

Behavioural Economics and the Economics of Regulation

Briefing paper prepared for the New Zealand Ministry of Economic Development

By

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EXECUTIVE SUMMARY

Behavioural economics draws upon fieldwork, experiments and research in disciplines such as psychology for building blocks to construct economic analysis that is more descriptively realistic and both augments and qualifies traditional economics as a tool for designing policy. Though behavioural economics has attracted much attention and respectability in the past decade or so, its roots date back to work undertaken in Europe a century ago and in the US in the middle of the twentieth century. Whereas economists traditionally have seen choice as an optimising activity subject to given preferences and a well-defined budget constraint, behavioural economics sees everyday life as a process in which humans with limited cognitive capacity try to cope with both information overload and the absence of relevant information and knowledge by evolving targets for what seems feasible and systems of rules for trying to find ways of meeting these targets.

Some decision rules may be fast and frugal means of arriving at choices that do not result in needlessly poor attainments. However, much of what is known about how people actually behave implies that many people could be doing a lot better for themselves in many situations if only they were aware of the limitations of their ways of coping with the world and were motivated to find and apply improved decision rules. Poor search strategies limit the competitive pressures faced by firms and hence may have longer-term impacts on welfare via reduced productivity growth or innovation. However, in designing policies to promote better search by consumers one must remember that many consumers are also workers: higher productivity and better or cheaper goods may sometimes come at the cost of people having to work harder.

To the extent that firms are aware of shortcomings of consumers' decision-making processes, they may be in a position to apply this knowledge to manipulate choices, for example by how they frame information that is presented to consumers. Tendencies for consumers to lack self-control and to fail to reflect on the longer-term implications of their choices can very easily result in poor choices when credit is easily available. Regulatory policies could do more to promote careful reflection by consumer by erecting hurdles to delay choice, as well as by measures to make it easier for consumers to make comparisons and see the financial implications of particular choices. In designing such policies there is scope for integrating them with policies aimed at the promotion of self-funded retirement and environmental wellbeing.

The paper ends with detailed case study discussions of problems of choice in the markets for building renovation services and financial services. In the former, problems of finding good value for money are increased by the one-off nature of much of the work and by combination of shortages of trades-people relative to demand and large numbers of potential suppliers to approach for quotations. The environment is also conducive to consumers ending up overcapitalising in their renovations. In the market for financial services, the balance of risk-taking with property speculation and suchlike is stacked in favour of the loan providers, whilst the chances of inexperienced speculators getting into difficulties are enhanced because they are prone to use decision rules they have picked up from others belatedly and in simplified form. The implications of borrowing and superannuation choices should be made much more transparent to consumers, along with the futility of trying to beat the market rather than investing in market index funds.

1 INTRODUCTION

Though the economics of microeconomics textbooks is pretty much what it was when New Zealand's process of microeconomic reform began over two decades ago (aside from incorporating some material on game theory), this period has seen increasing diversity in how economists view the working of markets. For example, we now have a much richer view of markets, as collections of social institutions (including the regulatory rules of the game) that make it easier for buyers and sellers to do mutually beneficial deals (Hodgson, 1988, chapter 8), and there are attempts to view the economy in terms of evolutionary ideas and complex systems analysis (Potts, 2000, Dopfer, Foster and Potts, 2004). Such approaches focus on the role of rules in decision-making, where rules come from and how they are changed, rather than focusing on preference orderings and engineering-based production functions. At present, the rule-based approach to economics is yet to start taking over the core journals but a closely related economics research programme known as behavioural economics is attracting considerable interest within mainstream circles. In this paper I examine the nature of behavioural economics and attempt to see where it offers distinctive implications for the design of regulatory policy. The approach that I adopt paints a picture of behavioural economics that is rather broader than the version of it that the mainstream scholars are picking up and is in line with the rule-based evolutionary/institutional view of how to approach economics. My policy suggestions at times also go beyond mainstream ways of thinking, such as in respect of the potential for using interactive websites to prod consumers into taking higher-quality decisions. Some of these may be rather too radical for the moment but at least they may serve to provoke further lateral thinking about policy.

The rest of the paper is divided up into nine main sections. Section 2 explores the origins of behavioural economics, identifying a number of distinct approaches in different parts of the world and points in time. Section 3 examines the meaning of 'behavioural economics' in methodological terms. Section 4 is a detailed survey of the main ingredients of the behavioural view of decision-making processes. Section 5 suggests that this view of choice, in which consumers are seen as trying to cope rather than optimising, points to the possible value of generalising Leibenstein's famous (1966, 1976) notion of X-inefficiency to the context of consumer behaviour. It argues that the sources of consumption X-inefficiency are analogous to those that Leibenstein posited as causes of X-inefficiency in organizations. Section 6 examines in general terms the kinds of markets in which consumption X-inefficiency is likely to be rife and explores regulatory policies that might reduce it. Section 7 is concerned with some of the distributional issues that arise from attempts to reduce X-inefficiency. By way of showing in detail how the context of consumption can affect wellbeing, there are then two case studies of markets with considerable potential for improving the quality of consumer choices: section 8 examines the market for housing renovation products and services, while section 9 examines aspects of the market for financial services. Section 10 offers some concluding reflections.

2 ORIGINS OF BEHAVIOURAL ECONOMICS

Behavioural economics attracted public interest via a pair of *New York Times* articles on 11 February 2001 by Uchitelle and Lowenstein. These articles, which focus on the careers of US scholars Richard Thaler and David Laibson, give the impression that behavioural economics only emerged in the 1990s. So, too, does much of the commentary surrounding the joint award of the 2002 Bank of Sweden Prizes in Economics in Memory of Alfred Nobel to psychologist Daniel Kahneman (with experimental economist Vernon Smith), whose work, with the late Amos Tversky, like that of Thaler, has provided striking evidence that people frequently behave in ways that are systematically at odds with what is presumed in neoclassical economics. Likewise, the back cover of the 2004 collection of articles from about 1990 onwards, edited by Camerer, Lowenstein and Rabin, proclaims that ‘Twenty years ago, behavioural economics did not exist as a field’. Whilst it may be true that it is only in recent years that the economics departments in top US universities have started searching for staff with credentials as behavioural economists, the literature of behavioural economics was well-enough established before then for a two-volume collection of key articles (Earl, ed., 1988) already to have appeared, which included contributions dating back to 1949.

In fact, the origins of behavioural economics go back at least a century, to the work of Alfred Marshall in Cambridge. Marshall’s (1890, 1919) major works presented a view of economics that on the one hand included relatively formal models but on the other hand presented a more discursive analysis based on his investigations of the ordinary business of everyday life. Marshall had great knowledge of actual business practices and hence his less formal analysis emphasized learning processes in firms. He also presented consumers as learning agents, in contrast to subsequent models of consumers as constrained optimisers with given preferences. Around the same time, economic psychology began to emerge in mainland Europe with the work of Gabriel Tarde (1892, 1903), whose interest in the impact that social interaction and processes of imitation had on choice was echoed by the work of Thorstein Veblen (1899) on the status-seeking ‘conspicuous consumption’ of the *nouveaux riches* in the US. From Veblen’s work emerged the ‘Institutionalist’ approach to economics, which has had an enduring focus on the significance of habits, rules and codes of conduct on how economies work. However, such interest in learning, social interaction and the scope for enhancing economic theory by first acquiring knowledge of how economic agents actually behave was soon pushed aside as other economists sought to free the discipline from any dependence on other social sciences and to make it mathematically rigorous and self-contained.

The Marshallian approach resurfaced in the late 1930s with the work of the Oxford Economists’ Research Group (see Young and Lee, 1993). This is best represented by the classic volume *Oxford Studies in the Price Mechanism* (Wilson and Andrews, eds, 1951), which made considerable use of fieldwork and questionnaires, much to the horror of proponents of the emerging quantitative approach to empirical economics. It also introduced the idea of mark-up pricing and questioned the extent to which investment decisions were affected by changes in monetary policy. After World War II, Marshallian methods were followed by Philip Andrews and George Richardson (see Andrews, 1993; Richardson, 1998, 1999) at Oxford, and by Penrose (1959). Their work addresses the role

of information and knowledge (not just ‘know-that’ but also ‘know-how’ and ‘know-who’) in the development of businesses and the orderly functioning of markets, stressing that coordination depends on the web of relationships — such as goodwill, relational contracting, interlocking directorships and partial shareholdings — that develops between firms and their customers. Andrews emphasized the dependence of demand on access to technical information and after-sales support, and on whether or not items were actually stocked by retailers and hence capable of being discovered accidentally by consumers browsing for other products (cf. also Earl and Potts, 2000). His work leads one to be somewhat cautious about deregulating markets to the extent that has occurred in New Zealand, such as in respect of parallel importing or, more generally, regarding the presumption against manufacturers being allowed to engage in resale price maintenance (RPM). (For example, if limits to RPM enable discount retailers of general merchandise to cream off sales of best-seller books, videos and recorded music from specialist stores, it may have adverse impacts on sales of books, videos and CDs in general due to consumers having less reason to visit stores that specialize in selling them and such stores being less able to carry slower-selling items because of their losses of high-turnover items to the discount retailers.) Finch (1999) offers an analysis of Post-Marshallian methods, and emphasizes that they are not the same the so-called ‘grounded theory’ approach adopted in some other social sciences.

Within Europe, interest in bringing economics and psychology together revived from the late 1950s onwards, leading eventually to the founding of the *Journal of Economic Psychology* in 1981. It was also a European researcher, George Katona, who pioneered psychological research into economic behaviour in the US, as director of the Survey Research Center at the University of Michigan and director of its Economic Behavior Program from 1946 to 1972. Katona’s work focused mainly on macroeconomic topics, such as the role of consumer sentiment in determining the level of consumption spending. In affluent economies, demand depends not merely on the ability to spend but also on the willingness to do, since much spending is discretionary in nature and consumer durables are often replaced long before they are worn out or beyond economic repair (see further Katona, 1960, 1975).

Any account of the emergence of behavioural economics in the US should recognize not merely the ‘Michigan School’ led by Katona but also what may be called the ‘Carnegie School’ after the work at Carnegie Institute of Technology, later Carnegie-Mellon University, by Herbert Simon, Richard Cyert and James March in the 1950s and 1960s, which resulted in Simon being awarded the 1978 Bank of Sweden Prizes in Economics in Memory of Alfred Nobel. Their focus was mainly on how inputs from psychology could be used, in conjunction with simulation techniques from computing science, to understand the behaviour of organizations in complex environments (see Cyert and March, 1963, and the papers collected in Simon 1982/1997). It challenged the core assumption of neoclassical economics that decision-making involves optimization and instead focused on how simple decision rules could bring complex situations within the workable grasp of mere mortals with rather limited information processing capabilities. This kind of thinking had a major impact on how consumer decision-making was seen in marketing (particularly via the work of Bettman, 1979) but economists have remained largely oblivious of its effect there, since few of them habitually read the

Journal of Consumer Research, where many of the key extensions appeared (see also the anthology edited by Earl, 2001a).

Until relatively recently, the Carnegie-inspired work on consumer behaviour has also had rather little cross-fertilisation with work in Europe by economic psychologists (Earl and Kemp, eds, 1999, was in part an attempt to bring the two bodies of literature together). Affiliated elsewhere but strongly influenced by the Carnegie School were Richard Nelson and Sidney Winter (1982), who examined the roles of simplifying decision rules in the process of economic growth and the evolution of industries. Some of Winter's earliest work (Winter, 1964) on the behaviour of firms is an important precursor to modern research on 'fast and frugal' methods of decision making: he sought to show that if the environment were continually in a state of flux, firms which adapted quickly to their environments using simple decision rules could drive out of business firms that were more careful about trying to gather information and then work out an optimal (but belated) response. One of the most influential American behavioural economists, Harvey Leibenstein shared many of the Carnegie School's perspectives (see Leibenstein, 1976, p. 4) but worked independently from them. His view that real-world decision-making processes often result in businesses operating well inside their potential, a situation which he called X-inefficiency, has had a major impact on policy making. Later in this paper, I extend his perspective to the realm of consumer behaviour.

One final branch of behavioural economics, that is tending to be overlooked by revisionist US writings on the rise of behavioural economics, is what I termed, in the introduction to Earl (ed.) (1988), as the 'Stirling School'. This eclectic approach, which began at the University of Stirling in Scotland in the 1970s, brings together elements from all the other schools of behavioural economics as well as linking up with Austrian and evolutionary approaches, focusing on a 'growth of knowledge'/'problem solving' view of behaviour. It is particularly concerned with the evolution of decision rules, the similarities between problems faced by scientists and by people in everyday economic life, and the way in which the mental or organizational structures that people create for coping with life differ in their resilience in a world of environmental turbulence. The elder statesman of this group of scholars is Stirling's Brian Loasby (1976a, 1999), whose influence has extended via Earl (1983, 1984, 1986) to New Zealanders (now expatriates) David Harper (1994, 1996) and Jason Potts (2000).

3 IN WHAT SENSE IS IT *BEHAVIOURAL ECONOMICS*?

As is implied in the previous section's account of the emergence of the literature of behavioural economics, the various approaches have in common the rule that the quality of economic theorizing may be improved if theories are based on knowledge of how people actually take decisions, rather than being based upon axioms chosen for their analytical convenience. A wide variety of sources of such knowledge have been employed by behavioural economists, including:

- *Research findings from other disciplines in the social and behavioural sciences.* For example, from cognitive psychology we know that human decision makers normally can only process about ten bits of information per second (Marschak,

- 1968). Virtuoso musicians and typists may appear to be able to cope with information inputs at a far faster rate but are able to do so mainly by recognizing bundles of information as familiar patterns (chords or words). It is also known that we can only keep in mind Miller's (1956) 'magic number 7+2' things at a time.
- *Laboratory experiments on economic behaviour.* Much of this work, which is popular with the US behavioural economists, merely involves binary betting experiments. However, sometimes it involves 'stimulus/response' studies inspired by 'behaviourist' psychology (see Foxall, ed, 2003).
 - *Protocol analysis.* Newell and Simon (1972) pioneered this method, which entails reports being made to the researcher by subjects whilst they are in the process of taking a decision or solving a problem. After analysing data obtained in this way, Newell and Simon were able to construct computer programmes that would simulate subjects' problem-solving methods. Ericsson and Simon (1993) is the standard source on how to obtain and employ 'think-aloud protocols' from subjects who have been asked, for example, to describe their thought processes as they shop in a supermarket or participate in an experimental economics exercise in a computer laboratory.
 - *Deconstruction of decision-making examples from text sources.* This method draws upon examples of choices from consumer magazines, literature and autobiographies, as well as from business and government archives. It is explored in Earl and Wakeley (2005).
 - *Ethnographic studies, questionnaires and interviews.* This category includes the pioneering work of the Oxford Economists' Research Group, but there is also considerable potential for economists to act rather like a social anthropologist and mingle extensively with decision makers, as in the work of Abolafia (1996) on the Wall Street stock, bond and futures markets, or studies of shopping mall behaviour by Underhill (2004). Amongst economic psychologists, there has also been considerable research on 'lay economic beliefs' (for a review, see Routh, 1999).
 - *Introspection by economists about their own behaviour.* This approach was developed in marketing by Holbrook (1995) and Gould (1995) and has been used in Earl's (1986, pp. 176-7; 2001b) analyses of, respectively, house buying processes and the demand for live music in the age of home theatre systems and VCRs/DVD players. The idea here is not that one uses personal experience as a means of constructing theories that one then claims to be *a priori* true, but rather that introspection provides a basis for questioning existing analysis and for constructing theories that may then be systematically tested.
 - *Psychologists' theories about determinants of behaviour and the associated empirical research literature.* Examples here include the use of cognitive dissonance theory by Akerlof and Dickens (1982) and other authors reviewed in Earl and Wicklund (1999), or insights gleaned from a variety of theories of personality, such as Albanese (2002) (psychoanalytic/object relations theory), Earl (1983, 1984, 1986) (personal construct theory) and Lutz and Lux (1979) (Maslow's (1954) hierarchy of needs theory).

4 KEY ELEMENTS IN THE BEHAVIOURAL PERSPECTIVE

Clearly, the behavioural approach is profoundly different in method from the traditional way of doing economics that involves a focus on using econometric methods to test highly simplified theories that have been put together by arm-chair introspection that focuses on the kinds of stories one might tell about economic behaviour in terms of favoured mathematical methods. Behavioural economists are not opposed to formalizing and econometrically testing their theories, but they prefer to let what is known about behaviour drive their choice of techniques rather than letting a prior choice of technique shape the kinds of questions they can address. Just as the ‘do’ and ‘don’t’ rules of the behavioural research programme differ from traditional economics, so, too, does the set of ‘hard-core’ theoretical ideas that its practitioners have come to use and which I will now outline (see also Earl, 2005).

1. *Opportunity costs and constraints are personally constructed.* Action depends on how decision-makers perceive their situations: as Latsis (1972) argues, it is not ‘situationally determined’ and may be affected by how cognitive dissonance is resolved. Individuals may see a ‘given’ situation quite differently and construct quite different arguments about its pros and cons.
2. *Decision making is normally characterised by **bounded rationality**.* As Simon (1982/1997) emphasized, people try to avoid making bad decisions but face cognitive barriers to formulating and solving complex problems characterized by uncertainty and/or information overload. (Note the paradox here: choice can be difficult because we simultaneously suffer from too little information of some kinds and too much information of other kinds.)
3. *Choice is a **satisficing** activity that attempts to meet aspiration levels, but **aspiration levels** tend eventually to adjust into line with what seems feasible.* Whilst growing numbers of mainstream economists have accepted the notion of bounded rationality, they have tended to do so in terms of their standard optimising framework, for example, by modelling agents as though they keep searching until the marginal benefits to search equate the marginal costs of searching (though how can they know what they are likely to discover?), or trading off the benefits of obtaining more information against the risks of being more likely to make mistakes in processing it. Behavioural economists, by contrast, reject optimisation on the basis that if there is uncertainty and a need to allocate attention and gather information to deal with problems that may or may not have arisen or be about to arise, then one runs into an infinite regress (Elster, 1984, p. 135; Berger, 1989): for example, how does one search for the best search rule, or work out how to attend to the question of what one should be attending to right now? Simple thresholds cut-offs that determine whether a problem is judged to exist, or whether one starts to pay attention to something, provide stopping rules to avoid the infinite regress problem. (A useful analogy here is that of fire-fighting behaviour: life is too complicated and too high-pressure to permit the construction of fire-proof systems, so instead one tackles fires that do break out

once they seem to have crossed thresholds of danger; if a number of fires are burning at once, we may use a priority system — what Cyert and March, 1963, call sequential attention to goals — to decide which ones to fight first.)

Such cut-offs make good sense in philosophical terms and in practice people seem cope with the pressures of life by limiting their attention only to those areas where they are at any moment failing to meet what they have judged to be reasonable goals to have set. (Notes that what one person sees as a reasonable goal may be quite different from what another person aims for in the same situation.) If it is the things that cross our cognitive thresholds that grab our attention, then we should not be surprised to find that shopping malls and in-stores displays are designed to divert us from what we are trying to focus on doing, or that advertisements have to shout as loud as they do to stand out in the midst of other attempts to divert us in different directions (see further Earl and Potts, 2000).

4. *Choice can be based on reasoning in terms of decision rules, and on emotions, but choices that involve reasoning are impossible without an emotional anchor.* The anchoring for choice that emotions provide is another aspect of how humans deal with the infinite regress problem that would otherwise paralyse us into indecision and which has indeed been found to paralyse people who have suffered particular kinds of brain damage (Damasio, 1994). For example, having a non-negotiable view of one's identity provides a set of boundaries for rules about how one might behave: without it, one has no basis for choosing amongst possible rules for choosing; with it, one can choose possible decision rules on the basis of what they would imply for the question of self-identity. Recognition of these non-negotiable parts of our lives — where 'I believe it/do it because I do, period' — is about as close as a behaviour economist gets to the idea in traditional economics that choices are a reflection of 'given' sets of preferences.
5. *The forms that decision rules take may vary considerably depending on how decision makers see the context of choice.* Whereas traditional economics offers a 'one size fits all' approach to choice, the behavioural economist is open to the possibility that in some situations choices may be made using highly simplified decision rules, whereas in other situations people may go through a process of extended problem solving. The latter is often characterized as a 'decision cycle' involving six stages:
 - (i) *Problem recognition.* (This will be determined by the size of one's aspirations, as well as the level of one's current attainments.)
 - (ii) *Search for possible solutions.* (This will require choices about how to search, for example by using a particular trade magazine or seeking advice from someone — and a means of avoiding infinite regress.)
 - (iii) *Evaluation of alternatives.* (With certain kinds of products, much uncertainty will remain.)
 - (iv) *Choice.* (This is the only stage that traditional theory covers.)

- (v) *Implementation.* (In practice, the preferred option may turn out not to be possible — in which case, the consumer needs to have a rule for a fall-back position or to return to stage (i).)
- (vi) *Hindsight review.* (Did the action solve the problem/did it create a new problems?)

The first three stages in the decision cycle can be seen as involving the assembly of a matrix of information about possible choices and their imagined implications in terms of characteristics, while the fourth involves testing to see if at least one possibility is satisfactory and, if more than one possibility passes this test, to break a tie between those that do.

Decision rules may involve different ways of scanning/processing information in a choice matrix. An individual consumer may use different types of rules in different situations, while in any given situation different consumers may be using different decision rules. Some may compute overall scores based on performances across a limited (7±2) set of characteristics and are prepared to accept any product that has a high enough overall score. This is essentially a satisficing version of traditional thinking about choice: a poor performance in one dimension could be offset by a superior performance in another. Others may use rules that do not involve adding up procedures and work more like an intolerant filtering process: the consumer may initially try to apply a checklist and if any product has all the required features in adequate amounts, then it is deemed acceptable, whilst if none survive this test the consumer may bring into play a subsidiary priority rule, subjecting all the contenders to the same initial test and only allowing on to the next test those that are good enough to pass the first test, and so on. With this kind of rule, a single failing in a high priority area may be fatal, regardless of how well the product performs in other areas. Such a rule may initially seem irrational but it is cognitively much simpler to operate and may still result in the consumer being able to find products that meet all, or many, of their priorities, so long as their aspirations are not out of line with typical performance standards in the product area in question. Sometimes, as when buying a house, decision makers may begin the process of choice by using an intolerant checklist to define a manageable 'short list', which they then appraise in detail in terms of a more tolerant, adding-up procedure. Many other hybrid intolerant/trade-off combinations may be observed — such as to choose the product with the longest list of peripheral features provided it seems to offer good enough performance in all the core areas.

From the behavioural standpoint, the use of checklists and priority ranking procedures by buyers provides significant clues towards understanding processes of non-price competition in international trade and the likely effectiveness of exchange rate adjustments as means of correcting trade imbalances in the long run. If firms in high-wage economies are having trouble making good goods, a mainstream economist might suggest they retreat down-market. Such a strategy's long-run prospects are limited if firms in newly industrializing nations are raising their standards as well as enjoying low-wage cost advantages (see further Earl, 1986, chapter 10).

Much simpler decision rules may provide perfectly viable ways of reaching a decision, such as (i) Choose the product with the best performance in a particular, single dimension; (ii) Choose the *top-selling* product in the category (though of course we might note that a million lemmings *can* be wrong!); or (iii) Choose the *underdog* brand on the basis that they must be trying harder and could therefore be under-rated (cf. Avis versus Hertz in the rental car market).

6. *Decision makers learn in the sense of changing how they look at the world, but their ways of looking at the world may limit their ability to change how they see things* (Kelly, 1955; Loasby 1983). Psychologists themselves have a variety of ways of looking at learning processes, such as in terms of conditioning via reward or punishment, or in terms of systems of rules (contrast Foxall, 1997, and Brenner, 1999). Just how important it may be for world-views to change if effective economic policy making is to be conducted may be illustrated by the contrast between attitudes to drinking recycled water in the UK and Australia. In London, it is seen as normal and safe to drink recycled water, whereas in Sydney water supply problems are greatly compounded by the fears that consumers have about what they see as ‘drinking sewage’, a point of view which seems also to pervade the minds of politicians and water utility managers.
7. *Agency has an inherently social nature.* This greatly expands the ability of a group so long as members are sufficiently different and sufficiently similar in appropriate dimensions (such as capabilities and perceptions about what ought to be done). However, it can also have dysfunctional aspects. For example, if people construct their identities and self-images by comparing and contrasting themselves with others, then the result is likely to be a competitive spiral of choices aimed at defending such constructions of social status. Duesenberry (1949) explored this in his classic contribution to the theory of the consumption function, a work that drew on the social psychology of its time. Nowadays, it is widely accepted within behavioural economics that wellbeing is more a function of relative rather than absolute levels of consumption (as well as of perceptions of how far one is in control of one’s life and of one’s way of looking at the world).
8. *It is not uncommon for consumer or workplace behaviour to be to some degree pathological in nature.* The need for regulatory policies is much more obvious if one sees some consumers as prone to addictive or impulsive behaviour and hence in need of protection from themselves as well as from businesses seeking to exploit their weaknesses.
9. *Perceptions and judgments under uncertainty are commonly shaped by heuristics and biases, that conflict with mainstream analysis and competent use of statistical techniques.* This is the major theme in the recent US-dominated work, but these heuristics and biases have been known about in psychology and management for quite a while (classic sources are Nisbett and Ross, 1980, Hogarth, 1980, and Kahneman *et al.*, eds, 1982) and Thaler’s influential (1980) paper (reprinted in Earl, ed., 1988, volume II) also appeared a quarter of a century ago. The coverage

here lists them under headings based around the decision cycle notion, following the approach taken in a very useful survey article by Hogarth and Makridakis (1981, reprinted in Earl, ed., 1988, volume I); for an even more comprehensive and more recent survey, see Conlisk (2001) and for popularising applications see Thaler (1992) and Belsky and Gilovich (1999).

Heuristics and biases in acquiring information

- Availability bias — judgments is affected by the ease of recall of examples/frequency with which events are publicized rather than being proportionate to frequency of occurrence.
- Selective perception — people tend to see what they expect to see, downplay counter-examples and seek verification for their expectations rather than looking for anomalies.
- Concrete information dominates over abstract, statistical information.
- The use of frequency, not relative frequency, to judge the strength of predictive relationships.
- Illusory correlation — people often select inappropriate variables as supposed causes of particular phenomena.
- The focus of decision makers depends on how data are presented — for example, quantitative data may inhibit concentration on qualitative data, or vice versa; which items of information are absorbed may depend on their places in a sequence of pieces of information, while seemingly logical displays of data may distract people from crucial data that are missing, and so on.
- Framing effects — for example, how inclined a person is to search to save money on a product may depend on the proportionate saving that he or she thinks it might be possible to achieve, rather than the absolute amount, even though a one percent saving on, say, a \$10,000 car is more than a 10 per cent saving on a \$500 in-car entertainment system.

Heuristics and biases in processing information

- Tendencies to treat small probabilities as zero probabilities and large probabilities as certainties, or to avoid thinking in terms of a range of possible outcomes and instead focus only a single ‘best guess’.
- Poor understanding of compound probabilities.
- Tendencies to fail to use a consistent judgmental strategy over repeated cases.
- Law of *small* numbers — giving too much weight to small sample results.
- Tendencies to discount the future hyperbolically, not exponentially, which can make people prone problems of addiction.
- Superficial evaluation in the face of complexity/emotional stress, resulting in impulsive choices.
- Social pressures tend to cause judgments to be distorted in favour of the majority view, however ill-founded it might be (as in the story of The Emperor’s New Clothes).

Heuristics and biases in choice

- Sunk cost bias — as where a person consumes something (say, the facilities of a fitness club) because they have already spent money enabling them to do so; their continued consumption of it is a way of making their expenditure seem justified, even though, if they could ‘turn the clock back’, they would not consume it even if it were available without any charge.
- Endowment effect — how much a person will require to give up something they already have tends to be more than what they would have been willing to pay to acquire it in the first place.
- Illusion of control — the very act of making a choice can make people feel less worried about uncertainties that they earlier perceived.
- Wishful thinking — to make a choice seem appropriate when it is being taken for reasons that they are reluctant or unable to admit to themselves or others, people tend to inflate their estimates of its payoffs in other dimensions.
- Those who are aware of their fallibility as decision makers tend to pursue self-control strategies to prevent themselves from being led into temptation, even though they know that these strategies promise them less than they would be able to achieve if they chose alternative strategies that depended on them being able to control themselves. (For example, some consumers voluntarily open Christmas Club Savings Accounts that offer miserly rates of interest but have the advantage of being impossible to access for withdrawals until Christmas approaches.)

Post-choice heuristics and biases

- ‘Gambler’s fallacy’ — after observing a run of one kind of outcome, people begin to assume odds of its rival happening are increasing. Attribution bias — people tend to see success as due to their own skill, but failure as due to ‘bad luck’.
- Mental recall problems, that cause erroneous reconstructions of what happened and affect subsequent choices.
- Hindsight bias — people tend to be able to find plausible explanations for things that in prospect would have been surprising to them.

In short, from the behavioural standpoint, choice is an unfolding *process of coping* with the complexities of everyday life in a changing world, *not the selection of an optimal set* of activities at a point in time.

5 X-INEFFICIENCY IN CONSUMPTION

From the standpoint of behavioural theories of the firm, the policies of market deregulation pursued in New Zealand over the past two decades or so make sense, broadly speaking, as means of raising business productivity: increased competitive pressure is likely to have forced firms to raise their aspirations in terms of product/productivity standards, leading them to engage in problem solving activities and develop their capabilities. In terms of Leibenstein’s (1966, 1976) work, policies of

deregulation are likely to have reduced X-inefficiency, shifting cost curves downwards, as well as reducing allocative inefficiency by limiting opportunities for capturing consumer surplus through monopolistic pricing. This, however, is rather a one-eyed view, as competitive pressure comes not just from rival firms but also from consumers who demand better deals and are willing to shop around until they find them. Recognition of this implies scope for bringing behavioural perspectives on choice together as a consumer theory analogue to Leibenstein's work on X-inefficiency in the context of the theory of the firm. This is what I attempt to do in this section. The basic proposition here is very straightforward: whereas X-inefficient firms achieve lower productivity than they might have been able to achieve, X-inefficient consumers pay more to meet their goals, or to obtain particular bundles of consumption characteristics, than they needed to do, or they fail to meet goals they could have achieved had they used their resources differently. In both cases, the extent of X-inefficiency may be affected by competitive pressures and by the regulatory context in which decisions are taken.

Leibenstein (1976, p. 45) argues that X-inefficiency in production has four main causes:

- (i) The production function is imperfectly known.
- (ii) Employment contracts are imperfectly specified, allowing workers discretion in the amount and quality of the work they provide.
- (iii) The market for factors of production is imperfect, particularly that for managerial knowledge. Hence managers who might be best suited for reorganizing production methods and motivating workers in a particular context may be working in other contexts that fit their capabilities less well.
- (iv) In the face of uncertainty and competitive interdependence, firms tend to imitate each other, cooperating tacitly rather than competing aggressively and thereby pushing each other to search for better ways of doing things.

In the context of consumer behaviour, unexploited opportunities for improving wellbeing may exist for an analogous set of reasons:

- (i) *Consumers have limited knowledge about the set of consumption possibilities and about how goods may be combined to best effect as elements in their household production systems.*

To obtain relevant knowledge, consumers need either to be able to pick it up passively and retain it during the course of everyday life, for example via social interaction, the media or from advertisements, or they need actively to seek it as a means of solving particular consumption problems. Though the Internet offers many sites that can help consumers resolve puzzles about what to buy and where to buy it, the severity of the knowledge problem faced by boundedly rational consumers still needs to be emphasized, since:

- The range of products on offer at any time is enormous: a typical supermarket illustrates the problem by offering upwards of 10,000 product lines (if one has the opportunity, is it more efficient to shop at Aldi, a German-based chain, which only

carries about 700 lines?), but even this seems restricted compared with the millions of book titles and other products that one can source via Amazon.com.

- The set of available products is constantly changing due to technological change and the rise and fall of firms operating as suppliers in any particular market. As Lancaster (1966b) reminds us, new products do not necessitate forming new preferences if preferences are for characteristics offered by goods and new products essentially offer new combinations of characteristics, i.e. new ways of meeting established goals or solving familiar kinds of problems. However, the new goods must first be discovered and their characteristics identified. Thus, for example, a home theatre system may be a new way of dealing with the problem of how to reconcile watching movies and bringing up young children: instead of paying for baby-sitting whilst out at a cinema, one can internalise both the child supervision and the movie viewing facilities, gaining flexibility at the cost of making a major fixed investment and some delay in access to latest movies. The trouble is, there are many possibilities for a home theatre system — different wall-projection technologies, projector televisions, or large-screen plasma or LCD products — of uncertain reliability and with differences in picture quality and likelihood of falling in price.
- Today's consumers are dealing with goods that are far more complex than they were when economics began: products are often multi-function devices based upon multiple technologies, so the appreciation of which high-level characteristics they deliver or which wants and needs they serve may require considerable expertise. Their effective use, too, requires skills: perhaps nothing symbolizes this better than the blinking, unset clock on many people's VCRs. Much of what we know about what our possessions have to offer comes after we have purchased them and many features we may simply never discover or use due to a failure to allocate enough time to read all the instructions or inability to commit them to memory. Features that manufacturers build into their products in attempting to offer superior 'surprise and delight' may not be noticed or be 'too clever by half'.
- Whereas mainstream consumer theory emphasizes substitution between products, the behavioural approach emphasizes the complementarity between products, the full exploitation of which requires knowledge of how they interact as systems within the higher-level system that is the consumer's lifestyle (Earl, 1986). For example, cars may differ in their suitability for towing boats, shopping at IKEA, their fit with our garages (not just in terms of length, but also height if we are choosing an SUV, or width if some have long doors) or the images we are trying to present, and so on. Similarly, choosing clothing offers major potential for strategic choices of items that will enable new outfits to be created in combination with items of clothing we already have, but it also offer major potential for showing our lack of sense of style.
- To obtain knowledge efficiently, one needs to know what questions are worth asking when shopping. Unfortunately, in many markets, consumers are active very infrequently so their knowledge is harder to update than where they purchase items often and can see trends at work from which they can derive a sense of the questions they need to ask to update their knowledge incrementally.
- Some kinds of infrequently consumed products need to be purchased at short notice, which limits scope for gathering information about rival suppliers' offerings. Obvious examples here are services of plumbers if one has a burst pipe or blocked drains,

funeral services, or tourism products purchased by consumers who are staying only a limited time at a particular tourism centre. However, many purchases made by people who have just relocated to a new country and are trying to get established domestically in the midst of starting new jobs will be made under the same time pressures.

- The durable nature of many consumer products complicates the task of knowing which ones to buy. This is not merely because it leaves scope for choosing the timing of replacements in the light of guesses about the pace of technological change and lower prices that may be available if consumers opt to delay upgrading and continue to use existing products. It also introduces the need for knowledge about likely repair and depreciation costs, which may differ substantially between rival brands.

(ii) *The terms under which consumers purchase goods and service involve incomplete specifications of what is to be delivered, which leaves scope for opportunistic behaviour by suppliers who may choose to act deviously and exploit to their advantage what has actually been spelt out in the deal.*

Quite apart from the problem of gathering and retaining information, consumers in the real world of bounded rationality may be unable to spell out precisely what they expect from supplier (this is an example of the ‘tacit knowledge’ problem raised by Polanyi, 1962, 1967, and discussed by Nelson and Winter, 1982) or unable to verify what they actually received. There may be good reasons for leaving specifications rather vague: contracts with lots of fine print are costly to draw up, time-consuming to evaluate, leave less scope for changing what is supplied to match unexpected contingencies that arise after the deal has been done (Loasby, 1976b) and, besides, the supplier may be suffering from the tacit knowledge problem, too, despite greater experience in the area. However, contractual vagueness combined with a situation of asymmetric information (or, in the terms of Williamson, 1985, ‘information impactedness’) puts the consumer at risk of exploitation. This risk is increased if the consumer does not engage in due diligence because, despite the incompleteness of the contract, there is enough fine print to make it seem overwhelming. (For example, how many jet-lagged consumers really do read the fine print of their rental car contracts before signing, especially when they have a queue behind them?)

The issue of what information the consumer has about what is being supplied needs to be seen in relation to the consumer’s knowledge of the significance of what is being said and unsaid in the contract. Consider car safety, for example. This is an area where it is intrinsically hard to spell out the extent of protection a vehicle affords, as this depends on its ability to avoid accidents, reduce the speed of impact and mitigate the consequences of impact. If consumers cannot see the underlying structure of a car, they may take lists of safety features as proxies for safety. Some features (for example, ‘side airbags are fitted as standard’) may be cheap to incorporate in re-skinned, modern-looking products that do not embody state-of-the-art structural engineering and may give the illusion that the product is more than a match for newer designs with superior structural integrity.

(iii) *Consumers’ decision making capabilities in general fall well short of what is required for optimal choices but in any case are by no means guaranteed to match*

the problem solving tasks that their positions of income and wealth present.

This is a key theme to emerge from the behavioural literature surveyed earlier in this paper, but it is important to be aware of differences of emphasis and focus within different groups of behavioural economists in respect of it. Much of the recent US-dominated literature focuses on widespread human tendencies to make errors, such as a general susceptibility to engage in ‘framing’ or a failure to treat sunk costs as sunk. The literature includes easy-to-read self-help books that may play a useful role in reducing consumption X-inefficiency (for example, Belsky and Gilovich, 1999, Gigerenzer, 1999). However, it rather tends to distract attention from the capacity of many decision makers to develop ‘fast and frugal’ decision heuristics (Gigerenzer *et al.*, 2002) for coping with the kinds of knowledge problems we have been considering. Hence behavioural economists such as myself, who work from an evolutionary standpoint, tend to prefer to focus more on the match between specific decision heuristics that people use and their contexts of application.

Suppose, for example, we are looking at the welfare of households in poverty. Some may have trouble meeting basic needs because they use decision rules that lead them to find it difficult to obtain or keep a job, or make them prone to fritter away much of their income on addictive products. Others may be short of income because they made a bad choice of partner and have been left as single parents. The latter may be caught in a poverty trap with costs of childcare and transport, and income tax, making it impossible to raise their purchasing power by working or investing in their human capital via education. Yet, within their limited means, the latter may be shrewd jugglers of resources, skilled at getting by on what little they have. The former suffer from consumer X-inefficiency: they would make poor use of additional welfare handouts and need to be trained to be better decision makers — put in more psychological terms, they need therapy to overcome their pathological tendencies — if they are to improve their well-being in the long term. The latter, by contrast, would thrive if given a way of breaking out of the poverty trap.

Different kinds of decision-making competence issues arise further up the income and wealth ladder, including other kinds of consumption pathologies (such as Imelda Marcos-like tendencies to accumulate dozens of designer-brand shoes). Whereas mainstream consumer theory assumes complete preference orderings, reality may be that when we are promoted into a bigger feasible consumption space we have rather limited ideas about what we are getting into and what we should expect to be able to achieve. If armed with decision rules developed for coping in ‘down-market’ segments, the consumer may be prone to make sub-optimal choice on ‘arriving’ in a more affluent part of society. Several problems may be noted here:

- Such consumers are likely to be easily impressed by products that are so much better than what they are used to even if the ones they have so far seen are by no means the best of what is available within their new budget range. Search may thus stop too soon because aspiration levels have not yet risen enough.
- Consumers may lack capacity for choosing status symbols that demonstrate they have cracked the social codes of entry into the group that they seek to join. We might call this the ‘nouveau riche problem’, where consumers show they have ‘made it’ by spending on large houses and cars, ostentatious jewellery, gold bath

- taps, etc. All of this may show a lack of appreciation of style and quality and a failure to realize that understated consumption, where ‘less is more’, can show both one’s wealth and one’s good taste (see Parsons, 1967).
- If the rich are too busy making money to have time to shop, they are likely to fall prey to established ‘designer brands’ that achieve brand equity through bandwagon effects and snobbery rather than by offering correspondingly higher value for money.
 - Newly elevated consumers may be prone to buy products with specifications vastly in excess of what they actually require for meeting their goals, because they copy the choices of others in their new social reference groups. The latter may have done exactly the same in the past, with very few consumers actually possessing the insight or capabilities to extract from their choices the value inherent in them. Such choices represent a cause for concern in terms of overall welfare, for three reasons: they may generate envy on the part of those who know how to enjoy such products more fully in functional terms but do not have the money to purchase them; financial risks may have been incurred to obtain them; and higher environmental costs may be associated with their production and use.

These social considerations take us straight to the consumer X-inefficiency analogue of Leibenstein’s fourth source of X-inefficiency on the production side.

(iv) In the face of uncertainty, consumers tend to copy each other’s behaviour and follow conventions, and ostracize those who use their superior knowledge as a tool of aggressive social competition.

Social interaction plays a major role in reducing consumption X-inefficiency as it enables consumers to specialize in the areas in which they acquire expertise and then trade that expertise with each other by processes of social barter (Earl and Potts, 2004). However, as with social interaction between lemmings, borrowing decision rules from others can sometimes be costly. The development of well-functioning decision rules is likely to be enhanced by diversity in the rules that are socially popular at any time, but processes of social competition work against this. Those whose choices flout conventions (cf. Choi, 1993) will be called upon to justify their deviant behaviour since it poses a challenge to the norm. Hence would-be deviants may opt for the quiet life of conformity rather than looking for a better way or following it should they discover it. (This is especially likely in a market such as that for cars, where a deviant choice carries the cost not merely of social inquisition but also much more rapid depreciation.) Whilst deviant actions may be problematic enough in some social circles even if undertaken quietly and based on sound knowledge, it definitely is not the ‘done thing’ to go about professing one’s superior knowledge actively. Unless conducted with great tactfulness, such behaviour is likely to result in charges that one is a ‘know-it-all’, an epithet that normally carries pejorative connotations.

Consumers who have ‘done their homework’ may thus face a dilemma when moving in, or into, social circles where there is considerable consumption X-inefficiency: buying the best value product (for example, a Skoda Octavia is essentially the same product under the skin as a much higher-status Audi A3) may be seen as a social faux pas. If most consumers were well informed about what they were buying, it is doubtful

that a firm such as the Volkswagen-Audi Group could continue to engage in price discrimination by offering brands of differently perceived levels of status for correspondingly different prices.

The social transmission of decision rules amongst consumers has potential to be problematic even where there is receptivity to rules promulgated by experts. Just as information can be degraded on transmission between people, or messages get completely distorted as they are passed from person to person in the playground game 'Chinese whispers', so, in a 'decision rule cascade' (Earl, Peng and Potts, 2005), complex rules are likely to suffer loss of definition as they are passed between boundedly rational consumers. This phenomenon is redolent of technology transfer problems associated with tacit knowledge gaps between firms and their subsidiaries or licensees, that result in the latter not being able to match the productivity of the former (cf. Nelson and Winter, 1982, p. 119).

6 REGULATION AND THE PROMOTION OF EFFICIENT CONSUMER CHOICE

Before we consider ways of using regulatory policy to try to ensure consumers get better value from the money they spend, it is important to recognize that just as firms may pay for the services of management consultants to try to reduce X-inefficiency, so consumers who are alert to the scale of the task they face when making a complex choice and who are open to their own fallibility may provide a ready market for suppliers of advice on what to buy to solve a particular problem and where to buy it most cheaply (or even negotiate on their behalf, as with car brokers). Such consumers still have a problem, that of knowing which advice to purchase and/or take seriously. The need to be a canny shopper is also reduced by the presence of market institutions such as trade associations that set and police standards of conduct on behalf of their members. More generally, we might say that the more demanding is the population at large, then the smaller the risk that a minority of naïve or lazy shoppers will end up doing needlessly poorly when they shop. Consumer X-inefficiency is also likely to be less the more that members of a country's population are able to travel widely and see what people in other cultures are able to obtain by being more diligent and assertive as shoppers. Demands for better value via such demonstration effects may be manifest not merely when shopping but also via the ballot box, with consumers voting for politician who promise to open up their economies to the winds of global competition. (According to Colin James, 1996, the acceptability of deregulatory policies in New Zealand was partly a consequence of cheap air travel, which allowed increasing numbers of its population to see the larger range of choice and better value for money enjoyed by their counterparts in less protected economies)

A useful starting point for analysing the need to regulate consumer markets is the classification of products into three categories: search goods, experience goods and credence goods (Nelson, 1970). From the standpoint of mainstream economics, search goods do not present a problem in need of a regulatory solution, for these are products where, in principle, characteristics of rival brands can be discovered prior to purchase. From the behavioural standpoint, however, regulatory policy can reduce risks that

consumers will make errors due to inefficient search and problems in evaluating information. Requiring automakers to publish star-rating standards for their cars' performances in independent crash-testing programmes greatly simplifies the consumer's task of finding out about safety. Likewise, having local content requirements in music broadcasting is a way of ensuring that consumers in small economies are exposed to local artists whose work they might not otherwise have discovered in record stores after being bombarded by the music of heavily promoted international stars. We might also note that it may be inadequate merely to require firms to list ingredients on food and cosmetics products, given the difficulties consumers have in remembering what may be hazardous even if they are aware they may need to be careful about certain ingredients. (For example, how dangerous is it to buy shampoo containing sodium laurel sulphate?)

Mainstream economists may also be rather sceptical of the need for regulation in the case of experience goods, defined as those goods whose characteristics buyers can only discover, at least in part, after purchase. Suppliers have an incentive to mitigate quality uncertainty problems by offering warranties or by presenting hostages (such as investments in international brands that could be ruined by individual incidents involving bad publicity: see Klein and Leffler, 1981) and because they run the risk that disgruntled buyers will vent their bitter experiences on the Internet, as with eBay and Amazon.com satisfaction ratings. From the behavioural standpoint, however, we would note that getting redress requires assertiveness while lay consumers may not think in terms of the 'hostage' logic and scope for publicizing disappointing products may be limited. Some examples of problematic experience goods that could be candidates for regulation include:

- Local tourism services consumed by non-local tourists, such as taxis and guided tours (but not international brands of hotels or motel networks). Such consumers lack local knowledge and may find it difficult to voice their displeasure for reasons of language, or feel disinclined to do so because they intend never to visit the destination again.
- Products with an embarrassment factor, such as dating agencies.
- Phone services, where there may be changes of prices and services after the contract has been signed (Colton, 1993), and switching costs.

Credence goods are products whose consumption payoffs remain unclear to purchasers even after they have been consumed, such as dietary supplements, some kinds of car maintenance work, or some financial, medical and legal services. Some products that appear to be credence goods might be reducible to search goods if the regulatory authorities can expose the truth about whether they work or not, or at least can publicize what expert opinion says about them. With hard-core cases of credence goods, however, it may be intrinsically difficult for the consumer to judge whether a service has been performed, or if it has been performed in a way that has actually made the consumer's wellbeing different from what it otherwise would have been. If so, the market discipline mechanisms may fail: they cannot know whether to complain and/or warn others in their social networks about being under- or over-serviced.

In the absence of regulations and government monitoring, the quality of deals obtained by purchasers of credence goods may to some degree be assured via the

certification of suppliers by professional bodies that establish codes of conduct and may be able to audit members' behaviour. However, policing processes may fail if debarring of members would put the entire group under suspicion. In some cases, suppliers can try to eliminate principal-agent problems by specializing only in providing recommendations *or* in carrying out work that has been recommended by another agent. Otherwise, buyers at best must get by via using whatever rules they use to judge trustworthiness, such as how long the supplier has been in business.

A broader analysis of whether there is a need to regulate some markets sees the issue in terms of whether policy-makers need to protect consumers from their own lack of industriousness as shoppers, versus whether consumers need to be protected against the attempts of firms to engage in market manipulation. Waterson (2003) exemplifies the former view, whereas the latter is the subject of major papers by lawyers Hanson and Kysar (1999a, 1999b), who hypothesize that the tighter competition becomes between firms, the more they will find it necessary to try to manipulate consumer behaviour in order to win viable numbers of customers from rivals.

Waterson's recognition that economists have been over-estimating the canniness of consumers was triggered partly by his analysis of the limited extent to which consumers have responded to their increased ranges of choice following deregulation of markets such as those for public utilities. He had also noticed that the willingness of consumers to switch suppliers is a key determinant of profitability in financial services: in vehicle insurance, switching is frequent and profit margins are very low, whereas in banking switching is infrequent and profit margins are high. Partly this reflects differences in time and/or hassle costs of switching, while benefits of switching banks are unclear due to the long-term/relationship basis of the services they provide. Even so, the reluctance of bank customers to switch to get a better deal appears to imply very high rates of discounting of benefits of switching insofar as benefits are known.

The implication that the context of choice might affect the extent to which people are willing to shop around and switch suppliers is further evident in Waterson's paper when he discusses how competition has changed in markets for products such as condoms, whose purchase may be a rather furtive activity. The way that firms compete in the condom market has changed with changes in public attitudes that have occurred in tandem with a shift from 'over the counter' to 'self-service' retailing that allows price comparisons to be done by the consumer without the need to ask embarrassing questions of the retailer.

Like most of his fellow industrial economists, however, Waterson seems virtually oblivious of the behavioural economics literature on consumer choice. He comments that economists have not 'looked much into how or what advertising works on some consumers, or why consumers engage in more search for some goods than others' (Waterson, 2003, p. 146). (The implied very high rates of discount in many of his examples of inefficient consumer behaviour will come as no surprise to economists familiar with Ainslie's (1992) book *Picoeconomics*, which focuses on the common tendency to discount hyperbolically rather than exponentially.) Hanson and Kysar, by contrast, make extensive use of behavioural research in their attempt to demonstrate that firms can, and do, use insights from it to influence choices. Ploys include the following:

- Fear appeals.

- Diversion of attention from hazards of thrill-seeking products.
- Shaping perceptions of product safety.
- Misrepresenting the environmentally friendliness of products.
- One-sided use of ‘expert’ (but partial) opinion.
- Strategic use of framing effects (for example, presenting food products as 75 per cent fat-free, not as 25 per cent fat!).
- Exploitation of psychological thresholds (just noticeable differences).
- Misrepresenting products as ‘New’, ‘Special’, etc.
- Careful management of the ‘atmosphere’ of purchasing environment.

The analyses of Waterson and of Hanson and Kysar differ sharply in their policy implications. Waterson’s key conclusion is that if search costs are significant, policies aimed at increasing the number of suppliers may not be effective at pushing prices down towards costs. Instead, regulators should try to simplify search tasks by imposing standards of quality and making pricing transparent; or they may increase incentives to search by reducing switching costs. Likewise, if consumers are prone to suffer harmful consequences of choice because they are insufficiently diligent or cannot obtain adequate information, the policy role is to improve information availability/incentives for consumers to be diligent. However, if they are prey to attempts of firms systematically trying to shape their behaviour, then policymakers need to regulate practices of firms or give firms incentives not to misrepresent their products (such as full legal liability for firms to compensate consumers for harm suffered when using the products, even if this would discourage diligence on the part of consumers).

Policies implied by the behavioural literature to promote search by consumers include the following:

- Consumers might be legally required to seek multiple quotations before they can undertake certain kinds of transactions. Whether or not they had done so would be relatively easy to monitor using Internet-accessible electronic databases to which quotation numbers might be logged, with electronic bars on expediting orders unless the requisite number of quotations had been logged.
- Require that suppliers of ongoing services can only contract for finite periods before a fresh contract has to be offered (i.e. following the example of motor vehicle insurance, in contrast to current account banking services).
- Require suppliers to compare their products with best- and worst-practice performances of rival products in key areas in any promotion material.

Policies to promote consumption X-efficiency by reducing search costs could include:

- Provide websites at which customers can post their ratings/reviews of suppliers, and which offer summary scores (cf. eBay and Amazon.com), with audio versions available via phone numbers listed in the Yellow pages for the computer-shy.
- Provide accreditation/monitoring of licensed brokers.
- Require comparison-based advertisements.

Of course, from the market manipulation perspective, we should expect that firms would retaliate against policies aimed at reducing search costs by requiring information to be freely available. Waterson (2003, p. 148) is concerned about this, too, and predicts that firms may increase differentiation (offering a bewildering product range as a counter to the commoditization of the product), increase product complexity (e.g. putting more fine print in contracts), and increase switching costs. Policies to reduce switching costs may incite similar retaliation.

Policies may also be designed to reduce evaluation errors and promote pre-choice reflection, such as:

- Require ‘cooling off’ periods before customers are allowed to sign final purchase contracts (as opposed to periods within which they can pull out of contracts).
- Require that suppliers give ‘worked examples’ of costs of different plans that are being offered.
- Require ‘bottom line’ prices, to include all ‘fees and charges’.
- Provide precise (ideally brand-specific) risk information to preclude optimistic bias.
- Engage in shocking counter-advertising against manipulative corporate advertisements, rather than restricting them (for example, about the risk of running into debt; cf. Jolls, Sunstein and Thaler, 2000).
- Sponsor media coverage of work by behavioural economists, to generate awareness of the traps into which decision makers can unwittingly fall.

7 WHOSE WELFARE IS IMPROVED BY A REDUCTION IN X-INEFFICIENCY?

The fact that Leibenstein’s X-inefficiency ideas have not previously been extended to the realm of consumer behaviour reflects a long-standing tendency of economists to keep production and consumption in separate mental boxes. As long ago as 1958, Cairncross questioned this tendency and a few years later, around the time that Leibenstein (1966) first proposed the X-inefficiency concept, there indeed began to emerge a literature that viewed households in terms of production theory (for example, Becker, 1965; Lancaster, 1966a, Muth, 1966). The separation has persisted in welfare economics despite the problem that increases in productivity that result in falling prices and increased output do not necessarily imply increases in social wellbeing, for the extra output may have come at the cost of some workers having to work harder (Loasby, 1976b; Martin, 1978, p. 282) or under greater stress, or having to suffer dislocation costs as their employers downsized and forced them to find jobs elsewhere.

The involvement of many consumers in production outside of their households poses similar complications when we view X-inefficiency from the consumer’s side of the market: if people become more canny shoppers, they will impose bigger pressures on managers to find ways of reducing X-inefficiency in production, which may entail tougher work environments or dislocation costs. For such downsides to be avoided, all organizations must be able to react to tightened competitive conditions in parallel by ‘thinking smarter, not working harder’. If suppliers are not able to improve productivity,

then the only way they will be able to deal with more aggressive consumers and maintain their profit margins — aside from market manipulation ploys of the kind that concern Hanson and Kysar — is to engage in cross-subsidization by pushing up the prices they charge the more X-inefficient shoppers, such as those who do not bother to haggle with appliance retailers for discounts against marked prices.

Potential for reductions in consumer X-inefficiency to have adverse overall consequences for welfare are evident in Tim Hazledine's (1998, pp. 102-103) discussion of how market liberalization has affected New Zealand. He claims that prior to the liberalization process, it was uncommon for New Zealand's consumers to try to bargain with retailers. Hazledine reports being bemused when his friends encouraged him to do so, and to get extra leverage by buying all his new appliances from a single store, when he returned after years overseas and needed to equip his house. Clearly, the cross-subsidization issue might have major equity implications if the poor end up paying more because they have less buying clout and perhaps are less assertive and less skilled in bargaining. Hazledine also raises concerns about what the presence of aggressive bargaining does to the general efficiency of markets. For him, the world of bargaining looked like a retrograde step that made New Zealand's newly liberalized consumer markets look more like bazaars in poor countries. Quite apart from the effort, time and stress involved in haggling, its spread meant that 'list prices' signal increasingly little about relative 'real' exchange values. If prices were non-negotiable, boundedly rational consumers would have a clearer idea about the value for money offered by rival products because they could focus on non-price aspects. Firms would have a bigger incentive to charge similar prices to their rivals and differentiate themselves genuinely in terms of non-price features rather than spuriously in terms of unreal 'list prices'. We might also note that because of the cognitive limitations that consumers face, discounts for buying a bundle of goods probably also do not promote evaluations as careful as might be the case if each product were bought separately, especially if a trader 'throws in' an additional item for free to clinch a deal: as Hazledine (1998, p. 103) ruefully comments, '[B]y doing all my buying in one store in order to maximise my buying clout, I missed out on the range of products that were available if I had looked around. My "free" toaster, for example, works terribly — I'd have been better off paying proper money for a good toaster at a specialty store'. (Note here the possibility that even with his expertise in economics Hazledine has been caught as a consumer by something akin to a combination of sunk cost bias and the endowment effect: despite not having spent a particular amount of money on that 'terrible' "free" toaster, he seems not to have disposed of it and gone out to buy a better replacement.)

A final question to consider is what happens to wellbeing in societies where social competition increases and status-seeking consumers find themselves under greater pressure to obtain status symbols and display their skills in avoiding being fashion victims and in knowing where and how to get the best value for money. (As in, 'What? You didn't even try to find it on eBay?') To those concerned with environmental issues, there is something unsavoury about the sight of consumers 'spending money they haven't earned to buy things they don't want, to impress people they don't like' (these words are variously attributed to Ken Blanchard or Will Rogers at numerous Internet sites). On this view, people might feel better off if they learnt how to enjoy consuming less and worried less about their social status. An X-efficiency perspective offers a more positive slant.

Just as competitive pressure forces firms to try to innovate and develop ways of increasing their productivity, so market dynamics can also stimulating the development of consumer capabilities. Social competition may add stresses to life but it can also have beneficial consequences for personal development insofar as it puts pressure on consumers to experiment with new kinds of choices rather than letting their lives turn into a kind of ‘Groundhog Day’-style equilibrium in which they cease to develop as people.

8 CASE STUDY (I): HOME RENOVATION PRODUCTS AND SERVICES

As a more detailed example of the complexities of real world markets in which consumer X-inefficiency is likely to be significant, consider first the case of home renovation products and services. The context of choice here typically the following characteristics:

- A chain of experience goods/services.
- High stress/emotional involvement, that is not conducive to reflective decision-making.
- Misleading impressions of how easy the process may be for first-time renovators, given by ‘makeover’ TV programmes.
- Access to multiple capabilities is required but skilled trades-people are in short supply. This leads to high costs of getting a range of estimates and pressures to accept conditions.
- A house with an incomplete renovation project may be even less desirable than if would have been if the renovation had not been started (for example, once an existing bathroom has been ripped out, there is no going back, and no bathroom until the new one is finished).

Consumers face choices between do-it-yourself and outsourcing of some or all of the activities, and can seek to reduce transaction costs by outsourcing to firms that offer package-deal project management services.

Renovators may be aware of their own limited capabilities and hence prefer to avoid do-it-yourself, but have reason also to be nervous about the prospect of things going wrong if they get contractors in to do some or all of the work. From the standpoint of Williamson’s (1985) transaction cost analysis of internalisation and outsourcing choices, decision makers will be nervous about doing deals with contractors in situations of (a) complexity/bounded rationality, (b) opportunism, (c) small numbers of potential suppliers or customers, and (d) asset specificity. Although he suggests market contracts should work unless all four of these features are present, in the context of housing renovations the first three may be sufficient to cause problems. First, note that here complexity is likely to lead to contractual incompleteness due to: difficulty in articulating what is required/to be delivered; failure to foresee possible eventualities (such as the discovery of rotting timbers); and ambiguity about what has been delivered relative to what was specified. These are likely to result in opposing interpretations of ‘state of the world’ while work is being done. Scope for disputes might be reduced via the use of standard contracts, delegation to professional project managers (but can they be trusted?),

and if the authorities have building inspection requirements at various points in the course of a project.

Contractual incompleteness presents opportunities for contractors to engage in the guileful pursuit of self-interest. They will be in a powerful position to threaten to delay completion in order to extort better terms, because of the great dislocation costs imposed by many such projects. They may need to impose delays because they have deliberately over-committed in case some contracts are cancelled, and they are in a good position to exploit their customers' lack of expertise and inability to monitor them full-time. Regulations requiring building inspections and warranties may safeguard consumers against under-servicing and tardy completion. However, it may come at the cost of increasing project lengths if projects cannot proceed to their next stage until an inspector has signed off work that will be covered up by work that follows.

At first sight, the great number of potential suppliers of renovation services in the Yellow Pages of a major city may appear to imply there is no 'small numbers' problem. Moreover, suppliers can seek to signal quality via their membership of trade associations and testimonials from previous customers, whilst renovators can also use their social networks to try to find reliable contractors. Things get difficult, however, when there are shortages of skilled trades-people relative to the total demand for their services, as this limits the ability of house owners to find replacement contractors at short-notice if they want to fire existing ones mid-task. Once hired, a contractor can therefore strategically weigh up the benefits of acting with opportunism versus the damage this might do to his or her reputation: chances of being fired are rather slim and having some disgruntled customers who pass negative comments to their social networks may not prevent further business from being picked up in the sellers' market if at other times the job is done well and an up-to-date stock of testimonials is maintained.

Asset specificity is an issue that normally puts much of the risk of a transaction on to the supplier's side. Its significance is limited in the renovation context as far as investments in tools by contractors are concerned. Payment by instalments as work proceeds largely eliminates the potential risk associated with the immobility of the work that has been done. However, instalment payments limit customer leverage over contractors who fail to finish their tasks because more lucrative contracts have become available elsewhere.

Aside from the general problem renovators have doing trouble-free deals with contractors at prices that do not entail excessive profit margins, the context of renovation makes it ripe for renovators to over-capitalize, i.e. to end up spending far more on projects than the value the completed work will add to their properties. In terms of behavioural economics, such projects seem to have enormous potential for escalation of commitment and spending blowouts rather similar to those observed with public works projects. One aspect of this is where the decision to go ahead with the project is based on a rough estimate of its overall costs but where it actually consists of a series of sub-projects, the costs of which are only worked out with some care when their time for implementation arrives. Another issue is that renovation projects often impose major disruptions to life in already-occupied properties. If problems are encountered, renovators may tend to want completion 'at all costs' just to get their lives back to normal as soon as possible. (This tendency will be increased to the extent that decision makers engage in hyperbolic discounting rather than exponential discounting.) Not only may renovators put

pressure on them to agree to ‘necessary’ work that initially had not been specified (which perhaps the contractor had been ‘holding up his or her sleeve’ at the time of doing the estimate) but there may also be scope for the contractor to push the case for less ‘essential’ additional work on the basis of the costs of delaying it to another time. Under pressure for a quick decision to avoid delays and disruptions, the quality of choice is unlikely to be good, since:

- Increments to cost appear smaller due to framing effects in terms of money so far spent.
- There will be a ‘sunk cost bias’ against trying to achieve a ‘cut and shut’ end to project where costs start to escalate.
- Cognitive dissonance reduction processes are likely to result in the renovator padding estimates of payoffs (or emphasize more distant returns) in line with cost escalations.
- Shopping around for alternative quotations for the additional work may greatly lengthen the time to completion and cause chaos with contractors’ work schedules for other projects, so the pressure to accept and hope one is not being ‘ripped off’ is acute. The trouble is, trades-persons may recognize this and be prone to succumb to the conflict of interest they face if they both recommend what needs to be done and get paid for doing it.

On top of tendencies to be *willing* to let costs escalate, there is the increasingly common *ability* to do so without having to ask hard financial questions in cases where renovators are drawing against substantial unused credit lines on home-equity mortgages.

To reduce these risks of over-capitalization, the authorities might develop websites and/or pamphlets warning consumers of why they might end up spending far too much. They might also publish guidelines for what it is wise to spend on particular kinds of renovations in particular property price ranges — though, in doing so, they run the risk that these will become quotation norms. A more radical policy would be to make renovation contractors liable for all ‘unforeseen’ work that is needed to complete project, as an incentive toward due diligence when preparing estimates and to refrain from keeping quiet about additional work they suspected might be necessary.

9 CASE STUDY (2): FINANCIAL SERVICES

We have already seen, via the work of Waterson (2003), discussed in section 6, that profitability in the banking sector may be affected by the reluctance of consumers to switch between rival banks, in sharp contrast to their willingness to switch between different providers of motor vehicle insurance. In this section I probe a bit further into the financial services sector to show areas other than in respect of switching costs where a behavioural perspective has regulatory implications.

Speculation

A behavioural perspective on speculative choices in asset markets of the kind that occurred in New Zealand in the boom-bust episode around 1985-8 implies a need both to protect consumers from themselves and from financial intermediaries. We should not be surprised that so many novice speculators got sucked into speculation, often at great cost to their personal wealth. When markets are rising rapidly, the behavioural economist would expect a mood of euphoria to set in (Minsky, 1975) with decisions about asset commitments being taken in haste and with insufficient diligence, and for processes of cognitive dissonance reduction to result in a blind eye being turned to the possibility of a market reversal (Kaish, 1986). (The cognitive dissonance issue also arises regarding how individuals and financial institutions deal with losses during a down-turn. Unlike realized losses which have a rather concrete reality, paper losses can be dismissed, if one wishes, on the basis that values are bound to recover sooner or later.)

The need to protect consumers against risks associated with speculation in financial assets and property investments seems strong not merely because of the likelihood of poor-quality decision-making but also because of the encouragement to engage in such risk-taking that comes from the financial institutions themselves. So long as banks allow for possible falls in asset values when their customers borrow against their existing assets for speculative purposes, the risk is almost entirely on the side of the borrower. For example, suppose you own a house worth \$400,000, with a mortgage of \$100,000. If the bank will extend your mortgage to \$150,000, you can use the extra \$50,000 as a deposit on an investment apartment purchased for \$250,000, against which the bank is happy to lend you a further \$200,000. In effect, you have a 100 per cent mortgage on the investment property. If this were the only property that you owned, this would be risky to the bank, since if you defaulted on payments and the property market had not risen, then a forced sale of the property would probably yield less than the amount owed on it. This is not so where one loan is leveraged against the equity in another asset. If property prices fell by, say, 30 per cent your two properties would be worth \$455,000, not \$650,000, but this still provides the bank with comfortable headroom over the \$350,000 that you owe, so there is minimal risk of loss to the bank if you were to default and the properties were to be sold at short notice.

Given this, there may be a case for requiring that anyone who undertakes such ventures should be provided with information about the past performance of the assets in question over the long period (so that they do not operate with simplistic and incorrect decision rules that, on the basis of 'as safe as houses' principle, deny the risk of price falls) both in terms of capital values and income streams. Furthermore, at the time of signing the loan documents, they could be required to make a declaration that they were supplied with this information at least 48 hours previously and have read and reflected upon it. This seems especially important with inexperienced investors who are a long way along a decision rule cascade (Earl, Peng and Potts, 2005) and hence are likely to be latecomers to the market, less adept at spotting properties with the best potential for capital gains, and more likely to have problems in achieving reliable rental returns.

Consumer Credit

Behavioural economics leads to other concerns about consumer debt, which might be addressed via regulatory policy:

1. Although it is quite easy to calculate total interest charges on a loan and see whether, in the light of them, one really wants that desperately to own right now the item in question, there is no guarantee that consumers will do so and concentrate their minds in this way. Loans are typically framed in ways that are designed to show whether they are affordable, such as monthly or weekly repayments, with interest charges often kept well out of sight in the 'fine print' and total charges not mentioned at all.
2. With car financing, the borrower's risk is often increased by offers such as '\$3000 minimum trade-in, regardless of condition'. Because of the probability of some customers indeed trading vehicles that are virtually worthless, car yards that offer such deals have to advertise higher prices than rivals that are not making such trade-in offers. However, these deals enable someone with a worthless old car and no cash for a deposit to be eligible for what is in effect 100 per cent loan despite the asset being one whose market value is likely initially to fall faster than the amount owed against it. For example, although the customer might be denied a 100 per cent loan against a \$10,000 car from another yard after taking his or her present car to the wreckers, they may be granted \$10,000 finance against a similar vehicle that is *supposedly* sold for \$13,000 with a \$3000 trade-in allowance. According to the paperwork, this is only a 77 per cent loan. If the borrower is taking an over-optimistic view of the prospect of being able to keep up repayments and the lender is also suffering from bounded rationality about the genuine worth of what is being purchased, then we have a recipe for defaults that could have serious consequences.
3. If consumers have a poor understanding of the distribution of risks between themselves and suppliers of finance when they enter into a loan, they need a way for judging whether a particular loan will be safe to take up. If they take the view that *a default by themselves is not in the interests of the loan provider*, they may see the latter as a source of supply of decision rules about what constitutes safe borrowing, even though the financial institution's lending rule, unbeknown to them, is one that would be *safe for the institution even if the customer defaulted*. Even so, this may result in them facing the prospect of loan repayments that look pretty scary. If consumers face cognitive dissonance between, say, thinking of themselves as the sort of person who can own a particular asset and thinking about the financial stress that a loan to purchase it might entail, they can resolve the cognitive dissonance by giving a positive spin to ambiguity about, say, their immediate promotion prospects, repair bills and so on, rather than seeing such uncertainties as grounds for caution and for holding back from extending themselves to the limit in financial terms.
4. Compared with traditional fixed-term loans and hire purchase agreements, credit cards and home equity loans/credit-line mortgages are much more likely to result in problematic decisions due to the ways that consumers wrestle with their lack of

self control and manage cognitive dissonance. In the case of credit cards, those who do not see themselves as the sort of person who gets into debt can succumb to the temptation to purchase something with a credit card on the basis that they are using it as a means of payment. At the time of making the purchase, they can tell themselves that they will not use the extended credit facility but later on they may concoct a way to justify to themselves not paying it off in full (Maital, 1982). With lines of credit, there is nothing to concentrate the borrower's mind on the implications of buying something now in terms of the extra monthly interest cost and what it might be necessary to do by way of increasing monthly repayments to pay off the balance within a particular period. This open-ended and vague arrangement is highly conducive to decision making in which short-term desires hold sway, any long-term implications depending on how one chooses to frame them. Matters would be rather different if, before making any major drawing on their credit lines, consumers were required to complete a form that spelt out the implications of the extra borrowing in terms of monthly interest charges and amount extra it would cost per month to bring the outstanding balance back to where it was within, say, three years.

5. Risks of poor credit appraisals increase if intermediaries compete increasingly via rule-based (e.g. on-line) application systems rather than face-to-face interviews that permit the nuances of body language and nervous expressions to be picked up. If financial intermediaries had tighter profit margins, incentives to reduce default risks (rather than pad them into interest charges) would be higher.

With many kinds problem debt, the consumers in question often are not those who are poor in absolute terms. Those who are really poor are unlikely to have the assets or income flows to be eligible for, say, a credit-line mortgage. Rather, problem debtors may be people whose incomes do not match those of their reference group, whose lifestyles they seek to emulate by their spending (see the literature reviewed by Lea, 1999). In such cases, the best policies might be not those of the kind suggested by Jolls, Sunstein and Thaler (2000), based on shocking counter-advertising about risks of running into debt, but policies that somehow seek to change the reference groups that people use.

Obviously, some leverage might be achieved by policies aimed at exploding the mythology of 'designer brands', limiting the pressure to pay premium prices by publicizing the functional differences and value for money offered by rival products. Government policies may not always be necessary to do this, for market institutions such as consumer magazines may do the job perfectly well. In the case of the Audi A3 versus Skoda Octavia example used earlier in this paper, my discussion was originally pieced together from regular reading of the motoring press, but now, in its December 2005 issue, the respected UK monthly *Car Magazine* at last has provided a myth-busting comparison test of the Audi and Skoda, along with their Volkswagen Golf and SEAT Leon stable-mates. The question remaining, though, is whether such myth-busting messages reach the wider population so that those who show off their wealth by buying prestigious brands at the same time show how bad they are at shopping for value. A particular problem area is when the status-related consumption that drives people into debt involves purchases for children: one suspects that those who, say, have trouble paying their normal household bills after equipping their children with up-market trainers, iPods, etc. did not do provide

the money to purchase these items on the basis of a careful search regarding their functional properties relative to alternatives, and nor were assiduous readers of consumer magazines.

An alternative approach to policy in this area is to do some lateral thinking and consider the bigger picture of how different policy objectives inter-relate. For example, the need to regulate behaviour in the market for consumer credit might be much reduced if a government is successfully promoting policies to harm for the environment, so that consumers increasingly aspire to match those who are conspicuously frugal. (Care may be required here: there is a world of difference between being frugal by only driving a sub-2-litre car instead of a V8, and being frugal by borrowing an extra \$10,000 to buy a highly distinctive Toyota Prius hybrid petrol/electric car whose singularity means it also functions rather well as a status symbol.)

Likewise, consumer debt problems might be reduced if people could be encouraged to see early retirement as a sign of high status, and hence to take a longer-term view of the implications of their current consumption for delaying retirement. One way to do this would be to require consumers to be shown the financial implications of extra debt in terms of their retirement age at present rates of asset accumulation, or what their future rate of saving will now have to be to maintain the target retirement age. Such measures, like the ones suggested earlier in relation to credit-line usage, are technically easy to put in place nowadays via interactive websites integrated with existing electronic banking, in which barriers to increased indebtedness are only lifted if one has actually gone through the calculations on-screen and had one's mind suitably concentrated on the long-run financial implications of the purchase one is thinking of doing.

Finally, note that just as the management of cognitive dissonance can result in people getting over-indebted, so it may also result in any debt crises turning out to be more problematic than it needs to be: one way to maintain the position that one does not have a debt problem is not to open any letters from the bank or finance company.

Superannuation and Investment

Policy makers in this area of investment regulation have tended to focus mainly on the conflicts of interest faced by investment advisers and their lack of accountability. From the behavioural standpoint, we need to be more concerned with three other issues. The first is that, as with tendencies of people to fail to consult lawyers or doctors until problems have arisen rather than on a precautionary basis, people may be reluctant to pay purely for advice from independent financial experts: if the advice confirms their expectations, then they have 'wasted their money', while if it does not, it may be advice they are uncomfortable about hearing (for example, about just how long it could take them to build up an adequate retirement fund).

Secondly, there is the extreme complexity of superannuation products and, in some countries, their tax implications. The fee structures for entry, ongoing management and exit can have major implications for ultimate payouts on retirement, and mistakes are easy to make. However, that complexity by no means precludes the possibility of policies designed to show consumers the likely implications of choosing one product rather than another or switching between funds. This can be done via interactive websites, despite

current lack of an industry offering this service. Such services could also include worked examples by way of trying to ensure users did not fail to explore certain kinds of scenario, and could show returns to ‘tangible property’ of various kinds (cars, houses) under various ownership strategies to concentrate investors’ minds on opportunity costs. (Similar interactive comparison websites could be provided for banks’ loan products if we were nervous about the independence of mortgage-broking firms that claim to be able to find the most cost-effective mortgage to match any homebuyer’s particular circumstances.)

Thirdly, there is the issue of the extent of financial literacy that people bring to their investment choices. In the midst of all the concern about principal-agent problems involved with the use of non-independent financial advisers, and hence the need for policies about disclosure of interest, a basic point is being missed: if we take the ‘efficient markets’ hypothesis seriously, then people should not even be seeking advice about how to get a good return from investment in shares, or asking about league tables of past performance of superannuation funds as indicators of likely future performance. Although the ‘behavioural finance literature is looking at the relevance of decision heuristics and biases for the performance of financial markets, so far the message is that ‘bulletproof evidence that the market is not rational in the mainstream finance, beat-the-market sense is yet to be provided’ (Stracca, 2004, p. 399; see also Sar, 2004). What they should do, therefore, is simply accept that they cannot beat the market’s average performance in the long run and invest in market-index funds. The advice that *is* relevant to them is about risk and return issues associated with the balance of their portfolios between shares and other assets, given their age and intended time of retirement.

Initiatives to increase financial literacy are likely to be of limited cost-effectiveness if they involve general mail-outs to households. Rather they need to target those approaching significant financial choices and/or where benefits of changing one’s bank of investment strategy could be significant relative to switching costs (e.g., when changing jobs, looking for new home or car). Policymakers may consider informative advertising about financial issues in real estate, motoring and personal finance sections of newspapers. Any such advertising needs to be constructed mindful not only of the need to avoid information overload but also of the need to engage people’s attention rather than going too far with fear appeals and hence causing them to turn a blind eye to significant financial ramifications of the choices they are considering.

10 CONCLUSION

By taking a behavioural perspective on consumer choice and using it to extend Leibenstein’s X-inefficiency concept we can rethink the economics of market regulation. When Leibenstein introduced the concept of X-efficiency he only addressed implications of this in terms of choices within organizations. He sought to show that calculations of welfare losses due to imperfectly competitive markets might be prone to under-estimation because, *relative to given demand curves*, costs might be higher than they needed to be due to X-inefficiency arising as a result of limited competitive pressure. What he failed to address was the possibility that *positions of demand curves could be wrong, too*, with consumers being more willing to pay for some products than they needed to be, because

of shortcomings in the ways that they sought to cope with the problem of choice. If consumers develop better ways of capturing consumer surplus, they put firms under greater pressure to innovate and find ways of reducing X-inefficiency in their existing activities. Regulatory policies aimed at increasing consumers' purchasing capabilities may thus have an important role to play in promoting industrial dynamism. However, they need to be carefully designed to ensure that firms cannot retaliate by stepping up their attempts to capture consumer surplus via market manipulation ploys aimed at moving their demand curves back towards the right. Behavioural economics has much to offer in attempts to understand sources of consumption X-inefficiency, how market manipulation works and what may be done to counteract both phenomena.

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Behavioural economics is relevant throughout the cycle of regulating. In the design of regulations, a number of behavioural informed policies have simplified information and choices with clearer presentation of information for better outcomes. The US Consumer and Financial Protection Bureau simplified information disclosure for mortgages, credit cards and student loans so that people can "know before you owe". Defaults and convenience are another type of behavioural informed intervention where, for instance, the choice to opt out of a scheme is provided rather than the choice to opt in, thereby applying behavioural economics at the Financial Conduct Authority. Occasional Paper. 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. 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.