impact on consumers’ incentives to learn and (v) whether the problem is one for the regulator or best left to the Government. Traditional impact assessment approaches, for example, for estimating benefits to consumers, may need to be adapted when biases are present.

Conclusion

Integrating insights from behavioural economics with traditional competition and market failure analysis has much scope for helping the FCA choose the best interventions. Behavioural insights have implications for many functions of the organisation:

- policy – i.e. creating our rules and guidance;
- analysing firms’ business models, behaviour and products when authorising or supervising firms;
- building evidence for enforcement cases; and
- shaping FCA and firm communications with customers.

We believe that the challenges are surmountable and this paper contributes to the foundations for the FCA to undertake wide-ranging, integrated analysis of financial markets and then act on the results.

1. Introduction

Making markets for financial services work well for consumers is the overall strategic objective for the Financial Conduct Authority (FCA). To achieve this, we'll need to understand what consumers want and how they behave in the markets we regulate.

The FSA acknowledged the importance of behavioural economics in its publications.¹ But this Occasional Paper now provides a consistent and rigorous conceptual framework for how to apply it in practice.

We describe the implications of behavioural economics for conduct regulation in retail financial markets. The paper has two goals: we want to understand the consumer biases that are common in financial markets and how firms respond to these biases; and we seek to explain what behavioural economics means for detecting and correcting problems in markets for retail financial services.

Over the past few years several UK public institutions have published reports on what behavioural economics means for them.² This paper differs from others in three respects:

- We focus on consumer protection in retail financial markets, where people are, unfortunately, particularly susceptible to biases.
- We also focus on how we might assess what is best for consumers and so whether we should intervene or not. This issue is intrinsic to the FCA's role as a regulator of markets. In contrast, many public institutions use behavioural insights to influence in predetermined ways—such as getting people to pay taxes on time or consume less energy.
- And we discuss the practical implications of behavioural economics for paternalism (intervening to protect consumers from their own mistakes) and consumer responsibility, which are important themes in academic literature but less explored in the public policy space.

We hope this paper will help those with a practical interest in consumer financial protection and regulation more broadly.

To err is human

While we frequently use the term 'bias' (meaning deviations from a strict economic model of rationality) we do not do so in any pejorative sense. In real life people's decisions are rarely made in a fully rational way. All people are boundedly rational and have behavioural biases.

For many decades, however, economics relied on models that assumed people chose rationally: with unbounded capability, people formed accurate expectations about the likelihood of future events, and chose the product that best served their needs by assessing all relevant costs and benefits. Economists were aware, of course, that people made mistakes, but they did not

think these mistakes were frequent, systematic or significant enough to require changing the assumption of rationality.

Over time, however, psychologists established that an individual's choices are often inconsistent—with each other, over time or with the individual's stated aims. The big breakthrough for economists came when they appreciated that these inconsistencies were predictable and had substantial implications for how markets work. Behavioural economics uses insights from cognitive psychology to explain consumer and firm behaviour more accurately. Many now consider it indispensable for understanding and regulating markets.

While we focus on the biases of retail consumers, we recognise that firms — and, indeed, regulators — comprise fallible humans prone to biases too. Retail consumers, however, do not benefit from organisational checks and balances and often have to make decisions in areas where they lack relevant information. So they tend to suffer from biases more and may require extra protection.

Advantages of behavioural economics for the FCA

As discussed in the recent *Journey to the FCA* document, the new regulator is committed to a proactive and speedy approach to consumer protection through 'early intervention'.³ Behavioural economics holds great potential as an analytical tool for the organisation. Intervening early, for example, will require assessing which products are likely to cause detriment to consumers. Such judgements must be informed by a solid understanding of what mistakes consumers are most prone to and which features of products may be problematic.

Behavioural economics will also help formulate what we mean by 'an appropriate degree of consumer protection' and assess what level of responsibility consumers may be reasonably expected to bear. The Financial Services Consumer Panel says 'consumers should not be responsible for understanding complex terms'. But which terms are complex, for what types of consumers and why?

Behavioural economics does not provide license for a regulator to intervene to correct any and all suspected consumer mistakes. There are benefits for consumers in having the freedom to make their own choices, even if sometimes these are mistaken, both because freedom is a good thing in itself and because it enables them to learn and make better choices in the future. But behavioural economics does provide us with better analytical tools and with options for intervening in new, less restrictive, ways (e.g. nudges) to improve outcomes for consumers.

Insights from behavioural economics are also essential for pursuing the FCA's new objective to promote effective competition. In *most* markets for retail financial services, there is no shortage of competing firms. But the problem is the nature of the competition, which should ideally be on price and quality. As competition regulators have observed before, consumers' behavioural biases can often give rise to or exacerbate competition problems.⁴

Adding behavioural analysis to the FCA's toolkit

We do not see behavioural economic analysis as separate to the analysis of competition problems and traditional market failures. Different market imperfections often interact to produce the problems we observe, so we need an analysis that covers all these drivers.

Most importantly, behavioural economics can help us design effective remedies. For example, a clear grasp of how consumers make choices and use financial products is essential for designing better disclosure. And behaviourally-informed interventions, like nudges, can offer new cost-effective ways of improving market outcomes. A better understanding of how consumers make decisions and how firms respond helps avoid policies that are ineffective or have unintended consequences.

Part I:

Lessons from behavioural economics

Behavioural biases can cause significant problems that financial markets, left to themselves, will not solve. A good example is payment protection insurance (PPI). Firms were able to earn large profits on PPI products because many buyers fundamentally misunderstood the PPI pricing and limitations to its coverage. High PPI prices allowed sellers to attract more customers by offering mortgages at cheaper rates (which consumers focused on in choosing providers).

As a result, no firm had an incentive to advertise that PPI was a poor product for many people and charge appropriate mortgage and PPI prices. This would have made the firm's mortgage more expensive and the firm uncompetitive. Intervention was needed to solve this problem.

Having a good grasp of the key concepts and ideas of behavioural economics is the first step to applying behavioural insights in practice. We now introduce the key biases and ideas that are important when diagnosing problems in retail financial markets. This is based on a detailed review of academic and regulatory literature.

2. How people make decisions

Lessons from psychology: two systems of thought

Daniel Kahneman, one of the founders of behavioural economics, offers a simple illustration of how biases arise.⁵ People have two modes of thought: *intuition* (fast thinking, or System 1) and *reasoning* (slow thinking, or System 2).

Our intuition is responsible for the impressions and quick judgements that come to mind automatically and effortlessly. It has evolved over time to enable us to perform complicated functions—from recognising faces and objects to making judgements—quickly and accurately. Reasoning, on the other hand, contrasts with intuition and is much slower, more demanding and must be deliberately controlled (see Table 1).

Table 1: Two modes of thought

Intuition	Reasoning
fast	slow
automatic	deliberately controlled
effortless	demanding
associative	serial, rule governed
difficult to control or modify	flexible

When making a decision we use both systems, but our reasoning often just “accepts” the answers that our intuitive processes provide. Most choices we make in our everyday life are primarily based on these quick, automatic, intuitive processes. While intuition is remarkably efficient for performing many complicated tasks, it is not always right, and ‘biases’ in decision making can arise when intuitive processes lead people astray in systematic and predictable ways.

In these cases we can think of intuition as automatically substituting complex questions that it cannot answer with easier questions that it can answer. When answers to these two sets of questions are only weakly related, intuition is prone to err. We are mostly not aware of this substitution and rarely deliberately check whether our intuitions are correct. Table 2 presents some examples:

Table 2: Examples of question substitution by intuition

Target question	Substitute question
Is this a good financial adviser?	Does he come across as a nice person?
How likely is it that a particular bad event will occur? (when evaluating insurance)	How easily do previous events like this spring to mind?
What should be the penalty for financial fraud?	How much anger do I feel when thinking about people committing fraud?

People are mostly blind to their biases and mistakenly trust their intuitions. Even people familiar with different types of biases find it difficult to spot how their biases affect a particular decision. Professional investors, for example, may be blind to their over-extrapolation from limited information about past stock returns or their own overconfidence.

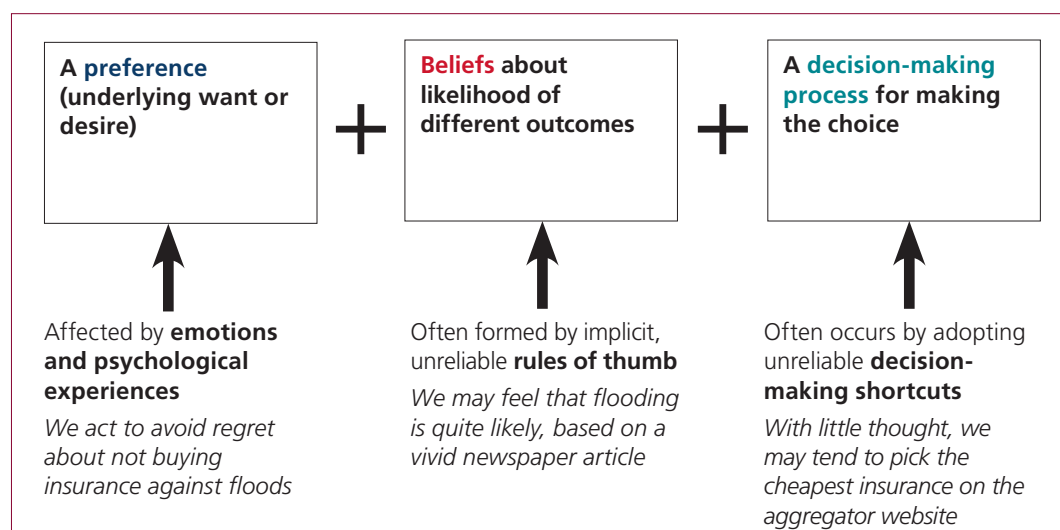
Types of behavioural bias

There are many behavioural biases and it can be hard to navigate them all. A good classification of biases should help guide policymakers and supervisors toward the underlying causes of a problem and map biases to possible regulatory solutions.

After reviewing alternative approaches in various academic and policy papers, we adapted Stefano DellaVigna's list and classification of biases.⁶ He categorises biases according to which component of a decision they affect: *preferences*, *beliefs*, and *decision-making processes*.

Figure 1 illustrates this. While this categorisation might appear to cast people's decision-making as rational and linear, it does not imply that. We view the three components as categorising biases arising from different intuitive processes.

Biases might be difficult to categorise. For example, a decision-making shortcut could cause people to over-extrapolate, a distortion in beliefs. Nonetheless we find this framework useful.

Figure 1. Biases as distortions in choice

3.

Biases and consumer behaviour in retail financial markets

The central role of biases in retail finance

While biases affect consumer choices in many different markets, there are several reasons why they are particularly likely to affect decisions in retail financial markets⁷:

- **Most consumers find financial products complex.** Making financial decisions is hard, unpleasant and time-consuming. Consumers often lack motivation to invest time and effort to make informed decisions and, because of the complexity, cannot easily evaluate some products at all. Financial products have little inherent interest for most people and practical cognitive limitations, e.g. with numeracy and literacy, make many product concepts and descriptions difficult to understand.
- **Many financial decisions require assessing risk and uncertainty.** People are generally bad (even terrible) intuitive statisticians and are prone to making systematic errors. The influences on assessments of risk and uncertainty in insurance and investment markets may be subtle and opaque even to experts.
- **Financial decisions may require making trade-offs between the present and the future.** Saving and borrowing decisions, for instance, often give rise to self-control problems and may result in procrastination, e.g. consumers may over-borrow on a credit card and then not pay it back when they originally intended to.
- **Many financial decisions are emotional.** Emotions such as stress, anxiety, fear of losses and regret can drive decisions rather than the costs and benefits of the choices, e.g. fear might drive the purchase of an expensive insurance policy for a mobile phone that is very unlikely to be needed.
- **It can be difficult to learn about financial products.** Some financial decisions, such as taking out a mortgage or planning a pension – are made infrequently and with consequences revealed only after a long delay. Other decisions may depend on macroeconomic circumstances that consumers may have little chance of learning about. Or, because it may be taboo to talk about financial outcomes, people may have limited opportunity to learn from others.

Problems often arise because firms' product design and sales processes may accentuate, rather than ameliorate, the effects of consumer biases. Also, while many consumer mistakes in financial markets are very understandable, some consumers do not make the level of effort that might be expected of them in reaching important financial decisions.

Important behavioural biases and effects in retail financial services

Based on our detailed review of the literature, we list the key behavioural biases that affect consumer decisions about financial products in Table 3.⁸ We group similar behavioural biases and effects caused by biases⁹ together.

Table 3. Ten behavioural biases and effects in retail financial services: an overview

Preferences	Beliefs	Decision making
Present bias Reference dependence and loss aversion Regret and other emotions	Overconfidence Over-extrapolation Projection bias	Mental accounting and narrow framing Framing, salience and limited attention Decision-making rules of thumb Persuasion and social influence

Table 4 explains each of these biases to give context for the discussions that follow (and if you want more detail on these, see Annex).¹⁰

Table 4. Ten behavioural biases and effects in retail financial services

I. Preferences

Present bias	People can have excessive urges for immediate gratification, overvaluing the present over the future. As the consumer can regret such choices later, their preferences are 'time inconsistent'. Present bias can lead to self-control problems such as procrastination. Example: over-borrowing, e.g. buying a tablet-PC now using a payday loan without thinking much about how you will pay for it.
Reference dependence and loss aversion	Consumers may not assess outcomes in their own right, but rather as gains and losses relative to a reference point. Psychologically, losses are felt roughly twice as much as gains of the same magnitude. As a result, consumers underweigh gains and overweigh losses. But the same outcome can be framed as a gain or a loss depending on the choice of reference point. So consumer choice can be unstable and vary depending on which reference point is chosen. Example: perceiving add-on insurance as cheap because it is sold together with something that has a comparatively much higher price.
Regret and other emotions	People may act to avoid ambiguity or stress. Their choices can also be distorted by temporary strong emotions (e.g. fear). Example: buying expensive insurance for peace of mind, even though you are very unlikely to need it.

II. Beliefs

Overconfidence	Often people are overconfident about the likelihood of good events occurring or their own ability, including the accuracy of their judgements. Example: excessive belief in your own ability to pick winning stocks
Over-extrapolation	People often make predictions on the basis of only a few observations, when these observations are not representative. Example: using just a few years of past returns as a basis for judging future returns and making investment decisions, without considering the extent to which past returns reflect chance and particular circumstances.
Projection bias	People expect their current tastes and preferences to continue in the future and underestimate the possibility of change. Example: tying up funds in long-term contracts without adequately considering the chance of needing money in difficult circumstances before the contract matures; or not realising that you will have difficulty controlling your future credit card spending.

III. Decision-making

Mental accounting and narrow bracketing	Mental accounting describes how people treat money allocated for different purposes differently, rather than treating all money as the same. This is a bias because money is fungible i.e. money in the “holiday” account is intrinsically the same as money in the “day-to-day” account. All else equal, consumer behaviour should not change just because money is labelled differently. Example: people may have different ‘mental accounts’ for saving and borrowing, saving at a low rate while borrowing at a high rate. Narrow bracketing describes how people often consider the decisions they take in isolation, without integrating these decisions with other decisions that affect their overall wealth and level of risk they take on. Example: making investment decisions asset-by-asset rather than considering the whole portfolio.
Framing, salience and limited attention	As people have limited attention, framing and salience can determine what information is processed and how that information is processed. Even when the economic benefits of particular choices are identical in two situations, consumers may make different choices depending on how the decision problem is framed, i.e., what it draws attention to. What makes a particular frame or interpretation lead to a particular choice depends on the bias triggering the reaction. Attention is also drawn to particularly salient aspects of a situation, which can then have a marked influence on choice. Example: overestimating the value of a packaged bank account because it has been presented in a particularly attractive way that highlights benefits and under-emphasises charges

Decision-making rules of thumb	Consumers simplify complex decision problems by adopting specific rules of thumb (heuristics). Mostly these rules of thumb operate unconsciously. When choosing from a wide range of options, for example, people may choose the most familiar, avoid the ambiguous or uncertain, or pick the first option on a list. When estimating unknown quantities, people may anchor estimates to some relevant or irrelevant figure and adjust from there. Example: allocating the pension pot equally across all investment funds available in a pension scheme rather than making a careful allocation decision.
Persuasion and social influences	Emotions and norms in social interactions are important: consumers may allow themselves to be persuaded or trust the sales person because he or she comes across as 'likeable' and therefore trustworthy. Emphasising good personality traits or overemphasising bad personality traits may substitute for a reasoned judgement. Example: relying on financial advice because the adviser is likeable, without giving thought to the effect of commission or other economic incentives for the adviser on the advice they receive.

Is the (biased) consumer always mistaken?

Deciding whether biased consumers are making unreasonable choices will be a considerable challenge for the FCA. When evaluating policy options and considering how to bring about better outcomes for consumers, we will have to ask a non-trivial question: 'Does this consumer choice reflect an error to be corrected or a reasonable consumer decision that should be respected?' If the FCA mistakenly intervenes to 'correct' reasonable consumer choices, our interventions could impose costs for no real benefit, or even make people worse off.

To assess whether choices are reasonable, we need to understand what consumers really value. For many consumers, financial products are merely a means to end e.g. a way of storing and accessing money, protecting against loss or providing access to credit.

Are biased choices mistakes? The three cases

The categorisation introduced in the previous section allows us to differentiate between three cases.

Beliefs: The wrong beliefs that consumers may hold about the likelihood of events and their own ability can be mostly treated as mistakes, as they contradict more or less objective facts about the world. These biases can affect even consumers who are willing to invest time and effort to make a good decision, such as those who study the index-beating performance of investment managers.

Decision making: It is slightly different when consumers choose products that do not suit their needs or are too expensive because they make hasty decisions based on rules of thumb and decision-making shortcuts. While such quick and 'intuitive' decision making may often lead to errors, it could be argued that shortcuts help save a consumer's time and effort, so are reasonable despite the errors. Moreover, pushing consumers to exert more effort could be seen as making them worse off, depending on the discount rate, what else is at stake, and so on.

Preferences: Most complicated are situations where biases directly affect what consumers want and value. Because emotional experiences affect a consumer's experienced well-

being, some hold that consumer choices should be treated as reasonable.¹¹ It may well be that consumers genuinely feel better-off at the time of making the choice, such as buying a low-value insurance product for the sake of “peace of mind”, and a regulatory intervention that stopped them doing so could make them worse-off.

But there are strong reasons to view biases in preferences as mistakes, for example:

- Consumers do not always realise how much their decisions and willingness to pay for a product are influenced by emotions.
- Emotions can be triggered and easily manipulated by firms, e.g. in advertising and during the sales process.

In the case of present-bias, it can often be shown that what consumers choose is not what they really wanted. Consumers may, on impulse, borrow far more on their credit cards than they intended and report regretting their choices.¹² Furthermore, consumers often seek commitment devices to manage their impatience and take forward-looking choices instead.¹³ Nonetheless it can be somewhat difficult to determine what the consumer really wants: should we put more weight on what the impulsive self wants or the more intentional and thoughtful self?

For loss aversion and desire to avoid emotions such as regret, the case is less clear. It can be hard to find out what really is in consumers’ best interests, and detailed analysis may be required (see Box 1). Such concerns mean that the regulator must take particular care to consider how clear the need for intervention is before acting. We return to such cases in Box 5, where we look at the available evidence on extended warranties.

Box 1: Does loss-aversion reflect genuine preferences?

When analysing whether loss-averse choices represent a genuine preference to which we should give credence the following questions are useful:

- Do consumers correctly anticipate (e.g. when buying insurance) the emotional detriment that they would feel if exposed to a loss?
- Is the reference point against which consumers are evaluating losses reasonable and sufficiently consistent to suggest stable underlying preferences?
- Is there evidence that the loss-averse preferences for a particular product are being ‘manufactured’ by suppliers, for example by manipulating the reference point or framing the problem to over-emphasise the likely impact of the loss?

4.

Biases, firm behaviour and competition

How firms shape consumer choices

Firms play a crucial role in shaping consumer choices through product design, marketing and the sales process. Much consumer detriment arises as firms design and sell products that benefit from consumers not overcoming mistakes or, at times, exacerbating mistakes.¹⁴ The Annex suggests some ways in which firms may profit from different consumer mistakes, with examples from financial services.

But firms may also play the opposite role, and actively use behavioural insights to help individuals to engage with financial services and make better choices by designing products that consumers are more likely to understand, and using marketing and selling tactics that do not trigger or exacerbate biases. Or firms might help people interact with the firm through channels that offer a better consumer experience or are cheaper to use. Whether such practices are feasible and sustainable, however, depends on the nature of the bias and competition and, ultimately, whether debiasing is in the best interests of the firm.¹⁵

As regulators, we must acknowledge that what sometimes looks like exploitation may actually be firms responding to consumers' own misperceptions of their demand or may have been part of firms' strategies to attract consumers in a competitive market place. Firms offering insurance products for 'free trial' periods, for instance, may be seen as exploiting inertia or fighting for market share or both.

The framing effect provides some of the most important means by which firms can shape consumers' financial decisions when distributing products. So it is useful when analysing product promotional materials, disclosure and advice.

Box 2: How firms use framing to their advantage

What is framing?

Framing describes how different presentations of the same information can lead to different choices from consumers.

Why does it occur?

Different presentations can highlight certain aspects of the outcomes or make some information more accessible and prominent. Frames work because they trigger particular biases. Some important biases that can be triggered in financial information are:

- reference dependence and loss aversion;
- decision-making rules of thumb.

How can firms profit from framing?

If a firm knows how to tweak the frame to elicit a particular choice or knows which frames have been successful in the past, it can directly manipulate them:

- *Product promotion:* appeal to losses and regret, include irrelevant information to distort assessment of relevant prices or features or to induce an emotional response, or present information in a way that triggers a particular rule of thumb (including default inertia).
- *Product pricing:* create complex pricing structures and make total cost opaque or hard to assess.

Framing effects are often likely to be subtle and hard to pin down. It is often hard to see what the right, 'neutral' frame could be, particularly with frames that affect actual consumer experience of products (e.g. those that appeal to emotions) and when the decisions are very complex (e.g. requiring assessments about risk and uncertainty).

Biases and competition

One of the key insights of behavioural economics is that firm business models that result in consumer detriment may be sustainable even in a competitive market, here meaning a market lacking conventional 'market power' (monopoly and collusive practices). While we stress that competition is, by and large, a positive force that improves outcomes for consumers, it must be *effective* competition i.e. competition that benefits consumers through a combination of efficiency, price, quality and variety (innovation).¹⁶

It is important to note, however, that promoting effective competition is one of the FCA's three operational objectives and was not an objective of the FSA. So the FCA will clearly play a far more active role in making markets work well from a competition perspective.

Several reviews of the literature on interactions between behavioural biases and competition have been published.¹⁷ These show that traditional competition policies, such as increasing the number of competitors, introducing simple products or simplifying existing products, may be ineffective or even counterproductive as long as other products that exacerbate biases are offered in the markets or the underlying biases are not addressed. Based on current academic research, here we discuss the five main implications of behavioural biases for competition.

1. Behavioural biases may create or strengthen market power in what would otherwise be a competitive market.

Because of biases, consumers tend to stick with their existing products, do not search enough, do not search based on the most critical product characteristics, and do not switch to better offers. The market for bank current accounts is a prime example. Firms can exploit these behavioural effects and lower the quality of products and/or charge higher prices, without the threat of losing consumers to their rivals. Also, situational monopolies can arise, where intermediaries sell add-on products at monopoly prices because consumers do not shop around for better offers at the point of sale. Payment protection insurance (PPI) demonstrates

that these effects can arise even in markets that might appear competitive because a large number of firms are active.

2. Pricing practices may be more complex than necessary and lead to mistakes.

Consumers often make predictable mistakes when encountering complex pricing schemes. These mistakes make them vulnerable to firms deliberately complicating their pricing schemes, for example through drip pricing or teaser rates.

3. Products may be spuriously differentiated and not serve consumer needs.

As behavioural biases often affect how consumers value products, firms may end up offering products that appeal to consumers but do not actually serve their needs well. For example, firms can manipulate consumers' emotions, such as regret in insurance decisions, to create a demand for a product. Or they might add reward schemes that are superficially attractive but of little value or that draw attention away from important product features and charges. Firms can also add irrelevant variations to their products to make them more difficult to compare to competitors.

4. Entry of more firms will not necessarily mitigate practices that trigger biases and may even make them worse.

Entry of more firms into a market will not improve outcomes for consumers if firms still compete on an exploitative basis. Offering low credit card teaser rates but high hidden charges, may mean more firms enter and draw teaser rates down. But this may not prevent detriment due to high hidden charges, as long as consumers keep choosing products in the same way. In most cases, however, consumer detriment that arises in competitive markets does not imply that less competition would be preferable. Instead, these findings imply that remedies that aim to foster competition may need to be coupled with behavioural remedies to ensure that the competition is effective.

5. The presence of sophisticated consumers may not always lead to better outcomes for biased consumers.

It may appear that if at least a small proportion of consumers are sophisticated (i.e. less prone to bias-induced mistakes), then these consumers will discipline firms, causing competition to work better and fewer products that exacerbate biases to be sold to the less sophisticated consumers. Unfortunately this is not necessarily the case. Cross-subsidies occur, with the sophisticated benefiting at the expense of the less sophisticated. Teaser rates on credit cards offer a good example: the artificially low introductory rates are attractive both to less sophisticated consumers, who do not pay attention to the higher rates they will pay in the long term, and to sophisticated consumers, who switch to a different card once the introductory offer expires and so can avoid the long-term charges. So no firm on its own can profitably offer a credit card price plan without a teaser rate but with a lower overall interest rate.¹⁸

6. Firms' decisions might also be distorted by biases.

Although in this paper we discuss firms as rational agents, it is worth noting that in practice they—and, indeed, regulators—are run by fallible humans who are also prone to biases. For example, the extent to which firms exploit consumer biases may be limited by regard for social norms or inability to maximise profits optimally.¹⁹ On the other hand, possibility of biases in firms can have significant implications for quality of the products or services they offer (e.g. investment advice).²⁰ The issue of biased firms, and their interactions with biased consumers, in retail financial markets is currently poorly explored in the literature, so, with regret, we set it aside for the purposes of this paper.

5.

Biases and traditional market failures

Most financial product markets exhibit other failures in addition to behavioural biases – firms and consumers are not perfectly informed, markets are rarely perfectly competitive, and few markets are perfectly regulated. A well-known economic result (the theory of the second best) shows that when there are multiple failures in a market, interventions that aim to correct one of the failures can make the situation worse. Failures interact and can offset each other.

This result holds for behavioural biases just as for other market failures. Good behavioural analysis must take account of other problems in the market, just as good analysis of traditional market failures must take account of behavioural biases. Overall, there are generally thought to be four main categories of market failure: behavioural biases, market power (including abuse of monopoly and collusion), information asymmetry and externality. These combine in various ways to produce ineffective competition. We covered market power in the previous section. In this section we outline our thinking on the key interactions between behavioural biases and information asymmetry and externalities.

Information asymmetries

Information asymmetry is a key reason why financial markets fail and why regulators like the FSA and FCA intervene. In traditional economic analysis, it arises when a party to a transaction (e.g. a consumer) has less access to relevant information than the other party (e.g. a firm), and it can greatly affect market outcomes. With biased consumers, information asymmetries can also arise where consumers can access the information but are less able to process it.

Traditionally, some information asymmetry problems may be solved by requiring firms to give consumers the relevant information. The FSA has introduced various information disclosure requirements. But behavioural biases can affect how consumers assimilate, understand and act on the new information, often making the disclosures ineffective.

Interventions to correct an information asymmetry in the presence of biased consumers can introduce further complications:

When consumers lack the relevant information and have biases, it may be difficult to establish what the most significant cause of the problem is. Without the relevant information even a rational consumer can make poor choices. But if the information is provided either not at all or in lengthy legal terms that make it excessively costly to access and assess then poor choices are also likely. Consumers often then rely on advisers who are selective, either due to biases of their own or because of misaligned incentives (such principal–agent problems often arise where there is information asymmetry and contract outcomes are long term or unclear).

Equally, biased consumers may disregard or misinterpret the available information, and so it may look like their poor choices are caused by *lack* of information. When exploring whether biases

are also present, it helps to ask what consumers would do if they had all the relevant information: would they make reasonable choices, or would they misinterpret the information due to biases?

Behavioural biases can render regulatory interventions aimed at addressing information asymmetries ineffective. When there is lack of relevant information in the market and consumers make poor choices as a result, a regulator may intervene to ensure that firms provide this information. But behavioural economics shows that when consumers are biased, such interventions will only be successful if the information is presented in the right way. Susceptibility to framing means, for example, that consumers often focus on a few headline rates and ignore the additional information about features or charges that is provided to them.²¹ Information disclosure requirements that do not take into account how consumers process information are likely to be ineffective or even counterproductive.

Behavioural biases can render regulatory interventions aimed at addressing information asymmetries harmful. There is evidence that extra information may lead consumers to make poorer decisions by distracting them or making them under- or over-react to emotionally charged topics like financial advisers' conflicts of interest.²²

Interventions to address behavioural biases might exacerbate information asymmetry problems. Handel (2011) describes how an intervention to reduce consumer switching costs, and reduce inertia, in a health insurance market increased welfare losses from adverse selection. If insurance plan prices had been held fixed welfare would have increased, but prices changed, adversely, to reflect the new pools of risk.

Externalities and cross-subsidies

Externalities are present where consuming or producing a financial product or service has consequences for a third party whose interests are not taken into account when that good is bought or sold. This may warrant regulatory intervention. One of the key interactions with behavioural biases is when biases drive consumers towards behaviours that give rise to externalities. For example, overconfidence may lead consumers to over-borrow and increase the likelihood of defaulting on their mortgage. Defaults bring externalities since home repossessions decrease the values and prices of other properties in the surrounding area, increasing risk of other homeowners falling into negative equity and foreclosing on their loans as well.²³

Biases can give rise to cross-subsidies between groups of consumers. Cross-subsidies are somewhat analogous to externalities as they also describe effects of a transaction on parties not directly involved in it. But the major difference is that in cross-subsidies these effects arise through market responses, not directly. As already described, firms can extract profits from consumers with limited attention by designing pricing structures with very low headline rates (e.g. "free" current accounts) and high add-on prices (e.g. overdraft charges) that inattentive consumers ignore when choosing a product. Sophisticated consumers, on the other hand, are able to avoid charges on add-ons but benefit from lower headline rates than they could have obtained without the inattentive consumers. Cross-subsidies therefore often have regressive distributional implications and analysis of the impacts of these transfers must take this into account.

Part II:

Applying behavioural economics at the FCA

Correcting consumers' behavioural errors may at times be crucial if the FCA is to achieve its consumer protection objective. We may become directly aware of behavioural errors through supervisory visits to firms, by gathering consumer intelligence, and through market research or other means. Alternatively, we may observe other evidence that suggests our operational objectives are not being met and then, through integrated analysis of the markets concerned, find that one significant cause of the problem is behavioural error by consumers.

Either way, we will assess the case for prioritising the issue and allocating resources to sorting it out in exactly the same way as any other issue of regulatory concern. After understanding whether biases are leading to consumer detriment, we will need to think carefully what intervention, if any, is appropriate.

While the FCA will consider the effects of consumers' behavioural errors as 'business as usual' in the manner just described, the novelty of behavioural economics for most financial regulators means that it will be useful to show how the concepts described in Part I of this document can be applied in practical financial regulation. So in Part II we focus on applying behavioural insights to *when* the FCA should and should not act and *how* the FCA should act. It draws on our recent experiences of using behavioural economics in our regulatory work. It discusses what it means for the FCA to use behavioural insights in its authorisation, supervision, enforcement and policymaking activities.

Example: a supervisor notices that the penetration level of an online, add-on insurance product is twice as great as that of a similar product the same company is selling to roughly the same profile of customers. A quick look at the website reveals the default setting for the first product is 'yes, please', while the default setting for the second is 'no, thank you'. (Indeed the company may be carrying out a behavioural trial of its own.) While not conclusive, these facts alone suggest that we should investigate whether consumers are buying products they do not want because of the default setting.

Example: policymakers observe that sales of tracker funds with high up-front charges are remarkably high given that they are almost certain to under-perform tracker funds with lower charges. Analysis of the economic market reveals that the high-charging tracker funds with high sales have start dates that coincided with low levels of the relevant index. These facts alone suggest that the funds' cumulative performance statistic is being used in a framing or salience strategy to manipulate consumers' perceptions of quality (expectations about future performance) and thereby influence their decisions.²⁴

We believe that applying behavioural insights is a key component in making the vision outlined in the recent *Journey to the FCA* document possible.²⁵ With practical tools based on a thorough understanding of consumers, the FCA can be more forward-looking and act early to protect consumers and ensure effective competition. This document of course cannot achieve this by itself. So we will supplement it with training and by tailored analytical tools, such as the one already developed for the general insurance market.

Here in Part II we discuss identification, analysis and remedy of consumer biases, as explained in more detail in Figure 2 below.

Figure 2: Applying behavioural analysis

Questions addressed	
Step 1: Identify and prioritise risks to consumers	• How can we spot risks of consumer detriment caused by biases? • How can we prioritise these risks?
Step 2: Understand root causes of problems	• Could consumers be choosing reasonably? • If consumers are biased, what do they truly want and need? • How should we analyse firm-specific issues? • How should we analyse market-wide issues?
Step 3: Design effective interventions	• What interventions are available to protect consumers? • Should we intervene and, if so, how? • How can we assess the impact of interventions?

6.

Identifying and prioritising risks to consumers

Insights from behavioural economics can support risk identification in “business model and strategy analysis” (BMSA) within our Supervision division and cross-sectoral “horizon scanning” within our new Policy, Risk and Research division. We cannot observe consumer biases directly, but understanding how they affect consumer decisions and how firms respond can help us develop warning signs to spot market problems with likely behavioural roots.

When we do observe that a market is performing poorly, we must of course be open-minded about the cause. Poor outcomes tell us that competition is ineffective but not *why* it is ineffective, and still less how it can be made effective. The problem may be consumers’ biases or it may be pure information problems, monopoly or collusive practices, unhelpful past regulations, any combination of the foregoing or even facts of life that regulators can do nothing about. Our aim here is to ensure that, if the problem is behavioural, we can identify it and in priority cases do something about it.

This section outlines two complementary approaches to identifying behavioural risks:

- looking for specific **indicators of likely consumer mistakes**; and
- checking for a **mismatch between the product’s declared function and consumers’ actual use**.

The second part of the section describes additional challenges that consumers’ behavioural biases pose for central and local prioritisation of issues.

How can we spot risks of consumer detriment caused by biases?

Indicators of potential consumer mistakes

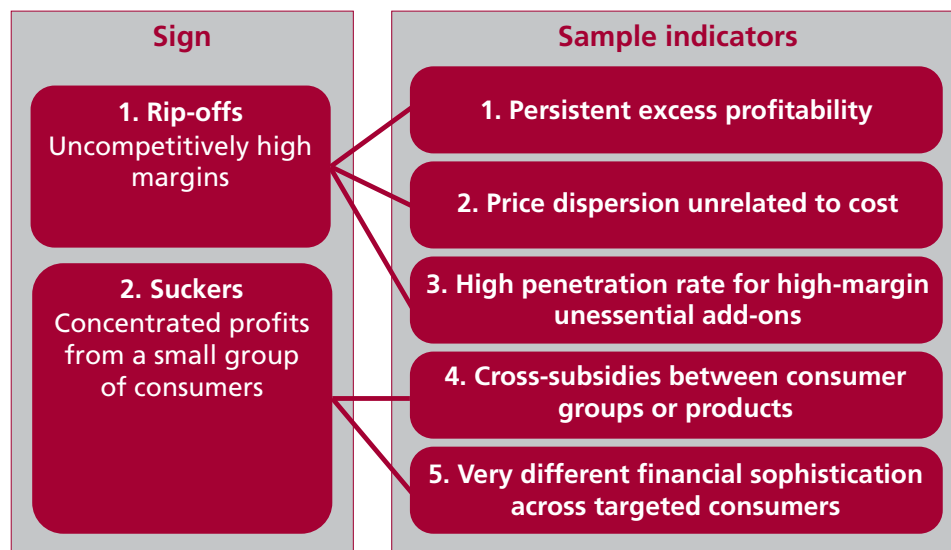
As we have seen in Part I, behavioural biases can give rise to particular consumer behaviours and firm strategies (including product features). This can give us sets of objective facts to look out for in the market when identifying behavioural issues.

Some areas of the FCA will find indicators more useful than others, and some may require more tailored and granular indicators than others. In Supervision, for example, cross-sectoral risk analysis within a sector team could benefit from a tailored set of behavioural risk indicators that reflect the most relevant biases for key markets in the sector. However, for high-level product risk filtering by a supervisor of a single firm it may be more appropriate to just incorporate key behavioural insights into existing tools. This section only provides one illustrative set of indicators for discussion.

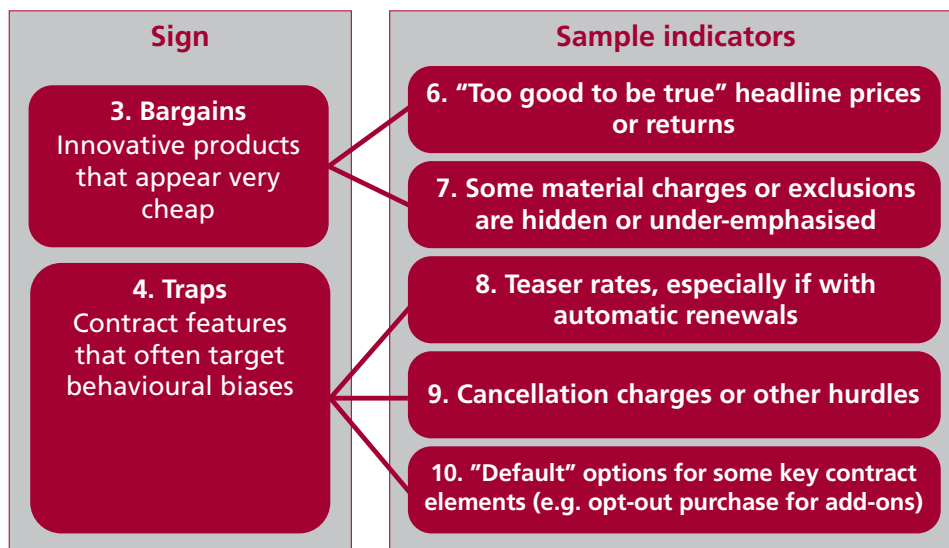
In their open letter to the new director of the US Consumer Financial Protection Bureau, John Campbell and co-authors have proposed seven high-level warning signs for detecting consumer detriment.²⁶ These signs (with minor modifications) can be broken down into more specific indicators that apply to most regulated markets and illustrate how different sources of information can help detect risks arising from consumer biases. The indicators do not demonstrate the existence of biases, as they could have alternative causes, but they are indicative of biases.

First, there are several indicators of potential consumer mistakes in firms' overall strategies or profitability (Figure 3a). These indicators can support analysis of firm-specific and thematic issues that cut across several firms, e.g. the indicators could be used in supervisory BMSA. Some of the indicators that do not rely on a firm's past performance (e.g. cross-subsidisation) can also be used to analyse risks when authorising the firm. Finally, our new Policy, Risk and Research division will undertake quantitative analysis of granular regulatory data to pick out abnormal patterns in profitability or sales that are indicative of consumers' mistakes – this is part of horizon scanning or market mapping.

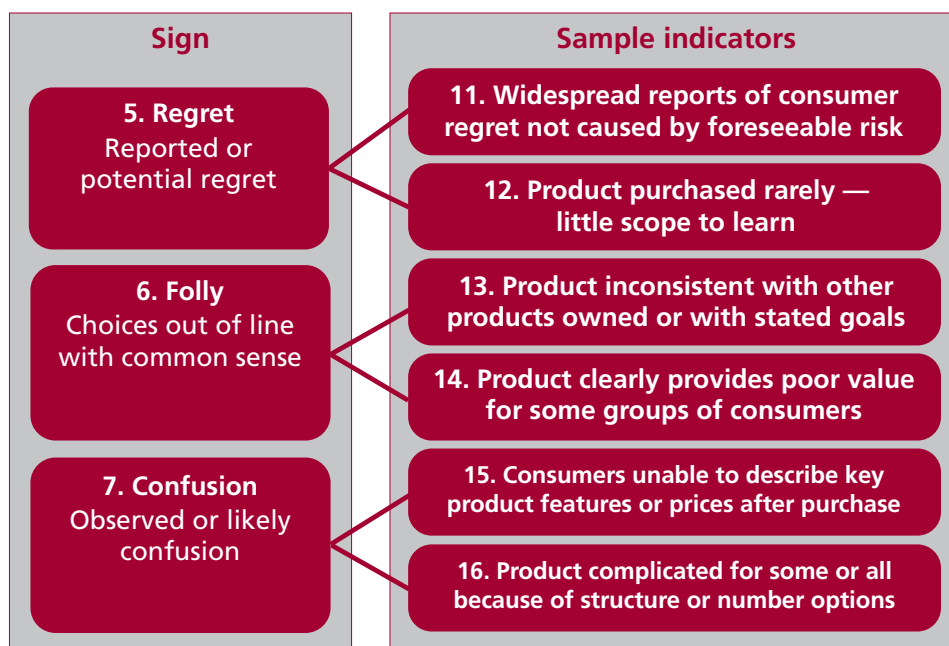
Figure 3a: Early warning indicators—firms



Where biased consumers are known to be vulnerable to specific **product features** or sales tactics (Figure 3b), this can also help our Supervision or Authorisations areas to identify more risky business models when reviewing firms' product design, sales practices or post-sales handling. Product-focused indicators can also help detect financial promotions that are more likely to be misleading for consumers and identify more risky innovative products in forward-looking analysis of market developments.

Figure 3b: Early warning indicators—product features

Finally, the FCA should also consider **consumer behaviour and experiences** (Figure 3c). Consumer market research and active engagement with consumer organisations can uncover useful indicators, like early signs of consumer regret, inconsistencies or lack of understanding, before the problems become widespread. Regret may be particularly important as many financial products are long-term and consumers will only realise the consequences of their decisions slowly, often many years after purchase. Supervisory analysis of product governance can also take account of these indicators when evaluating the consumer research firms carry out to design products.

Figure 3c: Early warning indicators—Consumers

All financial products will tick some of the general risk indicators in this section, so, like any other regulatory tool, sets of behavioural risk indicators need to be calibrated through practice. Really problematic markets are likely to have many, if not most, indicators. Payment protection insurance, for example, exhibited almost all of the indicators above.

Observing many indicators at once does not, however, necessarily demonstrate a specific behavioural problem. Some indicators can be explained by non-behavioural factors (for example, excess profits may be due to structural competition problems) or, in some circumstances, genuine business strategies that serve consumers' interests. Even when behavioural problems are the likely cause, a particular indicator can often be triggered by several different biases (although the pattern of triggered indicators can suggest which biases are more likely to be at play). After identifying potential risks it is therefore important to investigate the issues further to determine what is causing them, as discussed in Section 7.

The “functional” perspective on product risk

A complementary way to look for risks arising from consumer mistakes is to take a “functional perspective” on products, and to look for a mismatch between:

- the consumer need the financial product is meant to serve; and
- how consumers actually use it in practice.

For example, step-up mortgages in the US before the financial crisis offered rates that were very low for a fixed period and increased dramatically afterwards. The “declared purpose” of this product was to allow people with temporary low income or bad credit to buy a home and then quickly refinance to a sustainable deal once their circumstances improved. In practice, the main customers for these mortgages were subprime borrowers who, realistically, had no hope of improvement in credit scores. Mismatch between the declared and actual consumer usage resulted in mass defaults among subprime homeowners once their low fixed rates expired.

Evidence of widespread consumer mistakes in financial markets provides a powerful argument for putting a greater onus on the firm's product governance to demonstrate that a product's purpose and its actual usage by consumers are aligned, especially for complex products. For innovative products it is also important to ensure that the firm's product testing captures all major targeted types of consumers. This is because typical early adopters for new products, in financial services and elsewhere, often are more sophisticated and have different needs from “mass market” consumers, so their experiences alone may not be representative.

How can we prioritise dealing with behavioural issues?

As already mentioned, issues that are wholly or partly driven by behavioural biases will be subject to prioritisation in exactly the same way as other issues. At the first stage, this is likely to be prioritisation for further investigation. Later, it may be necessary to prioritise for action. Size of the likely consumer detriment is one natural common basis for prioritising across a diverse range of issues.

Analysing detriment, however, becomes more challenging when behavioural biases are present. Because consumer choices we observe could be mistaken, it is not always clear what outcomes are in consumers' best interest and which are harmful. For example, to what extent do consumers genuinely derive emotional benefits from expensive but low value insurance? The beginning of Section 7 will outline some ways to help decide what mistakes (if any) consumers might be making in a particular case, but this analysis is often not straightforward.

Furthermore, as discussed in Section 5, behavioural biases can often result in situations where more sophisticated consumers receive a better deal than they would have achieved if firms weren't making high profits from more biased consumers. If prioritisation was based on aggregate consumer detriment, issues like this would not rank very high—some consumers lose, and some gain. But, in fact, it is possible that they deserve regulatory attention because poor or vulnerable consumers may be exploited through unauthorised overdraft fees to pay for higher in-credit current account rates for the more wealthy consumers.

The example just given raises the difficult issue of welfare weights. Should the FCA value costs to some consumers higher than countervailing benefits to others? Such challenges posed by behavioural biases are ultimately issues for broader regulatory strategy—what factors we look for in assessing what market outcomes are desirable or, indeed, acceptable?

7.

Understanding the root causes of problems

The early warning indicators in Figure 3 or other issues that have tipped off the investigation of a particular product market or firm may often have several plausible explanations with different regulatory implications. When trying to understand the root causes of the problem we need to identify the relevant explanations and whittle them down based on how well their predictions match the evidence, at least until the remaining possible causes point to the same regulatory remedies (Figure 4).²⁷

Investigating causes of behavioural problems can at times be complex because of three main reasons:

- it is not always clear that consumers are making mistakes at all—they could be choosing reasonably, and restricting these legitimate choices could make consumers worse-off;
- choices that are not reasonable could be caused by different biases that require different interventions; and
- as already mentioned, biases are often not the only sources of problems in retail financial markets, and they interact with competition problems and information asymmetries. These interactions need to be understood to develop effective interventions.

These considerations are relevant for the analysis of market failures by the FCA's Policy, Risk and Research Division and in supervisory investigations of suspicious market practices. The key difference for supervision is that suspected exploitation of behavioural biases that is specific to a single firm will normally require much lighter analysis than diagnosing market-wide issues. Thematic issues, for example where a set of firms is behaving poorly but the market as a whole is not malfunctioning, will usually sit between these extremes.

This section starts by setting out some general considerations in understanding underlying consumer biases, and then outlines the key behavioural implications for analysis of root causes for firm-specific and market-wide problems.

Figure 4: Understanding the root causes of behavioural problems

Could consumers be choosing reasonably?

Any investigation of a potential behavioural issue needs to consider whether it is possible that consumers' choices are reasonable. If consumers could, in principle, be making reasonable choices it is much harder to justify intervention on consumer protection grounds unless consumers are being explicitly misled about the financial products they are buying; otherwise, restricting choices can harm consumers and would sit ill with the FCA's pro-competition remit.

Many consumers use payday loans because, despite high APRs, that is the only source of credit available to high-risk borrowers in emergencies. They might be made worse off by caps on APRs or restrictions on how often they can borrow if they reduce availability to some consumers. Indeed, usury laws and similar provisions have been cited as an example of regulatory failure driven by regulators' own behavioural biases.²⁸

One option is to look for inconsistencies—for example, when consumers' product choice contradicts their stated objectives for the purchase or changes depending on how information is presented (Box 3). In fact, inconsistencies were what first tipped off psychologists about the existence of behavioural biases. But often it will not be possible to get clear and conclusive evidence.

Box 3: Detecting inconsistencies in choices**The following can help us identify whether consumers are making mistakes:**

- i. Consumers making self-contradictory choices. For example, by putting spare money into a zero-interest current account while increasing their credit card balance.
- ii. Consumers' choices changing in response to variation in irrelevant factors, such as how information is presented. For example, greater willingness to take up a personal loan offer when a photograph of a woman is added to a letter.
- iii. Purchases based on clear misunderstanding of the available facts. For example, a consumer might hold a structured product thinking it protects from capital losses, even though disclosure about possible downside risk was made at the point of sale.
- iv. Consumers choosing a clearly inferior product over an easily available alternative. For example, buying the more expensive of two mutual funds identical in all relevant features except administration charges when information about both is easily available.

If consumers are biased, what do they truly want?

Even after concluding that consumers are making mistakes because of behavioural biases, it can often be a challenge to determine what outcomes they would really want to achieve (their *true preferences*). This is because we can only observe consumers' bias-driven choices.²⁹

In fact it may not be possible to infer true preferences at all. If we cannot determine which of the consumers' choices are correct and which are mistaken, even though the choices are contradictory, then we cannot tell what their true preferences are. We might see that when marketing literature is presented one way consumers choose one product but when it is presented another way they choose a different product, even with no relevant change in the information presented and with no way to infer which choice is better for the consumer. Such situations can be common.

It is important to establish, or at least have a reasonably informed view of, true preferences, as far as possible, to determine whether mistakes are important. If there is little difference between the outcome of mistakes and true preferences, regulatory intervention is unlikely to be justified.

Since we cannot observe the true preferences in the presence of mistakes directly, it is often necessary to look to circumstantial evidence (Box 4) in determining what choices consumers would make if they were acting in line with their best interests.

Box 4: Sources of evidence about consumers' true preferences

The following evidence can help investigate what choices are most likely to be in consumers' best interest (i.e. their true preferences):

- i. *Choices contradict very reasonable and rather uncontroversial assumptions about what people value.* For example, choices that imply that the person prefers lower returns or higher prices to higher returns or lower prices, other things being equal, could be mistaken.
- ii. *Comparing experienced (or more informed) and novice users,* as experienced users are less prone to mistakes. For example, by looking at how experienced financial consumers choose investment funds or how often they incur overdraft fees.
- iii. *Comparing passive and active choices.* If consumers are affected by a default option (such as an opt-in purchase of an add-on), we can get information about true preferences by examining how they choose when they have to make an active decision with no default.
- iv. *Comparing stated and revealed preferences,* as consumers may often act in ways that are inconsistent with their declared goals. For example, if a consumer invests all her assets in the shares of her employer, her choice could reveal a high-risk preference or an inconsistency between intentions and actual behaviour if it contradicts her stated preferences for low risk. However, self-reports must be used with caution as they can also be distorted by biases.

Identifying biases highlights the need for data on the same or similar consumers in different situations (Box 3) or on choices over time (ii), or for data direct from consumers using surveys (iii, iv). Regulatory product sales data often will not be sufficient as we cannot track the choices of individual consumers. More than previously, the FCA will need consumer data that we either gather ourselves—from mystery shopping, online surveys, qualitative evidence, or Official of National Statistics surveys such as the Wealth and Assets Survey—or get from firms.

As mentioned above, consumer detriment is, in effect, the gap between the outcomes that consumers actually get and the outcomes that are in their best interest. For example, if consumers are buying an expensive insurance add-on because they do not pay attention to the relevant information, research could explore what they would pay for the product if they understood it properly (i.e. their true preferences). For consumers who valued the product below what they actually paid, the consumer detriment is the difference between the actual and the “informed” price.

How should we analyse firm-specific issues?

In most firm-specific issues, it should be enough for our supervisors or authorisation case officers to consider the questions of consumer rationality and true preferences qualitatively when investigating a suspicious product or sales practice. Nonetheless, very similar behavioural insights can inform the dialogue with the firm about the identified behavioural risk:

- Can the firm provide a credible business rationale for why the product or practices are profitable without implicitly relying on exacerbating consumer biases?
- What consumer research or data analysis has the firm done to determine what consumers needs are and how the product meets them?
- What data can we gather from the firm or the market to look for more risk triggers?
- Given the evidence above, could consumer choices to buy the product be reasonable?
- If not, which consumer biases are being targeted? (i.e., what types of consumer mistakes would make the firm's action profitable? Do observed consumer behaviours conform to this hypothesis?)

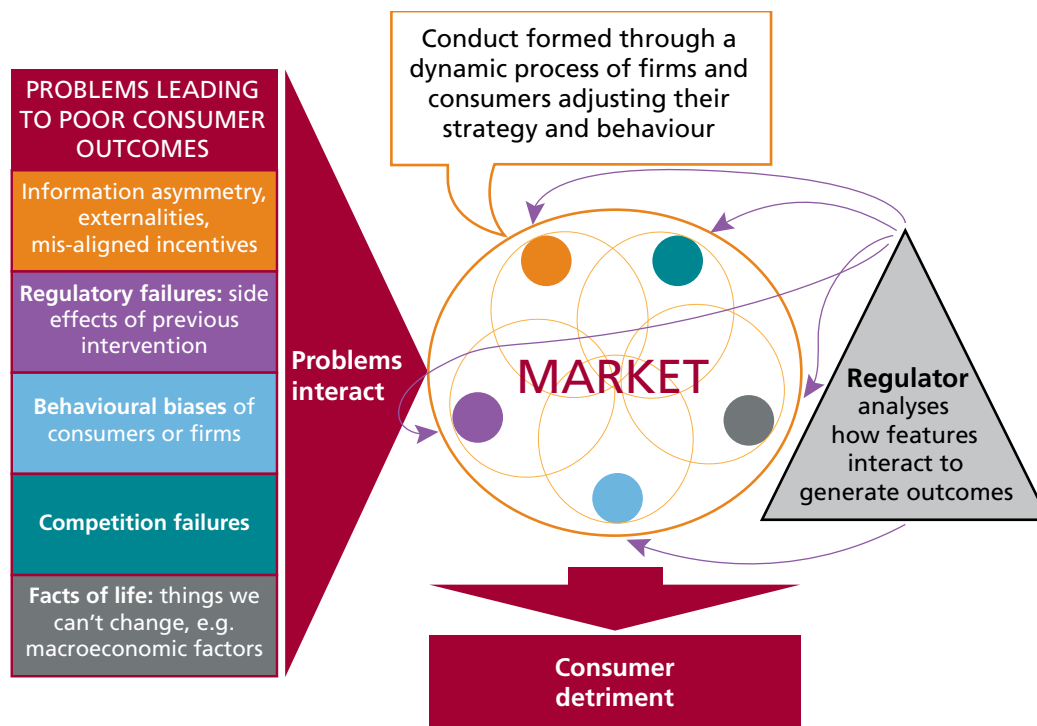
We will often need firms to provide this evidence, possibly including detailed analysis of firms' interactions with consumers. For example, we may want to know how consumers use products after they purchased them and how this usage relates to the contracts they were offered at the time of purchase. Would consumers have been better-off if they had chosen differently? Sometimes we might also want to consider the full range of options open to the consumer in the market, not just from one product provider, to evaluate whether choice is reasonable.

As discussed in Section 5, the presence of behaviourally biased consumers can fundamentally change the nature of competition in the market, for example, creating market power for product suppliers even when there are many suppliers in the market, or giving rise to situations where refusing to sell exploitative products is not commercially viable. How competition might operate if consumers are prone to biases is an important factor to consider when analysing the viability and risks of a firm's business model.

When responding to behavioural risk triggers in a firm it is also **necessary to check whether the risky product feature or practice is common to a number of firms or even is market-wide**. At least more detailed analysis and more coordinated remedies are likely to be needed. In fact, the analysis may need to be as broad, deep and technical as the analysis of market-wide issues where that level of detail is appropriate.

How should we analyse market-wide issues?

Analysis of potential market-wide problems will often form part of the standard policy development process and as such use the 'Integrated Analysis' approach developed for the FCA (Figure 5). As discussed in Section 5, behavioural biases often interact with competition weaknesses and other problems in markets, such as classic information asymmetry.

Figure 5: Integrated analysis of market-wide problems

Often addressing only one of the issues in isolation will give a wrong diagnosis of a problem and remedies to tackle it will be ineffective or counterproductive. For example, research from the US health insurance market shows that because of information problems in the market a behavioural intervention that aimed to reduce consumer inertia and encourage consumers to switch made consumers worse off. This is because more consumer switching makes it more difficult for insurers to price risk accurately, and premiums rose as a result.

At the stage of investigating root causes of problems and generating plausible explanations it is important to **consider the broad context of the market, including how firms compete, what other market and regulatory failures are present and how biases interact with these factors.**

For behavioural issues, the analysis will follow the broad structure outlined in Figure 4 earlier. So it will start by identifying explanations of observed issues, including different combinations of biases and the possibility that consumers' behaviour is reasonable. It will then explore which explanations predict consumer behaviours and firm responses that are the closest to how the market operates in practice. The level of evidence required would naturally be greater than for firm-specific interventions, but would vary considerably depending on how large the potential problem is (i.e. the potential consumer detriment) and how granular the understanding of root causes needs to be to determine which remedies would be most effective.

After coming up with the plausible explanations that can involve combinations of behavioural biases and other root causes, we can use some of the following questions in gathering evidence and eliminating less likely reasons for what we observe:

- Is there evidence to suggest that consumers' choices could be reasonable despite appearing mistaken?
- Does reconciling the predictions with the observed behaviour require assumptions (e.g. about consumers' true preferences) that are highly implausible?
- Are there different groups of consumers with different behaviours? Can their differences explain cross-subsidisation occurring in the market (if any)?
- If our hypothesis about how consumers make choices was true, would the business strategies we observe in firms be commercially viable?
- Is competition in the market (e.g. profitability or focal points in marketing) occurring in ways that are consistent with presence of the hypothesised biases?
- What other non-behavioural problems might be affecting the market, and how do they interact with biases?

One key difference from the firm-specific work described above is that exploring the reasonableness of consumers' choices and their true needs in a market-wide analysis of underlying problems can require collecting **first-hand data from consumer research or experiments**. Box 5 discusses an example of an experiment to understand whether consumers are mistaken in their valuations for extended warranties. Exploring questions like this is particularly important in cases where consumers could be getting emotional benefits from products of low financial value (such as many insurance add-ons) because intervening would be contentious, as discussed in Section 3.

Box 5: Are people making mistakes when buying extended warranties?

Extended warranties for products such as TVs and washing machines cover the cost of repair or replacement if the good fails after the manufacturer's guarantee expires. But do they provide a good deal? Based on the likelihood of claiming and the size of the potential claim, warranty prices exceed the actuarial value by up to twelve times, so the financial benefit is low.

Why, then, are people willing to buy extended warranties at the prevailing high market prices? Drawing on existing research, two academics from US Law Schools, Tom Baker and Peter Siegelman, suggest two explanations:

The "emotional risk management device"	The "mistaken calculator"
Consumers are willing to pay much more than the actuarially fair premium because they value the non-financial benefit the warranty brings, i.e., "peace of mind". So the warranty could be worth the price.	Consumers miscalculate the financial benefits of the warranty, because they overestimate the likelihood that the product will fail, the cost of repair or replacement, or both. So buying a warranty is a mistake.

Which explanation is true? There is some evidence on how consumers evaluate extended warranties in hypothetical settings without seller's influence. Huysentruyt and Read (2010) surveyed consumers in London and Belgium on a hypothetical purchase of an extended warranty for a washing machine. They found that both drivers affect consumer decisions:

- Consumers widely overestimate the probability of breakdown and the cost of repair. Most consumers tended to overestimate the actuarial value roughly three times.
- For most consumers the perceived non-financial benefit of the warranty is a much more important factor that drives them to buy the warranty than the overestimation of likelihood and cost. Even consumers who did not overestimate the actuarial value were highly influenced by the emotional considerations when deciding on whether to buy a warranty (though they were less likely to buy one than consumers who were also mistaken about facts).

However, this evidence does not account for the fact that salespeople or sales websites can and, evidence suggests, often do manipulate consumer emotions at the point of sale, which may temporarily distort their willingness to pay for insurance above their normal "emotional risk management" valuation. So specific evidence about such manipulation, which could for example be obtained through mystery shopping, could be important when we are deciding whether to intervene in a specific case.

Randomised Controlled Trials (RCTs) offer one of the most direct ways of getting evidence on consumer choices. RCTs are often used to assess the relative effectiveness of possible interventions (see Section 8 below). But understanding root causes and testing interventions can occur together. The potential explanations for a particular problem motivate the different interventions to test in the RCT. The results from the RCT about how people respond to remedies can illuminate which of the possible causes of the problem is most likely and what remedies are more likely to work in practice. The following example illustrates how RCTs can be useful in analysing market-wide issues.

Box 6: Why do credit cards have teaser rates? – an RCT

Identify an issue	Many credit cards have low teaser rates for an initial period, but high flat rates and charges after that.
Potential explanations	Consumers may be present-biased and overconfident, underestimating how much they will borrow when the teaser rates expire. Or, alternatively, consumers taking up these cards could be behaving rationally: this may be the best credit card for them, given when and how much they borrow.
Evidence to understand the root cause	Investigate the following: • For offers for credit cards, how do consumer response rates change when the teaser rate is varied versus when the flat rate is varied? • How do these response rates compare with consumers' subsequent borrowing? Do they excessively respond to teaser rates compared to flat rates? • How do expectations of future credit usage correspond with actual usage? Do consumers borrow more than they expect to?
Assess problem	To explain persistently high profit margins in the US credit card market, despite many competing firms, Larry Ausubel, a professor of economics at the University of Maryland, suggested that consumers may make credit card choices without taking account of the very high probability that they will pay interest on their outstanding balances. He later worked with a firm that conducted an RCT when sending consumers credit card solicitations through direct mail, randomly varying teaser rates and flat rates for different consumers. The findings: consumers substantially over-respond to the teaser rate compared to the flat rate (almost three times more), given how much they subsequently borrow. The evidence is consistent with consumers systematically underestimating the extent of their future borrowing. So regulatory intervention may be justified.

8.

Designing effective interventions

We now focus on what interventions could be used to address the diagnosed problems, and how to choose among them. The ideas here are, however, only preliminary. The FSA's regulatory experience shows that consumer biases are usually just one part of the story. When other structural or systematic problems are present in markets, it will probably not be enough to target only the behavioural problems; instead, a package of market-wide measures is likely to be required.

By applying behavioural insights the FCA can design new types of interventions and expand its regulatory toolkit. But solutions to behavioural problems are not necessarily always "behavioural" in nature, and interventions like imposing stronger product governance standards, banning or restricting product features, or restricting marketing of a product to certain types of clients or through certain distribution channels may still be highly relevant.

Evidence on how consumers react to design of information and the choice environment they encounter shows that being aware of behavioural reactions will also matter when intervening to address non-behavioural problems. Moreover, using behaviourally-informed remedies may be crucial for such an intervention to be successful and to avoid adverse effects.

In each of the sections below we will briefly suggest how these findings could inform the work of specific areas within the FCA, given its intended regulatory strategy of early intervention to prevent or address practices that harm consumers.

How can we intervene to protect consumers?

Broadly, we distinguish four main ways in which the FCA could intervene when consumers are at risk of harm because of biases:

1. **Provide information.** Require firms to provide specific information in a way that is not likely to exacerbate consumer weaknesses, or prohibit specific marketing or promotion materials or practices where they unfairly target such behavioural weaknesses, biases or mistakes.

Example: require firms to give consumers data on past product usage or claims ratio.

2. **Change choice environment.** Adjust how choices are presented to consumers to address biases.

Example: set the default options for products by requiring consumers to make an active decision instead of being automatically 'opted in' to buying a product.

3. **Control product distribution.** Require products to be promoted or sold only through particular channels or impose marketing restrictions in relation to certain types of clients.

Example: require complex products to only be promoted with advice.

4. **Control products.** Ban specific product features or products that appear designed or otherwise likely to exploit consumer mistakes to their detriment, or require products to contain specific features to address the risk of detriment arising from such mistakes.

Example: require firms to remove or limit product features, such as high exit charges.

We discuss the specific interventions relevant for the FCA Authorisation, Enforcement, Supervision and Policy divisions below. However, consumer psychology is nuanced and even if we have a good high-level understanding of the problem, the specific intervention chosen might succeed or fail based on small details. This particularly matters when applying behavioural insights in information and choice environment design. The FSA has made extensive use of disclosure requirements in the past in relation to a number of product types, but evidence of major successes is limited.

RCTs, as described at the end of the previous section, offer an opportunity to test proposed interventions and can be relevant to both supervision and policy-making. Another option to explore is ‘nudges’, as practised by the Behavioural Insights Team in the UK Cabinet Office.³⁴ The idea of nudges is that small, well-designed prompts, rather than constraints, can trigger behaviour that is well-aligned with policy goals. Both providing information and changing the choice environment can be nudges.

For instance, consumers often fail to act in their own interests by taking up free or subsidised insulation of their homes. But giving people anonymised data about the fuels bills of other homes in the street where they live materially increases the take-up rate. Nudges were also at play during the London Olympic Games when they were used to coax rather than coerce people to use public transport, for example by sending travel passes and public transport directions with tickets.³⁵

The overall success rate of nudges is, however, still not clear. Much depends on how well-designed individual nudges are to exploit behavioural biases. A potentially useful aspect of nudges for the FCA is that they provide an alternative to more intrusive interventions in the markets. This may be important given our mandate to promote competition for the benefit of consumers.

One further option that we do not explicitly consider here, as it is not in our remit but rather falls to the Money Advice Service, is to educate consumers about their biases, and to equip them with the necessary skills to make good choices. While there is unquestionable value in improving consumers’ general understanding of financial services, the available evidence on financial education has mixed conclusions on its effectiveness in tackling behavioural weaknesses.³⁶ More generally the free provision of information may aid consumers. But it may be difficult to get them to access, understand and then use the information

Provide better information

When consumers struggle to understand or evaluate products, including features, costs, returns and risks, one solution to consider is to provide “smarter” information. Behavioural insights help us design information differently, bearing in mind how people actually process it and the common mistakes they make.³⁷ For example, people who get payday loans often do not understand how cumulative interest works when charges are presented in terms of

APRs, but can understand better when charges are presented in cash amounts they would incur over time.³⁸

Insights of this kind could be applied in practice in several areas at the FCA:

- **Supervision.** Behavioural insights can inform which information firms give consumers could be misleading and how firms can make it less misleading. This includes financial promotions and design of web pages.
- **Policy.**
 - Firms already provide specific, standardised information to consumers, as determined by the FSA and the European Commission, but FCA could, subject to European constraints, issue more detailed rules on unacceptable practices or prescribe specific information formats that are less likely to mislead.
 - There is also a case for providing different types of information. For example, the Department of Business Information and Skills has been working with the Behavioural Insights Team on the ‘midata’ initiative. The idea is to give new rights to consumers to access their personal transaction data in an electronic, portable and machine-readable format. This will allow consumers to gain greater insight into their everyday consumption and lifestyle habits by using applications and intermediaries to analyse their behaviour. This should enable them to make better choices and secure the best deals, which is in turn expected to boost competition between companies on quality and price, and to stimulate innovation. This potentially makes ‘midata’ an attractive prospect for the FCA, given its competition obligations. For example, we could require financial firms to give consumers information about their product usage and the charges and fees they have incurred.
- **Enforcement.** Behavioural insights can be used to make the communication between firms, FCA and consumers in redress cases more effective to encourage more consumers to claim redress.

What are the practical challenges?

There is not good evidence yet that behaviourally-informed information disclosures can be effective and some evidence suggests that they may not be, e.g. disclosure for payday loans appear to have little effect in preventing the rollover of loans. Information that tries to educate consumers about their biases has also had little material effect on how consumers make decisions.

Because the cues for effective information provision are often subtle, it is difficult to design effective interventions without testing different versions out in practice. Moreover, we will not always have the correct intuition about what format and design should work best for consumers. Box 7 describes a recent RCT carried out by the FSA on how to improve letters sent to consumers to encourage them to claim redress.

Box 7: An RCT to encourage consumers to claim redress

As part of regulatory redress exercises, firms that have mis-sold products are sometimes asked to write to customers. We suspected that consumers often do not pay sufficient attention to these letters, so we designed a randomised controlled trial to understand how to encourage more consumers to respond. We worked with a firm that was voluntarily contacting customers about a failing in its sales process.

What did we test?

Using behavioural insights, we developed seven changes (“treatments”) to the firm’s letter to test, which were applied randomly to the standard (“control”) letter that the firm had designed.

Envelope	Adds a message to “act quickly” to a plain envelope
FSA logo	Uses the FSA logo in the letter head
Salient bullets	Replaces the two bullet points at the top of the letter with more salient bullet points
Simplified	Makes the body of the letter simpler and more concise, by reducing the text by 40%
Claims process	Includes a sentence in bold explaining that the claims process would only take five minutes
CEO signature	Uses the firm CEO’s signature to sign the letter, instead of a generic “Customer Team”
Reminder	Sends a second letter three to six weeks after the first

What were the results?

Over a five-week period the firm sent almost 200,000 letters. Some of these were the firm’s original letter, while others included different combinations of the treatments listed above. The average redress due was only £21, and perhaps unsurprisingly the control letter (the firm’s original letter) had a 1.6% response rate. There were five treatments that consumers responded to: Salient bullets, Simplified, Claims process, Envelope and Reminders. Making all these changes to a single letter increased the response rate by six and a half times. Interestingly, the FSA logo had no effect, and adding the CEO signature even reduced the response rate slightly. We have published the full results of the trial in a separate Occasional Paper.

Change choice environment

We can, alternatively, draw on what we know about biases to ensure that choices are presented to consumers in ways that encourage them to make good decisions. Several principles can be applied in intervention design:

- **Use existing consumer rules of thumb.** For example, the order in which products or information about product features is presented can materially affect choices if the consumer uses order-related rules of thumb (e.g. picks the first product on the list).

- **Make what matters more salient and frame it in the right way.** Even if information is standardised, how much text there is, how simple it is, how prominently the numbers are displayed and in what order can have a large effect when consumers compare options.³⁹
- **Defaults matter.** Inert and inattentive consumers are likely to stick with the default, for example, if they are opted-in or opted-out of a specific product feature. People may also stick with the default if they perceive it as advice. By changing the default, one can nudge consumers towards more beneficial choices.⁴⁰

These insights can be applied by both Supervision and Policy. Recent FSA general insurance supervision work, for example, found the example of similar motor add-on insurance products sold by similar firms having very different penetration rates because one had a default from which consumers had actively to opt-out, while the other had not. In fact, 80% of consumers bought the add-on when they had already been automatically “opted-in” by default, compared to 40% when they had to actively choose to purchase it themselves.

Where supervisors spot firm practices that may take advantage of consumers’ decision-making processes through the principles listed above, understanding the principles can help us to question the firm, and remedy the situation by suggesting alternative orderings and presentation of information to improve consumers’ choices.

However, arriving at a market-wide policy will often be difficult, as case-specific ‘nudges’ that could be derived from the principles may be fragile and could be distorted by the firm. Without detailed testing it is hard to know how effective each proposed change is likely to be and what works best for consumers. So far, defaults have proven to be the most effective option. Defaults could be made to work in favour of consumers when we believe that the needs of most consumers would be better met by, say, a simpler, lower-cost version of a product.

An interesting example of a default set by the FSA is the so-called ‘RU64’ rule. The background is that the Government sets standards of simplicity, safety and fair charging for pensions and, if a pension meets these, it can be marketed as a stakeholder pension. RU64 requires firms advising a consumer to buy a personal pension other than a stakeholder pension to give a clear explanation of why it is better for the consumer – in effect creating a default. When RU64 was introduced it was effective in ensuring that stakeholder products were sold above more traditional and less consumer-friendly charging structures. And many non-stakeholder contracts adopted stakeholder-like charging structures. Overall, consumers have benefited from lower prices because of stakeholder pensions and the RU64 rule. It may be worth considering similar rules.

The degree to which defaults set by firms actually exacerbate consumers’ biases is not always clear, and opens the question of what is best for the consumer. There are several possible regulatory responses:⁴¹

- require consumers to make an active choice;
- ask consumers what they want (though answers can be influenced by presentation and therefore may not be reliable); and
- see whether consumer choices change with experience.

Control product features and distribution

When the more 'light-touch' options of information provision and changing choice architecture are unavailable or are likely to be ineffective, consumer protection considerations may require the FCA to intervene by restricting or banning certain product distribution channels, product features or even products themselves. However, we will need to consider such interventions in light of the FCA's competition obligations. We will need to make sure that controls on products or distribution are not impeding positive innovation and competition between financial services firms that benefit consumers.⁴²

Product intervention measures could include complete bans for certain types of product that are disproportionately likely to cause consumer detriment, either by virtue of how the product is designed or operated, or because of persistent and serious problems with how the product is marketed or sold. For example, single premium PPI, where customers paid a large one-off fee for payment protection over many years, was a type of insurance which in certain versions was unlikely to suit the needs of any consumer. Many other versions were inappropriately marketed well beyond the few consumers for whom this type of insurance may have been suitable. However, these interventions are more intrusive, and may actually reduce the welfare of those people who could benefit from the products.

In addition to bans, product controls could include requiring products to contain specific features or options. For credit cards, for example, rules could require that consumers be able to choose their own spending limit (within their credit limit), perhaps for different categories of product or services, e.g. casinos or gambling shops. Or current account providers could be required to alert consumers when their account balances go below a certain level. These hypothetical examples illustrate how interventions imposing requirements on products might address consumer behavioural biases.

As a preventive measure, potentially exploitative product features can be banned or at least further tested at the authorisation stage to prevent firms that have undesirable, especially anti-competitive, business models from entering the market.

Similar considerations apply to marketing or sales practices. With reference to a recent example of FSA intervention, it may be that there are some small businesses for whom interest rate swap products are suitable. It is clear, though, that very many of these sales depended on exploiting information asymmetry and some combination of over-confidence and persuasion/trust biases. Examining the behavioural factors in these sales would be a good way of drawing general lessons for our regulation, whereas the specific way in which information about possible costs was glossed over is probably of less value.

Should we intervene, and if so how?

One of the key insights from behavioural economics is that consumers do not always act in their own best interests. This has important implications for the FCA in terms of where we see the limits of consumer responsibility and how much value we place on choice and product variety. If consumer mistakes are predictable, there is scope for a regulator to intervene paternalistically, by which we mean to benefit consumers by affecting their choices or otherwise protecting consumers from their own mistakes.

Acting paternalistically does not necessarily imply firmer, more restrictive regulation. As explained above, behavioural insights create scope for *nudges*. These 'soft' paternalistic measures encourage consumers to choose options that are more likely to be beneficial for them and make mistakes less likely.⁴³ Restrictive options may still be necessary in some cases to

stop consumers making major errors, but advances in behavioural economics suggest there is significant scope for the use of softer, less restrictive options to protect consumers.

Table 5 gives examples of how soft and hard paternalistic policies can be used to address or mitigate mistakes caused by four common biases. (And in the case of the mortgage examples, also suggests that there are problems on the supply side, as the products may well pose problems for lenders as well.)

Table 5: Examples of soft and hard paternalistic options for intervention

Bias	Examples		
	Assessed Problem	Soft paternalistic option	Hard paternalistic option
Present-bias	People under-save for retirement and regret it later	Automatically enrol people in a default pension system, which allows them to opt out	Prescribe mandatory pension saving
Over-confidence	People buy mortgages that could become unaffordable (e.g. if base rates rise)	Require that point-of-sale information be framed to help consumers pay better attention to risks	Ban or restrict the sale of higher risk, potentially-unaffordable mortgages (e.g. loan greater than 4x salary or interest only loan)
Framing	Product marketing obfuscates the risk of a larger or more risky mortgage		
Susceptibility to persuasion	People buy inferior investment products because of persuasive sales techniques	Mandate a cooling-off period, allowing the consumer to change their mind. Or a period to wait before they can purchase the product	Ban particular sales techniques or ban specific products

Choosing between hard and soft options is not straightforward but, of course, the same can be said of many other policy choices. Points to consider include:

- Likely effectiveness over time: can firms get around the measure?
- Possible negative – but also positive – impacts on innovation and other aspects of competition.⁴⁴
- Overall impacts on welfare, including for example the difficult issues on true preferences and needs discussed above.
- Whether paternalistic interventions will reduce consumers incentives to learn about products, leading to worse outcomes.⁴⁵
- Whether the issue is really one for the regulator or one best left to the Government – this is important in some areas of paternalism, for example efforts made to shift current consumption expenditure to pension provision are essentially social policy, outside of the typical remit of regulation.

Overall, we must be aware that by affecting people's choices paternalistic options can have negative consequences if a regulator cannot assess well what is in people's best interests. This

is especially worrisome with hard paternalistic interventions, but is also a consideration with nudges. These worries suggest caution in intervening on the basis of behavioural biases unless the evidence base is solid and convincing. Nonetheless, recent cases from other regulators in the UK show that behavioural economics can be applied in practice (see Box 8).

Box 8: How other UK regulators have intervened using behavioural economics

Other regulators have started applying behavioural economics to intervene in markets. These examples show that a more detailed understanding of how consumers behave can create useful evidence with practical regulatory impact.

Gym membership contracts (OFT)

What was the concern?	Standard terms in gym membership contracts often specify a minimum membership period. Ashbourne Management Services Limited had minimum periods of between one and three years. A consumer wanting to terminate the contract had to pay all remaining fees. The OFT was concerned that this leads to significant consumer detriment.
How did behavioural economics help?	The OFT supplied an economic expert witness report that set out the concerns from a behavioural economics perspective. The Court's judgment explicitly referred to consumer errors, noting that the minimum terms can work as "traps" for consumers overestimating their use of the gym. Mr Justice Kitchin said that the business model of the firm was "designed and calculated to take advantage of the naivety and inexperience of the average consumer using gym clubs", whom the firm "exploited".
What changed?	The High Court ruled that the minimum length contract terms in thousands of gym membership contracts were unfair and unenforceable. An enforcement order was made against the firm.

Source: www.oft.gov.uk/news-and-updates/press/2011/60-11

Automatically renewable contracts for fixed-voice telephone and broadband (Ofcom)

What was the concern?	At the end of the minimum contract period for a fixed-voice telephone or broadband the contract is rolled over by default unless the consumer proactively cancels it. Such contracts can benefit consumers who would have wanted to renew anyway, but harm those who did not but mistakenly did not cancel. Ofcom was also concerned about a negative effect on competition.
How did behavioural economics help?	Econometric analysis of switching behaviour of consumers of the largest firm in the market (BT) showed low levels of consumer switching. Ofcom used behavioural economics to argue that this is caused by the automatic renewal feature, and that many consumers do not 'opt-out' due to the 'default bias' (largely caused by inertia).
What changed?	Ofcom decided to prohibit automatically renewable fixed-voice telephone and broadband contracts to residential customers and small businesses. All such contracts have to be removed from the market by the end of 2012. BT did not challenge the decision.

Source: www.oft.gov.uk/news-and-updates/press/2011/60-11

How can we improve interventions through assessing their impact?

The final issue in this section on the design of effective interventions is the role of Integrated Analysis, in particular the Market Failure Analysis (MFA) and Cost Benefit Analysis (CBA).

The crucial point arising from the MFA is that the option selected must correct the relevant market failures, including after firms have reacted to implementation of the option. Alternatively, if correction is impossible or not possible at an acceptable cost, the intervention must be designed to offset the effects of the failures identified.

The role of the CBA is to inform a decision on which of the options available is likely to secure the best balance of costs and benefits. To do this, the CBA may need to cover, among other things, the first four of the five items in the list at the end of subsection above. Acknowledging the variety of behaviours and responses that consumers and firms have makes it more difficult to estimate costs and benefits.⁴⁶ For example we cannot assume that the choices consumers make necessarily reflect their true preferences. So the FCA may need to adapt the FSA's approach to CBA to take account of behavioural insights.

The FCA can use four complementary approaches to estimate the impacts of policies:

Methodology	How it changes analysis of costs and benefits
(i) descriptive analysis	A description of how consumers might respond and what outcomes this would cause, without quantification
(ii) measuring financial gains and losses	A quantitative estimate of any change in consumers' financial wealth accompanied by a descriptive analysis of behaviour
(iii) subjective well-being analysis ⁴⁷	A quantitative analysis of how consumers reported well-being changes, including both financial and non-financial (e.g. emotional) effects
(iv) behavioural welfare analysis ⁴⁸	A quantitative estimate of how consumer welfare changes, measuring the amount of money a consumer would see as equivalent to changes in the product holding as a result of the policy

These approaches can provide a realistic picture of the impacts of policies. Since the latter two approaches require much more time and data, it will only be proportionate to use these for the most significant policies, such as the Mortgage Market Review or the Retail Distribution Review. Descriptive and financial analysis may be useful in making supervisory decisions as well.

The quality of CBA, of course, depends on the quality of the underlying evidence. As we have established, people can respond to policy in unpredictable ways; so it will be vital to use good evidence on consumer behaviour.

9. Conclusions

Behavioural biases have marked effects on how people make economic decisions. These effects are particularly pertinent in financial services where products are particularly complex, where consumers may not have much opportunity to learn about products, and where decisions often involve assessment of risk and uncertainty, trade-offs between the past and the future and emotions such as anxiety or regret.

The overall strategic objective of the FCA is to make markets for financial services work well for consumers. We will need to understand what consumers want and how they behave in the markets we regulate. This includes understanding which decisions consumers particularly find difficult and why, whether and how they make mistakes. And we must understand how specific product features or firms' marketing and sales strategies affect consumer behaviour.

When it comes to fulfilling our overall objective and competition obligations, and ensuring that we intervene appropriately and effectively, consumers' behaviours are only part of the story, albeit essential. We need to consider other factors that shape market outcomes and firms' business models—structural and other competition issues, information problems and misaligned incentives. These factors can interact with each other and with behavioural biases. Although this paper focuses on consumer biases in retail financial services, we will also need to consider how behavioural biases affect the behaviour of individuals in firms, or even whole companies.

We have given considerable thought to what behavioural economics might mean for the FCA in practice, in particular how it should be integrated into the broader context of regulatory analysis. Behavioural insights have implications for many functions of the organisation:

- creating policy rules and guidance;
- analysing firms' business models, behaviour and products when authorising or supervising firms;
- building evidence for enforcement cases; and
- shaping FCA and firm communications with customers.

Our understanding will necessarily evolve as the new organisation takes shape. There is no mechanical routine to follow when applying behavioural economics (as there is no mechanical routine for addressing information problems or externalities). Nonetheless, it is clear that to use new insights about the drivers of consumer behaviours effectively will require changes in how different areas of the FCA identify risks, diagnose problems, and design and choose effective interventions.

Regulating to reduce consumer errors will pose significant challenges as there are relatively few precedents. We will have to tackle questions on a variety of difficult topics like what

is in consumers' best interests, where should the limits to consumer responsibility lie, and how effective are different 'soft' and 'hard' paternalistic interventions. The FCA will need to learn how to design and implement behaviourally informed remedies, possibly when there remains uncertainty about underlying consumer biases and their relationship with other market features. This implies that the FCA will need to test remedies before implementation more frequently than previously and conduct research to gain deeper insights into specific markets.

Integrating insights from behavioural economics with more traditional analysis of competition and market failures has much scope for helping the FCA choose the right interventions. We believe that the challenges around doing so are surmountable and this paper contributes to the foundations for the FCA to undertake wide-ranging, integrated analysis and then act on the results. This analysis should allow the FCA to intervene in markets in new and, importantly, behaviourally informed ways to better protect consumers, promote effective competition and ensure market integrity.

Annex:

Ten key biases, their effects, firm responses and potential remedies

We give selected citations for each bias. See also DellaVigna (2009) for an overview.

The examples of remedies are only illustrative. The tables do not provide an exhaustive list of possible remedies, nor assesses the likely effectiveness of each remedy.

I. Preferences

1. Present bias⁴⁹

(also known as time-inconsistent preferences or preferences for immediate gratification)

Description:	People respond to urges for immediate gratification (self-control problems, procrastination) resulting in overvaluing the present over the future (present-bias). As such choices are regretted in the future, people have time inconsistent preferences. Whether or not people are overconfident about future self-control is crucial: people who are realistic about their inability to carry through their plans may look for 'commitment devices' that will help them exercise self-control in the future.
Examples of behaviours:	As a result of urges for immediate gratification and inability to relate to their future selves, consumers: • do not save enough for their retirement; • over-spend on their credit cards and pay down debt less than they want to. Procrastination can lead to consumers postponing indefinitely all tasks that require even little effort, such as switching current accounts.
Errors that could be exploited by firms:	Overconfident people with self-control problems will mis-estimate future use of the product or particular product features. As a result: • underestimation of future use will lead to excessive willingness to pay at the point of purchase; • overestimation of future use will lead to underestimating or ignoring likely future costs, given actual consumption. Procrastination will result in: • lack of search for the best products or stopping search too quickly; • not reassessing whether the products they hold offer best value for money and switch if not; • not cancelling products that they intend to cancel or should cancel.

Firm responses:	Firms can adopt strategies that allow them to profit from these errors. Self-control problems can be exploited by: • Pricing strategy: offer price tariffs that seem attractive, given naivety about future consumption (e.g. gym memberships). Set low or no initial charges and appealing headline rates, but profit from setting high charges for product features that consumers naively do not expect to use (e.g. credit card teaser rates with higher charges in the future). • Advertising and sales process: focus on the low charges that consumers expect to incur but not the high charges that they do not expect to incur (e.g. credit cards). Procrastination can be exploited by: • Pricing strategy: • as consumers will not be very responsive to changes in product terms and features after take-up, can reduce the benefits these products offer (e.g. reduce the interest rate on a savings account); • offer 'free trials' with cheap rates, expecting most consumers not to cancel. • Product design: • even small increases in switching costs will result in procrastination (e.g. products that can only be cancelled by post); • make it harder for consumers to search for products (e.g. introduce complex product features that require making comparisons across several dimensions such as with insurance).
Examples of remedies:	• Enable consumers to commit to future actions they are likely to avoid otherwise (e.g. "Save more tomorrow" scheme in US allow consumers commit to future savings (Thaler and Benartzi 2004)). • Help people think about their future needs and 'connect with' their future selves (e.g. ask people to assess what they are going to spend on after they retire and think about whether they are currently saving enough). • Where consumers do not correctly assess their product usage, require firms to send consumers the relevant information (e.g. show credit card interest charges and how often consumers have excess balance). • Regulate firm practices, such as use of trial periods, that may be profitable because of consumer procrastination (e.g. require firms to ask consumers make an active choice to opt-in or opt-out after the trial period expires).

2. Reference dependence and loss aversion⁵⁰

(also known as prospect theory)

Description:	When evaluating a product or future prospects, people do not think of the choice or product in isolation. Instead, there are two features to these assessments: 1. Reference dependence: people assess the value of a product with reference to changes relative to a reference point (thinking in terms of gains and losses from that reference point). While the most common reference point is the status quo, it could also be set by expectations, other products available in the market, results of recent searches etc. Preference for a particular product may therefore change when the reference point changes. 2. Loss aversion: people often strongly prefer avoiding losses to acquiring gains because of hard-wired emotions (fear of losses). The degree of loss-aversion varies across people and situations. Loss aversion leads to: • <i>the endowment effect</i> (valuing a good more just because you own it); • <i>a preference for the status quo</i> (small net gains are not worth it); and • <i>distortions in attitudes to risk</i> (see below).
---------------------	--

Examples of behaviours:	Consumer attitude to risk can be affected in four ways depending on whether the events involve gains or losses and whether the likelihood is high or low:		
		Gains	Losses
	High probability	Avoid risk to 'lock in' the sure gain, pay for 'peace of mind'. Example: consumers pay to claim settlement companies (e.g. PPI).	Seek risks in vain hope of avoiding losses. Example: people with serious debt problems take desperate gambles.
	Low probability	Seek risk because hope for a large gain. Overpay for the chance of winning. Example: overpriced lotteries.	Avoid risk from the fear of a loss. Pay for 'peace of mind'. Example: over-insuring for small risks.
	- Loss aversion may make investors less willing to sell stock that has dropped in value. The pain from losses induces more risk-taking for 'loser stocks'. - The price at which a house was bought serves as the reference point and affects the selling price that a consumer sets—even if the price is above the market value and reduces chance of selling the house.		
Errors that could be exploited by firms:	- Consumers will demand products that give them 'peace of mind' and will be willing to pay high prices. - Consumers' valuations of the product and what they need can be shifted at the point of sale by offering alternative products that change their reference point, e.g. a product can appear cheaper when sold with more expensive products. - Owning a product may make a consumer value it more, and they will be less willing to exchange it for another or cancel because of the endowment effect. Choices may therefore exhibit status quo bias and there may be lack of switching.		
Firm responses:	Firms can adopt strategies that allow them to profit from these errors. Manipulating the reference points: - Advertising and sales process: include irrelevant alternatives or product features to shift reference point upwards or downwards (e.g. insurance 'optional extras'). - Pricing strategy: reference dependent pricing (e.g. drip pricing). Exploit endowment effects and loss aversion: - Advertising and sales process: framing in advertising and sales process (e.g. focus on losses that will be incurred if do not buy insurance). - Product design: design and sell products that cater to high loss aversion (e.g. insurance for small risks). - Pricing strategy: free trial periods, rebates.		
Examples of remedies:	- Provide alternative anchor or reference points that can lead consumers to better choices (e.g. increase minimum repayment value for credit card balances or introduce another reference value, as the current low values reduce how much consumers repay; suggest shorter timeframes for repayment). Restrict use of irrelevant product alternatives (e.g. insurance 'optional extras'). - Refer to losses in letters about redress to consumers to encourage response.		

3. Regret and other emotion driven preferences⁵¹

Description:	People avoid choice or are willing to pay for products just to avoid making a decision that they may come to regret. People may also shy away from ambiguity, uncertainty or stress even if the payoff from making the choice (e.g. sorting out debt) is likely to be very positive for them.
Examples of behaviours:	Buy insurance to avoid regret, even if it is too expensive (pay 'regret premium'). Do not sort out debt problems or do not buy financial products to avoid stress and anxiety.
Errors that could be exploited by firms:	Consumers will be ready to pay premium for products if these help deal with these emotions.
Firm responses:	Advertising and sales process: manipulate with these emotions in marketing material and sales process (e.g. refer to regret in insurance sales). Pricing strategy: charge excessive prices to reflect consumer willingness to pay premium to manage these emotions.
Examples of remedies:	Encourage consumers to assess whether they will really experience strong regret in the future (e.g. based on their past experience). Provide information on value for money that products provide and the extent to which consumers pay a 'regret premium' (e.g. pet insurance). Introduce 'cooling-off' periods during which consumers can cancel their purchase to allow 'hot states' to pass (e.g. strong emotions and anxieties driving purchase of insurance policies). Though this remedy may be ineffective if consumers procrastinate. Encourage consumers to think about what advice they would give others to help them be more objective, as people are less prone to emotions when choosing products for somebody else.

II. Beliefs

4. Overconfidence⁵²

Description:	People can show overconfidence in their beliefs about: • the likelihood of events, e.g. believe that good events are more likely to happen than bad ones; • their own ability and success at different tasks, e.g. their ability for self-control or the accuracy of their judgements. People are often overconfident because of: • hindsight bias: all events that have happened can be explained in hindsight, so people become overconfident about their ability to predict future events. • self-attribution bias: tendency to ascribe successes to own ability and blame failure on bad luck.
Examples of behaviours:	• Overconfidence about ability to predict future usage of products lead to consumers disregarding overdraft charges when choosing a current account. • Overconfidence about good outcomes being more likely than bad outcomes can lead to consumers to take on excessively risky investment products. • Overestimation of how precise the information is and underestimation of the uncertainty can lead to investors trading too much, given the costs of trading.

Errors that could be exploited by firms:	Consumers are likely to ignore or underestimate possible costs or risks, and as a result overvalue products at the point of sale or take on excessive risk. They are also likely to buy products that they will overuse or underuse.
Firm responses:	Firms can profit from overconfidence by catering to consumer misperceptions, e.g. set prices for products that seem to offer good value for money, given mispredictions about future usage. Tariffs which use a low fixed charge and high per usage charge are particularly effective where consumers underestimate usage.
Examples of remedies:	• Require consumers to think through problems, e.g. prompt or require to list the flaws of their chosen option and think through the reasons for why they might be wrong (“consider the opposite”). • Warn consumers of their overconfidence with forceful examples (e.g. overconfidence about ability to repay debt).

5. Over-extrapolation⁵³

(from small samples, also known as the Law of Small Numbers)

Description:	People often make predictions on the basis of only a few observations, implicitly believing that these observations are representative and suggest real patterns or trends. As a result, people also underestimate uncertainty.
Examples of behaviours:	• Predict future stock return from a limited number of past returns. • Overestimate future return of an investment product, based on past performance, underestimate uncertainty and choose products that are too risky. • Assess financial advice as good on the basis of a few successful investments, even though these could reflect pure luck.
Errors that could be exploited by firms:	Consumers will overvalue the likely product benefits and underestimate costs or risks, leading to excessive willingness to pay.
Firm responses:	Advertising and sales: present irrelevant information based on small samples (e.g. past performance statistics). Pricing strategy: set prices or fees that reflects consumers’ perceived expected benefit, but is too high compared with actual benefits.
Examples of remedies:	• Design smart information disclosures (timely, relevant, simple and easy to understand) with information about the objective likelihoods (e.g. regulate the information consumers receive from firms on insurance policy payout likelihood/actuarial value). • Regulate what and how firms provide information to consumers (e.g. information on past return of investment products).

6. Projection bias⁵⁴

Description:	People expect their current feelings, attitudes and preferences to continue in the future and underestimate the effect of possible changes. If their current choices are based on such expectations they can find themselves worse off if and when circumstances or their preferences do change.
Examples of behaviours:	Consumers may underestimate how much their preferences and circumstances may change when they grow older and not save enough as a result.
Errors that could be exploited by firms:	Consumers will overestimate or underestimate what they will want in the future, and may be willing to pay too much or too little, based on their current states.

Firm responses:	We have not yet come across of forceful examples from financial services.
Examples of remedies:	Set 'cooling-off' periods during which consumers can cancel their product purchase to allow 'hot states' to pass (e.g. where consumers make an impulsive purchase on a credit card or buy an add-on insurance product). Though this remedy may be ineffective if consumers procrastinate.

III. Decision-making Rules

7. Mental accounting and narrow bracketing⁵⁵

Description:	Mental accounting: people treat their money or assets differently according to a specific purpose that they have assigned to them, in order to make decision making more manageable. Narrow bracketing: people often consider the decisions they take in isolation, without integrating these decisions with other decisions that affect their overall wealth or level of risk they take on.
Examples of behaviours:	• Consumers borrow and save at the same time, thus losing money, or do not move money from the current account to the savings account. • Consumers expose themselves to inappropriate level of overall risk when making investment decision separately and not in the context of the whole portfolio.
Errors that could be exploited by firms:	Consumers are likely to adopt the frames and evaluations that they are presented with and will be blind to alternatives.
Firm responses:	Often there are many ways in which performance of a financial product can be evaluated (e.g. different time frames, including or excluding inflation, etc.). Firms can manipulate these frames to present an evaluation that is most advantageous to it.
Examples of remedies:	• Design smart information disclosures (timely, relevant, simple and easy to understand) that help consumers to consider the right information (e.g. what to take into account when assessing how diversified consumer portfolios are). • Regulate the information consumers receive from firms to prevent firms using frames that put their products in the most advantageous light, when it is not the case (e.g. over what time period calculate return on investment products).

8. Framing, salience and limited attention⁵⁶

Description:	People may react differently to essentially the same choice situation (in terms of objective pay-offs) because the problem is framed differently. Frames usually work by triggering a particular bias (e.g. loss aversion, reference dependence, regret, a rule of thumb), as certain information is made more salient and limited attention is paid to other facts.
Examples of behaviours:	• When looking at the advertised benefits of packaged bank accounts, consumers respond to these frames (e.g. "Worth £150!") and interpret the product as offering this level of benefits without considering whether these really apply to them individually. • Investment advisors stating the fees in % terms rather than in £ leading the consumer to underestimate the costs, where % charges are perceived as relatively 'low'. • Consumers basing decisions on headline prices for insurance or investment products.

Errors that could be exploited by firms:	Consumers make bad decisions as they focus on the salient and underweight or ignore the non-salient (but important) pieces of information. Such inattention and inappropriate focus may affect both how consumers search for products and how consumers evaluate the benefits of individual products. Consumers may not notice firms changing the value of non-salient components of prices or terms and conditions and over-respond to changes in the salient features.
Firm responses:	Pricing strategy: • create complex price structures and make total cost opaque or hard to judge; • exploit lack of sensitivity to high opaque charges, costs or add-ons by setting these comparably high; • add clauses within terms and conditions. Advertising and sales process: • exploit loss aversion; • include only some information in advertising and shroud other charges; • include irrelevant information that may influence valuation e.g. anchors for prices, or images.
Examples of remedies:	Take into account the specific ways in which the different biases create framing effects when designing information disclosures (e.g. whether or not consumers think advisor charges are high or low often depends on whether they are set in generic percentage terms or in monetary terms). Standardise frames that firms use to set out product fees and charges to ensure comparability across products.

9. Decision-making rules of thumb⁵⁷

Description:	People simplify complex decisions by adopting specific rules of thumb (heuristics). Common heuristics when choosing from a wide range of options are the following: • choose the most familiar; • avoid the most ambiguous; • choose what draws attention the most; or • avoid choice, including sticking to the status quo. When people have to estimate unknown quantities, they may anchor their estimates to a relevant or irrelevant number and adjust from there.
Examples of behaviours:	• Consumers choose sub-optimally when presented with options on aggregator websites, e.g. choose the first or cheapest option without considering all the relevant details. • Consumers pick how to allocate their pension pot across investment funds that do not reflect their attitude to risk, but rather pick particular funds and then allocate the pension pot equally among these (the 1/n heuristic).
Errors that could be exploited by firms:	Different rules of thumb may affect both how consumers search for products (e.g. only consider the products provided by five biggest companies) and how consumers evaluate the benefits of individual products (e.g. only consider two features of a product). As a result consumers may not find the cheapest and most appropriate product for their needs.
Firm responses:	If firms know what situations trigger which heuristics, they can design information and search process in a way that makes consumer choose a particular product. For example, change the order and manner in which products are presented (e.g. placement in a list).

Examples of remedies:	Overall, in most cases consumers will stick to using rules of thumb, as these save time and effort. A regulator can therefore either: • suggest alternative decision-making shortcuts that will lead to better choices (e.g. suggest what key features of insurance policies to take into account when picking a product from an aggregator website); or • change the decisions consumers face to ensure that they choose better products when using the particular rules of thumb (e.g. where consumers only take into account the most salient information ensure that it is the most relevant for a good decision).
------------------------------	--

10. Persuasion and social influence⁵⁸

Description:	Emotions in social interactions are important: consumers may allow themselves to be persuaded to buy a product just because the sales person is 'likeable', or may assess how good an advisor is at his job on the basis of whether he thinks he is a good person ('halo effect'). Consumers may also be unduly swayed by widespread product choices or usage patterns without adequately considering whether those apply to their own circumstances (social norms).
Examples of behaviours:	Consumers following financial advice based on how 'likeable' the advisor seems to them, as well as caving in under sales pressure.
Errors that could be exploited by firms:	Insufficiently account for the incentives of the information provider and make decisions on the basis of emotions (e.g. how likeable a person is).
Firm responses:	Advertising and sales process: • Include images (e.g. pictures of people), • Persuasion in sales process.
Examples of remedies:	Very little can be done to intervene directly to how persuasion and trust is used to convince consumers to take-up a product (and it is not always detrimental to consumers). Can regulate other aspects of advice to ensure that consumer and advisor incentives are aligned (e.g. advisors do not receive commission for pointing consumers to less-suitable products), and intervene where firms clearly use hard-selling techniques.

References

- Agarwal, S. Driscoll, J., Gabaix, X., and Laibson, D. (2008). Learning in the Credit Card Market. NBER Working Paper no. 13822, Cambridge, MA: National Bureau of Economic Research.
- Armstrong, M., and Huck, S. (2010). Behavioural economics as applied to firms: A primer, a paper prepared for the Office of Fair Trading.
- Ashraf, N., Karlan, D., and Yin, W. (2006). Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines. *Quarterly Journal of Economics*, 121(2), 635–672.
- Ausubel, L.M. (1991). The failure of competition in the credit card market. *American Economic Review*, 81(1), 50-81.
- Ausubel, L.M. (1999). Adverse Selection in the Credit Card Market. Working Paper, Department of Economics, University of Maryland.
- Baker, T., and Siegelman, P. (2013). Protecting Consumers from Add-On Insurance Products: New Lessons for Insurance Regulation from Behavioral Economics. U of Penn, Inst for Law & Econ Research Paper No. 13-1. Available at SSRN: <http://ssrn.com/abstract=2199569> or <http://dx.doi.org/10.2139/ssrn.2199569>
- Barber, B.M., and Odean, T. (2008). All that Glitters: The Effect of Attention and News on the Buying Behaviour of Individual and Institutional Investors. *Review of Financial Studies*, 21(2), 785-818.
- Barberis, N., and Thaler, R.H. (2003). A Survey of Behavioral Finance. In: Constantinides, G.M., Harris, M. and Stulz, R.M., eds. *Handbook of the Economics of Finance*, Volume 1B, Financial Markets and Asset Pricing. Amsterdam; London and New York: Elsevier, North Holland, 1053-1123.
- Barr, M.S., Mullainathan, S., and Shafir, E. (2008). Behaviorally Informed Financial Services Regulation. New America Foundation White Paper.
- Bar-Gill, O. (2012). *Seduction by Contract: Law, Economics and Psychology in Consumer Markets*. Oxford: Oxford University Press
- Benartzi, S., and Thaler, R.H. (2001). Naïve Diversification Strategies in Defined Contribution Savings Plans. *American Economic Review*, 91(1), 79-98.
- Bernheim, B. D. and Rangel, A. (2009). Beyond Revealed Preference: Choice-Theoretic Foundations for Behavioral Welfare Economics. *The Quarterly Journal of Economics* 124(1): 51-104.
- Bernheim, B.D., Fradkin, A., and Popov, I. (2011). The Welfare Economics of Default Options: A Theoretical and Empirical Analysis of 401(k) Plans. Working paper.

- Bertrand, M., Karlan, D., Mullainathan, S., Shafir, E. and Zinman, J. (2010). What's Advertising Content Worth? Evidence from a Consumer Credit Marketing Field Experiment. *Quarterly Journal of Economics*, 125(1).
- Bertrand, M. and Morse, A. (2011). Information Disclosure, Cognitive Biases and Payday Borrowing. *Journal of Finance*, December 2011, 66(6), 1865-93.
- Beshears, J., Choi, J., Laibson, D. and Madrian, B. (2008). How Are Preferences Revealed? *Journal of Public Economics*, 92(8-9): 1787-794.
- Cabinet Office (2012), Applying behavioural insights to reduce fraud, error and debt.
- Cabinet Office and Institute for Government (2010). MINDSPACE: Influencing Behaviour through Public Policy. London: The Stationary Office.
- Camerer, C. Issacharoff, S., Loewenstein, G., O'Donoghue, T. and Rabin, M. (2003). Regulation for Conservatives: Behavioral Economics and the Case for 'Asymmetric Paternalism'. *University of Pennsylvania Law Review*, 101, 1211-1254.
- Campbell, J.Y. (2006). Household Finance. *Journal of Finance*, 61(4), 1553-604.
- Campbell, J.Y., Jackson, H.E., Madrian, B.C. and Tufano P. (2011a). Consumer Financial Protection. *The Journal of Economic Perspectives*, 25(1), 91-113.
- Campbell, J.Y., Jackson, H.E., Madrian, B.C. and Tufano, P. (2011b). Making financial markets work for consumers: an open letter to America's first consumer protection czar. *Harvard Business Review*, 89(7), 47-54.
- Carlin, B.C., Gervais, S. and Manso, G. (2012). Libertarian Paternalism, Information Production, and Financial Decision-Making. Working Paper.
- Chater, N., Huck, S. And Inderst, R. (2010). Consumer decision-making in retail investment services. Report to the European Commission (SANCO).
- Choi, J.J., Laibson, D., Madrian, B. C. and Metrick, A. (2005). Optimal defaults and active decisions. NBER Working Paper no. 11074. Cambridge, MA: National Bureau of Economic Research.
- Cialdini (2006). Influence: The Psychology of Persuasion, Harper Business.
- Competition Commission (2009). Market investigation into payment protection insurance. Final Report.
- Conlin, M., O'Donoghue, T., and Vogelsang, T.J. (2007). Projection Bias in Catalog Orders. *American Economic Review*, 97(4), 1217-49.
- de Meza, D., Irlenbusch, B., and Reyniers, D. (2008). Financial capability: a behavioural economics perspective. FSA Consumer Research Paper 69.
- de Meza, D. and Reyniers, D.J. (2012). Every shroud has a silver lining: The visible benefits of hidden surcharges. *Economics letters*, 116 (2), 151-153.

- DellaVigna, S. (2009). Psychology and Economics: Evidence from the Field. *Journal of Economic Literature*, 47, 315-372.
- DellaVigna, S., and Malmendier, U. (2004). Contract Design and Self-Control: Theory and Evidence. *Quarterly Journal of Economics*, 119(2), 353-402.
- DellaVigna, S., and Malmendier, U. (2006). Paying Not to Go to the Gym. *American Economic Review*, 96(3), 694-719.
- Economist (2012a). Nudge nudge, think think: the use of behavioural economics in public policy shows promise. *The Economist*, 24 March 2012.
- Economist (2012b) The joy of the nudge Olympics, *The Economist*, 11 August 2012.
- Eliot, A., Dolan, P., Vlaev, I., Adriaenssens, C., and Metcalfe, R. (2010). Transforming Financial Behaviour: developing interventions that build financial capability. A report for the Consumer Financial Education Body.
- Ellison, G. (2006). Bounded rationality in Industrial Organization: in Richard Blundell, Whitney Newey, and Torsten Persson (eds.) *Advances in Economics and Econometrics: Theory and Applications*, Ninth World Congress, Cambridge University Press.
- Europe Economics (2007). An analysis of the issue of consumer detriment and the most appropriate methodologies to estimate it; Final report for DG SANCO by Europe Economics.
- Federal Trade Commission (2007). Improving Consumer Mortgage Disclosures: An Empirical Assessment of Current and Prototype Disclosure Forms. Bureau of Economics Staff Report, Federal Trade Commission, Washington, DC.
- Financial Services Authority (2006). A Guide to Market Failure Analysis and High Level Cost Benefit Analysis.
- Financial Services Authority (2008). Consumer responsibility. FSA Discussion Paper, DP08/05.
- Financial Services Authority (2011a). Product intervention. FSA Discussion Paper, DP11/01.
- Financial Services Authority (2011b). Mortgage Market Review: Proposed package of reforms. FSA Consultation Paper CP11/31.
- Financial Services Authority (2012). Journey to the FCA.
- Frey, B. S. and A. Stutzer (2002). What Can Economists Learn from Happiness Research? *Journal of Economic Literature*, American Economic Association, vol. 40(2), 402-435.
- Fujiwara, D., and Campbell, R. (2011). Valuation Techniques for Cost-Benefit Analysis: Stated Preference, Revealed Preference and Subjective Well-Being Approaches. HM Treasury Green Book discussion paper.
- Gabaix, X., and Laibson, D. (2006). Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets. *Quarterly Journal of Economics*, 121(2), 505-40.

- Genesove, D., and Mayer, C. (2001). Loss Aversion and Seller Behavior: Evidence from the Housing Market. *Quarterly Journal of Economics*, 116(4), 1233-60.
- Grubb, M. (2009). Selling to Overconfident Consumers. *American Economic Review*, 99(5), 1770-1807.
- Handel, B. (2011). Adverse Selection and Switching Costs in Health Insurance Markets: When Nudging Hurts. Manuscript, UC Berkeley.
- Heidhues, P., and Köszegi, B. (2008). Competition and Price Variation When Consumers Are Loss Averse. *American Economic Review*, 98(4), 1245-68.
- Heidhues, P., and Köszegi, B. (2010). Exploiting Naïvete about Self-Control in the Credit Market. *American Economic Review*, 100(5), 2279-2303.
- Henderson, B.J., and Pearson, N.D. (2011). The Dark Side of Financial Innovation: A Case Study of the Pricing of a Retail Financial Product. *Journal of Financial Economics*, 100(2), 227-247.
- Hirshleifer, D. (2008). Psychological Bias as a Driver of Financial Regulation. *European Financial Management*, 14(5), 856-874.
- Huberman, G., and Jiang, W. (2006). Offering versus Choice in 401(k) Plans: Equity Exposure and Number of Funds. *Journal of Finance*, 61(2), 763–801.
- Huck, S., Zhou, J., and Duke, C. (2011). Consumer Behavioural Biases in Competition: A Survey. A report for the Office of Fair Trading, OFT1324.
- Huysentruyt, M. and Read, D. (2010). How do people value extended warranties? Evidence from two field surveys. *Journal of Risk and Uncertainty*, 40, 197-218.
- Iyengar, S.S., and Lepper, M.R. (2000). When Choice Is Demotivating: Can One Desire Too Much of a Good Thing? *Journal of Personality and Social Psychology*, 79(6), 995-1006.
- Kahneman, D. (2002). Maps of Bounded Rationality: A Perspective of Intuitive Judgment and Choice. Nobel Prize Lecture.
- Kahneman, D. (2011). *Thinking Fast and Slow*. New York : Farrar, Straus and Giroux.
- Kahneman, D. and Sugden, R. (2005). "Experienced utility as a standard of policy evaluation. *Environmental and resource economics* 32(1): 161–181.
- Kahneman, D., and Tversky, A. (1974). Judgment under uncertainty: heuristics and biases. *Science*, 185, 1124-1131.
- Kahneman, D., and Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), 263–91.
- Kahneman, D., and Tversky, A. (1981). The Framing of Decisions and the Psychology of Choice. *Science*, 211, 453-458.
- Kahneman, D., and Tversky, A. (1991). Loss Aversion in Riskless Choice: A Reference- Dependent Model. *Quarterly Journal of Economics*, 106(4), 1039-1061.

- Köszegi, B., and Rabin, M. (2008). Choices, Situations, and Happiness. *Journal of Public Economics*, 92, 1821-1832.
- Köszegi, B., and Heidhues, P. (2010). Exploiting Naivete about Self-Control in the Credit Market. *American Economic Review*. 100(5), 2279-2303
- Laibson, D. (1997). Golden Eggs and Hyperbolic Discounting. *Quarterly Journal of Economics*, 112(2), 443-77.
- Langer, E.J. (1975). The Illusion of Control. *Journal of Personality and Social Psychology*, 32(2), 311-328.
- List, J.A. (2003). Does Market Experience Eliminate Market Anomalies? *Quarterly Journal of Economics*, 118(1), 41-71.
- List, J.A. (2004). Neoclassical Theory versus Prospect Theory: Evidence from the Marketplace. *Econometrica*, 72(2), 615-625.
- Loewenstein, G., O'Donoghue, T., and Rabin, M. (2003). Projection Bias in Predicting Future Utility. *Quarterly Journal of Economics*, 118(4), 1209-1248.
- Loomes, G., and Sugden, R. (1982). Regret theory: an alternative theory of rational choice under uncertainty, *The Economic Journal*, 92, 805-824.
- Madrian, B., and Shea, D.F. (2001). The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior. *Quarterly Journal of Economics*, 116(4), 1149-1187.
- Malmendier, U., and Shanthikumar, D. (2007). Are Small Investors Naive about Incentives? *Journal of Financial Economics*, 85(2), 457-489.
- Malmendier, U., and Tate, G. (2005). CEO Overconfidence and Corporate Investment. *Journal of Finance*, 60(6), 2661-2700.
- Malmendier, U., and Tate, G. (2008). Who Makes Acquisitions? CEO Overconfidence and the Market's Reaction. *Journal of Financial Economics*, 89(1), 20-43.
- Odean, T. (1998). Are Investors Reluctant to Realize Their Losses? *Journal of Finance*, 53(5), 1775-98.
- O'Donoghue, T., and Rabin, M. (1999). Doing It Now or Later. *American Economic Review*, 89(1), 103-24.
- O'Donoghue, T., and Rabin, M. (2006). Optimal Sin Taxes. *Journal of Public Economics*, 90(10-11), 1825-49.
- Office of Fair Trading (2010a). What does behavioural economics mean for competition policy?
- Office of Fair Trading (2010b). The Impact of Price Frames on Consumer Decision Making.
- Oxera (2013). 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, forthcoming.

- Prelec, D. & Loewenstein, G. (1998). The red and the black: mental accounting of savings and debt. *Marketing Science*, 17(1), 4-28.
- Rabin, M. (2002). Inference by Believers in the Law of Small Numbers. *Quarterly Journal of Economics*, 117(3), 775-816.
- Read, D., Loewenstein, G. & Rabin, M. (1999). Choice Bracketing. *Journal of Risk and Uncertainty*, 19, 171-197.
- Sandroni, A., and Squintani, F. (2007). Overconfidence, Insurance, and Paternalism. *American Economic Review*, 97(5), 1994-2004.
- Schultz P. W., Nolan J. M., Cialdini R. B., Goldstein N. J., and Griskevicius V. (2007). The Constructive, Destructive, and Reconstructive Power of Social Norms. *Psychological Science*, 18(5), 429-434.
- Shui, H. and Ausubel, L.M. (2005). Time inconsistency in the Credit Card Market. Working Paper, Department of Economics, University of Maryland.
- Spiegler, R. (2011). Bounded Rationality and Industrial Organization. *Oxford University Press*.
- Stewart, N. (2009). The cost of anchoring on credit card minimum payments. *Psychological Science*, 20, 39-41.
- Sugden, R. (2008). Why incoherent preferences do not justify paternalism. *Constitutional Political Economy*, 19(3), 226-48.
- Sunstein, C.R. (2010) Disclosure and Simplification as Regulatory Tools. Memorandum for the Heads of Executive Departments and Agencies.
- Sunstein, C.R. (2011a) Informing Consumers through Smart Disclosure. Memorandum for the Heads of Executive Departments and Agencies.
- Sunstein, C.R. (2011b). Empirically Informed Regulation. *University of Chicago Law Review*, 78 (4).
- Sydnor, J. (2010). (Over)insuring Modest Risks. *American Economic Journal: Applied Economics*, 2(4), 177-99.
- Thaler, R.H. (1985). Mental Accounting and Consumer Choice. *Marketing Science*, 4(3), 199-214.
- Thaler, R.H. (1999). Mental accounting matters. *Journal of Behavioral Decision Making*, 12, 183-206.
- Thaler, R. H., and Benartzi, S. (2004). Save More Tomorrow: Using Behavioral Economics to Increase Employee Savings. *Journal of Political Economy*, 112(1), 164-187.
- Thaler, R. H., and Sunstein, C. R. (2003). Libertarian Paternalism, *American Economic Review*, 93(2), 175-79.
- Thaler, R. H., and Sunstein, C. R. (2008), *Nudge: Improving Decisions about Health, Wealth, and Happiness*. *Yale University Press*.

Tufano, P. (2011) Data-informed consumer protection and promotion. Mimeo.

Tuckett, D., and Taffler, R. (2008). Phantastic objects and the financial market's sense of reality: A psychoanalytic contribution to the understanding of stock market instability. *International Journal of Psychoanalysis*, 89, 389-412.

Tversky, A. and Kahneman, D. (1971). Belief in the law of small numbers. *Psychological Bulletin*, 76 (2), 105-110.

Endnotes

1. Financial Services Authority (2008, 2011a, 2011b).
2. See, for example, the Cabinet Office and Institute for Government (2010) and the Office of Fair Trading (2010a). See Economist (2012a) on the use of behavioural economics in public policy.
3. Financial Services Authority (2012).
4. Office of Fair Trading (2010a).
5. Adapted from Kahneman (2011). Table 2 is adapted from Kahneman (2011, 98-99). See also Kahneman (2002).
6. DellaVigna (2009). Other approaches include MINDSPACE (Cabinet Office and Institute for Government, 2010) and Huck et al. (2011). While these approaches are useful for problem identification and remedy design, we find them not as helpful at diagnosing problems where the link between behavioural biases and their effects are particularly complex, such as financial markets. FSA Consumer Research Paper 69 *Financial Capability: A Behavioural Economics Perspective* (see de Meza et al. (2008)) did not introduce a typology, but rather covered the main themes and topics the authors thought of interest.
7. See Campbell et al. (2011a), de Meza et al. (2008) and Barr et al. (2008) on the behavioural issues of retail financial markets. See Benatzi and Thaler (2001) and Huberman and Jiang (2006) on product complexity in retail financial markets.
8. Almost all behavioural biases can be relevant for retail financial decision making. From the biases discussed in the survey paper by DellaVigna (2009) we only excluded other-regarding preferences.
9. The term 'bias' is sometimes used to describe an *effect* of a bias, rather than the bias itself. 'Status quo bias' (preference for the status quo), for example, can have different underlying causes, such as loss aversion, limited attention or procrastination rooted in present bias.
10. The biases we list here and the examples draw on a large number of sources, as detailed in the Annex. Relevant survey papers are Barberis and Thaler (2003) and DellaVigna (2009).
11. The *Europe Economics* review for DG Sanco (2007) claims that while sometimes we could question the validity of consumers' preferences and whether his choices are really in his interest, we should mostly respect them as reflecting 'genuine' preferences (see in particular Chapter 10).
12. Consumers tend to regret the choice after the fact, recognising that it was not in their best interest. There is a large range of academic literature that documents and seeks to explain these inconsistencies in credit present biased card borrowing —see, for example, Ausubel (1999), Köszegi and Heidhues (2010), Shui and Ausubel (2005) and many others.

13. Given the opportunity, consumers often welcome an opportunity to pre-commit to making decisions on a consistent forward-looking basis. For example, an experiment by Ashraf et al. (2006) found that consumers with more time-inconsistent preferences were significantly more willing to take up a commitment savings product and considerably increased their saving rates as a result.
14. See Bar-Gill (2012) and Spiegler (2011) on firm strategies when consumers have behavioural biases. See also Henderson and Pearson (2011) for a powerful example of negative financial innovation
15. See Barr et al. (2008) for a more detailed discussion of when the interests of firms are likely to be aligned.
16. See Financial Services Authority (2006).
17. For example, see Ellison (2006), Spiegler (2011), Huck et al. (2011) and Oxera (2013).
18. Gabaix and Laibson (2006).
19. Armstrong and Huck (2010).
20. Chater, Huck and Inderst (2010).
21. Chater, Huck and Inderst (2010).
22. Bertrand et al. (2010) and Chater, Huck and Inderst (2010).
23. Campbell et al. (2011a).
24. Tuckett and Taffler (2008).
25. Financial Services Authority (2012).
26. Campbell et al. (2011b).
27. See DellaVigna and Malmendier (2006) for a good, early example of academic research that builds evidence for a behavioural bias in a market (present bias and projection bias, in choosing a gym contract and then using the service).
28. Hirshleifer (2008).
29. See Köszegi and Rabin (2008) on the concept of true preferences and Bernheim and Rangel (2009) for welfare analysis when true preferences do not exist.
30. See Beshears et al (2008) on evidence about behavioural biases.
31. Baker and Siegelman (2013). See also Sydnor (2010) for explanations of why people insure modest risks.
32. Ausubel (1991).
33. Ausubel (1999).

-
34. See Thaler and Sunstein (2008), Sunstein (2011b) and Cabinet Office (2012).
 35. See Economist (2012b).
 36. See de Meza et al (2008) and Eliot et al (2010) for discussions of effectiveness of provision of education and advice to consumers.
 37. See Bar-Gill (2012) and Campbell et al (2011a) on the use of information disclosures, Sunstein (2010, 2011a, 2011b) on applying behaviourally-informed disclosure to policy and regulation and Federal Trade Commission (2007) on mortgage disclosure.
 38. Bertrand and Morse (2011).
 39. See Cabinet Office (2012) for a discussion of the presentation of information and citations.
 40. See Thaler and Sunstein (2008) or Sunstein (2011b) on the use of defaults as nudges and Choi et al (2005) for an early academic application.
 41. See Beshears et al (2008) for a discussion of these options.
 42. See de Meza and Reyniers (2012), for example, for a model where banning hidden charges can make consumers worse off.
 43. See Camerer et al (2003) and Thaler and Sunstein (2003) on soft paternalism.
 44. See Campbell et al (2011a) for a discussion on innovation.
 45. See Bar-Gill (2012) for a discussion on learning and Agarwal et al (2008) and List (2003) for evidence. See Carlin, Gervais and Manso (2012) for a model of potential negative impacts on learning from paternalism.
 46. See, for example, Fujiwara and Campbell (2011) for a survey of issues for assessment of benefits and a discussion of alternative approaches.
 47. See Kahneman and Sugden (2005) and Frey and Stutzer (2002). For an impact assessment example involving conversion of subjective well-being to monetary equivalents see Financial Services Authority (2011b).
 48. See Bernheim et al (2011) for an example of behavioural welfare analysis. See also O'Donoghue and Rabin (2006) and Bernheim and Rangel (2009) for theoretical underpinnings.
 49. See Laibson (1997), O'Donoghue and Rabin (1999, 2006), Madrian and Shea (2001), DellaVigna and Malmendier (2004), Thaler and Benartzi (2004) and Köszegi and Heidhues (2010).
 50. See Kahneman and Tversky (1974, 1979, 1991), Odean (1998), Genesove and Mayer (2001), List (2004) and Heidhues and Köszegi (2008).
 51. See Loomes and Sugden (1982), Huysentruyt and Read (2010) and Baker and Siegelman (2013).
 52. See Malmendier and Tate (2005, 2008), Sandroni and Squintani (2007) and Grubb (2009).
 53. See Rabin (2002), Kahneman and Tversky (1974) and Tversky and Kahneman (1971).

- 54.** See Loewenstein, O'Donoghue and Rabin (2003) and Conlin, O'Donoghue and Vogelsang (2007).
- 55.** See Thaler (1985, 1999), Prelec and Loewenstein (1998) and Read, Loewenstein and Rabin (1999).
- 56.** See Kahneman and Tversky (1981), Barber and Odean (2008), Chater, Huck and Inderst (2010) and OFT (2010b). Also see Gabaix and Laibson (2006) and Huck, Zhou and Duke (2011) for key firm responses.
- 57.** See Kahneman and Tversky (1974), Iyengar and Lepper (2000), Benartzi and Thaler (2001) and Stewart (2009).
- 58.** See Cialdini (2006), Schultz et al (2007) and Sunstein (2011b) for a discussion of social norms as 'nudges'.

