

Experimental economics - scattergun or science?



Competition authorities in the UK are increasingly using experimental economics to help identify market problems and design remedies to address them. This Insight describes what experiments are and highlights some of the key issues in their use.

To err is human

Experiments have been used to test the predictions of economic theory for a long time. The first well-documented experiments were conducted by Chamberlin in 1948¹ and by Smith in 1962.² This early research had two main objectives. The first was to test whether the predictions of basic microeconomic theory - i.e. that market prices are determined by the intersection of supply and demand - hold in experimental conditions. The second was to examine whether experiments had an informative role to play in economics.

¹ *An Experimental Imperfect Market.* Edward H. Chamberlin. *The Journal of Political Economy*, Vol. 56, No. 2. (Apr., 1948), pp. 95-108.

² *An Experimental Study of Competitive Market Behavior.* Vernon L. Smith. *The Journal of Political Economy*, Vol. 70, No. 2 (Apr., 1962), 111-137.

*"It is commonplace that, in its choice of method, economics is limited by the fact that resort cannot be had to the laboratory techniques of the natural sciences...The purpose of this article is to make a very tiny breach in this position: to describe an actual experiment with a "market" under laboratory conditions and to set forth some of the conclusions indicated by it."*³

The research suggested that 'yes' was the answer to both questions and, particularly throughout the 1980s and 1990s, experiments were used by academic researchers to test whether the predictions of game theory hold in practice.

The results of a now particularly famous experiment were published in a 1982 by Guth et al.⁴ The set up was as follows. Two players had to negotiate over a fixed amount of money (for example, £100). The first player states the share he wants (say, £60). Then the second player has to decide whether she wants to accept or reject the remaining share (here, £40). If she accepts, the first player receives the share he wants and the second player receives the remaining share. If, however, she rejects, both players receive nothing. Game theory predicts that the first player should state the smallest non-zero share possible. In theory, the second player would rather accept a trivial amount than get nothing at all by rejecting. The results of countless experiments? 50:50 splits are the most common. 20:80 splits are frequently rejected.

The experiments showed that people do not behave in the way predicted by game theory. They are altruistic, take shortcuts when making decisions and, in doing so, make systematic and predictable mistakes (e.g. they fail to save enough for retirement).

³ *Edward H. Chamberlin (1948).*

⁴ *An experimental analysis of ultimatum bargaining.* Werner Guth et al. *Journal of Economic Behavior and Organization*, Vol. 3, No. 4 (Dec., 1982), 367-388.

Learning the lessons

The lessons of experimental economics and its sister subject, behavioural economics, started to appear on policy makers' radars in the last decade - some 20 to 30 years after the pioneering work of the 1980s and 1990s. It is not clear why it took so long. Some argue that it took the publication of popular books such as Thaler and Sunstein's 'Nudge' in 2009 to raise enough awareness, but it seems very unlikely that's the full explanation.

Later still, in this decade, competition authorities in the UK started to use experiments to help identify market problems and design remedies to address them.

The first research was conducted by the Office of Fair Trading (OFT), now superseded by the Competition and Markets Authority (CMA). The focus of the OFT's research program was on how presenting prices in different ways affects consumer decision making and so competition. For example, the research showed that 'drip pricing' - the practise of advertising a headline price and incrementally adding on unavoidable fees and surcharges throughout the sales process - resulted in too little search, too little switching and therefore, consumers making poor decisions.⁵

Other experiments have, or are, being conducted by the Financial Conduct Authority (FCA). As noted by the FCA itself, financial services are particularly prone to the 'behavioural biases' that experiments uncovered, namely:

- many of the products and services are inherently complex;
- they can involve trade-offs between the present and future;
- decisions involve assessing risk;
- decisions can be emotional; and
- some products and services don't allow learning from past mistakes.

Indeed, the FCA's Chief Executive has stated that suppliers may seek to exploit these biases "*...the new FCA won't be afraid to shine a light on the murkier psychological enticements and entrapments that exist in financial services...we will be looking across markets to*

⁵ http://www.offt.gov.uk/shared_offt/economic_research/

⁶ <http://www.fca.org.uk/news/speeches/human-face-of-regulation>

⁷ <http://www.fca.org.uk/news/cash-savings-market-study>

*see where and how behavioural economics might support our regulatory activity."*⁶

So, financial services seem to be something of the sweet shop for the experimental economist. And, to date, it has conducted two experiments: one in relation to the use of redress letters and one in relation to general insurance add-ons. It is also in the process of undertaking an experiment in relation to cash savings.⁷

Redress letters.

Companies that may have mis-sold a financial service write to their customers, inviting them to make contact if they were at all dissatisfied with the service or the way it was sold to them because they may be entitled to a refund. The FCA observed that a very small proportion of customers responded to these 'redress letters' (under 2%) and wanted to know why and what could be done about it.⁸

Accordingly, the FCA ran a 'field experiment' by working with a financial services provider who wrote to over 200,000 of its customers. Some customers received a 'standard letter'. Other customers received a letter contained some or all of the following changes:

- writing 'act quickly' on the envelope;
- printing the FCA logo at the top of the letter;
- adding salient bullets to the start of the letter; explaining that the recipient could be entitled to a refund;
- reducing the amount of text in the letter by 40%;
- explaining that the claims process would not take more than five minutes; and
- adding the CEO's signature.

The response rates to the different letters were recorded and analysed. The analysis showed that all the changes, with the exception of adding the CEO's signature, caused an increase in response rate compared to the standard letter. By far the biggest increase was caused by adding salient bullets to the start of the letter. This more than doubled response rates from just under 2% to around 4%.

⁸ <http://www.fca.org.uk/static/documents/occasional-papers/occasional-paper-2.pdf>

General insurance add-ons.

Following its finding that Payment Protection Insurance had been widely mis-sold, the FCA has been investigating the supply of 'general insurance add-ons'.⁹ The FCA identified four features of general insurance add-ons that could mean that consumers make mistakes when buying them:

- the primary product is more engaging and distracts from the features and cost of the add-on;
- the features and cost of the add-on are unclear;
- add-ons are introduced towards the end of the buying process when consumers are fatigued; and
- it is difficult to compare the add-on products with others that are similar.

To examine these possibilities, the FCA conducted an 'online experiment' involving over 1,500 individuals. There were five 'treatments' in the experiment.

- The 'insurance only' treatment, where participants only had to choose the insurance add-on.
- The 'up-front add-on' treatment, where the price of the add-on was displayed alongside the price of the product.
- The 'add-on at the POS' treatment, where the price of the add-on was displayed at the point of sale.
- The 'add-on at the POS and easy alternatives' treatment, where the price of the add-on was displayed at the point of sale, with competing add-on offers displayed alongside.
- The 'add-on at the POS and hard alternatives' treatment, where the price of the add-on was displayed at the point of sales, with competing add-on offers available by 'clicking through' to another page.

Amongst other things, the analysis of the experiment showed that the 'add-on at the POS' treatment resulted in consumers (on average) searching less and paying more for insurance than under any of the other treatments. The 'add-on at POS and easy alternatives' encouraged the greatest amount of searching by consumers and the resulted in the lowest prices being paid for insurance.

Amongst other things, the FCA is now consulting on a deferred opt-in on add-on sales of Guaranteed Asset

Protection insurance and a ban on pre-ticked boxes (so-called opt-outs).

Frankenstein's monster?

Clearly, the value of an experiment depends on the quality of its design and implementation. For example, a key issue is how best to balance the degree of control and validity. Generally, lab experiments conducted in universities with students as the subjects have a high degree of 'control' - i.e. the ability of the researcher to filter out real world 'noise' and therefore isolate the effect of the 'treatment'. However, this generally comes at the expense of 'validity' i.e. the extent to which the results of the experiment can be applied to situations outside of the lab - this is where field and online experiments can perform better. Other issues include 'demand effects' whereby respondents try to guess what the 'right' behaviour in an experiment is, and thereby behave in a way that is different to how they would behave outside of the experiment.

Like all empirical work (such as surveys and econometrics), the inherent limitations of experiments mean that how the results of them are interpreted alongside other evidence - and the decisions that flow from them - is critical. In particular, as indicated by the examples above, experiments appear to be particularly well suited to testing potential remedies in a way that other empirical work is not. Therefore, one can envisage that experiments may become the evidential basis for pursuing remedies at all, and pursuing some remedies over others.

Obviously, evidence gathering leading to more efficient remedies is hardly objectionable. But two questions remain unanswered.

- » First, could experiments provide the basis for 'remedy shopping' and resultant ad-hoc fine tuning (tinkering?) that gives competition and regulatory authorities greater control over the product and service design than is desirable or intended?
- » Second, could experiments become seen as a way of short-cutting proving that there is a problem to be addressed, and rather encourage dangerous 'isn't it obvious that if they did it this way it would be better' type intervention?

We will probably find out over the next year or two.

⁹ <http://www.fca.org.uk/your-fca/documents/market-studies/ms14-01-final-report>

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