

# Economic Comment

## Regulating Markets with Short-sightedness

This Economic Comment discusses the consequences for regulation, particularly of financial markets, of short-sightedness among decision-makers — a form of limited rationality. The material is drawn from Europe Economics Staff Working Paper 2004.1, “Regulating Markets with Short-sighted Decision-makers”.

### Rational and Irrational Decision-Makers

Standard economic theory assumes that decision-makers act as if they are Rational. That is to say, it is assumed that when people are making choices over how much to save, whether to accept a particular job offer, whether to pay the asking price for a house, etc., they make the best possible use of the information at their disposal.

This may seem a mild enough assumption, but what is meant by “best possible use” here involves remarkable powers. For example, in making “best possible use” of their information, Rational decision-makers are supposed to

- ◆ be able to look ahead indefinitely far into the future and form an opinion about the likelihood, value, and consequences of any event or decision;
- ◆ understand the true underlying functioning of the economy;
- ◆ know all of the theorems of mathematical logic (including all those mathematicians haven’t even thought of yet, let alone proved);
- ◆ be able to nest indefinitely sequences of the form “If I know that you know that he knows that she knows that I know that we all know that you know...” etc..

It has become increasingly popular recently to defend government interventions (e.g. regulation, taxes, subsidies) on the grounds that economic decision-makers are not fully rational — particularly in finance and financial services. For example:

- It is widely argued that the Federal Reserve should have imposed wider margin requirements at the height of the 1990s stock market bull run, because of the “irrational exuberance” the market was supposedly exhibiting;
- During the bear market of the early 2000s there were many calls for short selling to be regulated to counter “irrational” spates of selling in response to bad news;
- The Sandler Review of Medium and Long-Term Retail Savings in the UK found that many products were overly “complex” (i.e. consumers did not understand how they work, in contradiction of (b) above) and that their use of “inappropriately short timescales” was “misguided” (in contradiction of (a));



- The 2001 FSA report “Choosing a mortgage: Report of a research review and qualitative research on the mortgage buying process” found that “In practice, the available research on the mortgage buying process indicates that borrowers’ behaviour is more limited [than is rational] and their stated information needs are predominantly focused on the immediate financial cost of taking a mortgage.... longer-term benefits, as well as potential tie-ins, etc. did not form a significant part of borrowers’ information needs”. This view was echoed by the Miles Review Interim Report, December 2003, and formed the basis for the suggestion there that government measures were required to encourage more long-term fixed-rate mortgages.

The assumption of agent Rationality is a valuable discipline to economics research. It defines for us what counts as a legitimate explanation, and allows us to reject certain behaviours or outcomes as irrational. Conversely, casual quasi-economic commentary sometimes resorts to irrationality to “explain” odd behaviours far too readily — since any behaviour can count as irrational, a mere declaration of irrationality cannot count as an explanation of anything.

One danger of reaching for irrational explanations for economic phenomena is that we shall miss important insights. For example, a famous idea in nineteenth century economics was that demand for certain staple foods such as bread might rise when the price rose. Analysis of this “Giffen good” situation led to the distinction between income and substitution effects, and to much of modern consumer theory. But an alternative “explanation” of an observation of demand for bread rising along with the price might have been to say something like “Well, of course if they were rational consumers would buy less of a good when the price rises. But consumers aren’t always rational, as can be illustrated by the example of demand for bread.”

One way to limit this danger is to use explicit models of irrational behaviour, so that not just anything counts as a particular form of limited rationality. For example, we might have models of people who can only look finitely far into the future (who have limited foresight) or models in which agents use their own, imperfect but specific, models of the economy. In recent decades a significant research programme has developed along these lines. Explicit models of agents with restrictions on their Rationality are called “bounded rationality” models.

As illustrated by the examples quoted above, one of the most commonly discussed forms of limited rationality relates to alleged short-sightedness. In our working paper we discuss a number of models involving explicit forms of limited foresight, to see the consequences. One important lesson from the conducting of explicit modelling of bounded rationality is that common casual assumptions about the consequences of bounded rationality are very often badly confused — when agents are boundedly rational many things change that casual thought does not predict, while other things that are expected to change are unaffected. When agents are not rational the standard economic intuitions that guide us very well when rationality applies, giving us useful intuitions and important insights, cease to apply. The world of boundedly rational agents does not work as we might expect.

Furthermore, markets have mechanisms for exposing and removing irrationality, for irrationality leads to mistakes and mistakes are not profitable so profit-maximising competition will tend to drive behaviour that, at least, appears Rational. Government intervention to “protect” people and



prevent their irrationality from being “exploited” will tend to undermine these processes for removing irrationality.

All this means that we should be very circumspect before recommending government intervention on the basis of non-modelled claims of bounds to rationality. As economists we are trained in a rational paradigm and our intuitions can be a useful guide to practical policy-making when agents are rational — we have some sense how such agents behave and what the consequences of regulating them will be. But we don’t understand well how irrational paradigms will operate, and the policy solutions we are used to may well make things much worse rather than slightly better.

### **Key Results of the Working Paper**

The working paper considers two forms of short-sightedness. In one form agents are naïve and do not realise that the world will continue beyond their horizon of foresight. In the other, agents simply do not care (directly) about what happens beyond the horizon of foresight, but are aware that, later within their foresight horizon, they will start to care about more distant matters. Each of these forms of limited foresight is compared formally with Rational behaviour for a number of important financial decisions, particularly a period-by-period savings/consumption decision; decisions over how much housing to purchase; and long-term critical injury insurance.

The key technical results illustrated in the working paper include

- If agents become more aware of their old age without caring more about their late-life utility, then issues of over-consumption among the young are exacerbated (rather than reduced, as we might have expected).
- Counter-intuitively, short-sightedness tends to affect markets involving long-term decisions less than those involving short-term decisions (in fact, with certain long-term decisions the Rational result is reached, despite short-sightedness).
- When agents are not fully rational they can benefit, rather than lose out, when firms restrict the choices they are offered.

The working paper explores the consequences of an important form of bounded rationality, short-sightedness, to various financial decisions. It finds that in some cases, where a decision has whole-life consequences (such as the lifetime mortgage or the lifetime critical injury insurance) it is enough to achieve the Rational outcome that agents should be aware that there *are* implications beyond their current horizon of foresight, even if they do not yet care about or fully understand matters beyond that point. In contrast, a naïve agent who is unaware of his short-sightedness will make mistakes.

However, this does not apply to all types of financial decision. When decisions are repeated throughout life, such as the decision about how to balance consumption and saving each period, greater awareness of the future, if not coupled with greater *care*, might actually drive behaviour *more* deviant from optimal Rational behaviour than would otherwise be the case.

The models in our working paper, though they are very simple and not intended to justify concrete policy recommendations, do illustrate the difficulty of determining the best policy response when



markets exhibit bounded rationality. Casual theorising, not supported by an explicit model of boundedly rational behaviour, can

- lead us to miss important insights by mis-classifying behaviour as irrational when it actually reflects important but unusual Rational features (such as the Giffen goods);
- tempt us to intervene in cases where competition and other market processes would exploit mistakes arising from irrationality and, in due course, drive such irrationality away; or
- even if we are correct in deeming behaviour irrational and even if the market would not correct such irrationality itself, we may easily fall into policy recommendations that make things worse rather than better (for example, by intervening in markets that are unharmed by agent irrationality).

Finally, we should also remember that policy-makers themselves may exhibit bounded rationality. Indeed it can be argued that policy-maker limitations on rationality may be more severe because the lack of competition is less likely to expose and undermine mistakes. If a policy-maker himself exhibits short-sightedness, his attempts to enact regulation to correct for short-sightedness among private agents could easily become a case of trying to pick the mote out of your neighbour's eye while ignoring the beam in your own.

*Europe Economics, March 2004*

For further information on short-sightedness or other aspects of financial services regulation contact Andrew Lilico at Europe Economics. Staff Working Paper 2004.1, "Regulating Markets with Short-sighted Decision-makers" is available on the Europe Economics website [www.europe-economics.com](http://www.europe-economics.com)

Europe Economics is an independent economics consultancy, specialising in economic regulation, competition policy and the application of economics to public policy and business issues.

For general enquiries contact: Samantha McCarron at Europe Economics, Chancery House, 53-64 Chancery Lane, London WC2A 1QU.

Tel: (+44) (0) 20 7831 4717 Fax: (+44) (0) 20 7831 4515 email: [enquiries@europe-economics.com](mailto:enquiries@europe-economics.com)