



Economic Engineering & Reflectivity

Philosophy of Economics

University of Virginia

Matthias Brinkmann

Contents

1. **FCC Auctions**
2. Reflectivity
3. The Effects of Studying Economics
4. Looking Back & Forward

Guala on FCC Auctions

- Auction theory could **not** tell economists which design would be optimal (nor can the chosen design be theoretically proven to be optimal)
- However, concepts from game theory were used (backward induction, Nash equilibrium, utility maximisation, etc.), and partial solutions offered
- Many rules of thumb: higher entry costs scare away opportunistic bidders, more transparency diminishes Winner's curse, etc.
- Factors never predicted by theory play a role (e.g., social signals, cycles, price bubbles)
- Many different roles for experiments: testing, comparing, exploring, simulating, finding practical obstacles

Guala's Upshots (474-5)

1. Scientists did not follow an instrumentalist model in understanding the FCC auctions
“Bidders’ reactions to possible strategic situations must be analysed in the light of realistic cognitive capacities at the individual level. One cannot just presume that buyers behave ‘as if’ they were rational.” (474)
2. The assumption of rationality could often be assumed to be fulfilled—because professional game theorists were involved!
“[D]ue to the partly self-referential character of social concepts, for the construction of a stable and reliable socio-economic mechanism to be possible at all, adequate self-perpetuating mechanisms must be set in place.” (475)
3. Reliable mechanisms in human behaviour can be found, but they are rare, and must be created very carefully

Contents

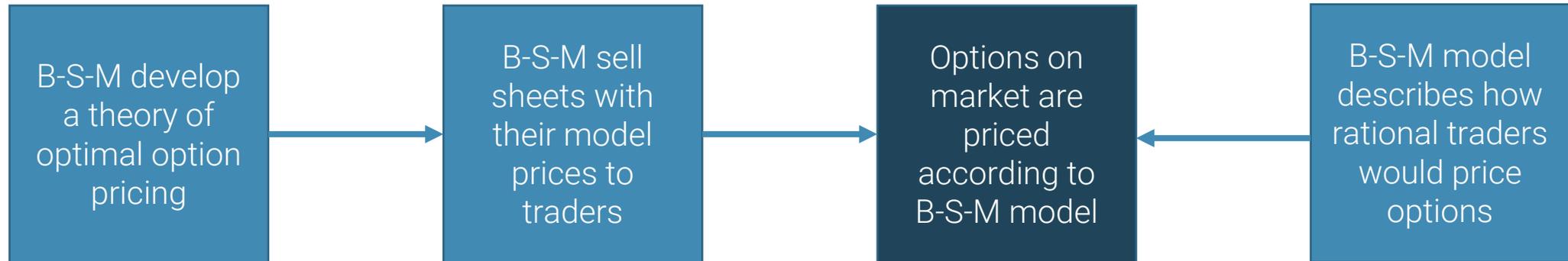
1. FCC Auctions
- 2. Reflectivity**
3. The Effects of Studying Economics
4. Looking Back & Forward

Example: Bank Run



- This is an example of a **self-fulfilling prophecy**
- It does not matter at some point whether X is in financial trouble; what matters is whether people *believe* that X is in financial trouble

Example: Black/Scholes/Merton



- Economic theory itself can have an impact on reality
- Black-Scholes-Merton developed a theory of option pricing; their theory was consciously followed by traders
- **Counterexplanation:** their model was successful because it correctly described rational prices; prices would have converged to B-S-M prices at some point

MacKenzie 2007, 61-2

ices. Perhaps the most widely used sheets were sold by Fischer Black himself (see figure 3.2). Each month, Black would produce computer-generated sheets of theoretical prices for all the options traded on U.S. options exchanges, then have them photocopied and sent to those who subscribed to his pricing service. In 1975, for example, sheets for 100 stocks, with three volatility estimates for each stock, cost \$300 per month, while a basic service with one stock and one volatility estimate cost \$15 per month (Black 1975b).

How were Black's sheets and similar option pricing services used? They could, of course, simply be used to set option prices. In April 1976, options trading began on the Pacific Stock Exchange in San Francisco, and financial economist Mark Rubinstein became a trader there. He found his fellow traders on the new exchange initially heavily reliant on Black's sheets: "I walked up [to the most active option trading 'crowd'] and looked at the screen [of market prices] and at the sheet and it was identical. I said to myself, 'academics have triumphed'" (Rubinstein interview, June 12, 2000).

Reflectivity



Contents

1. FCC Auctions
2. Reflectivity
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4. Looking Back & Forward

The Effects of Studying Economics

Table 2
Summary of results: Experiments 1–11.

Experiment	Mean % of resources invested
1. Basic experiment	42%
2. Skewed resources and/or interest	53%
Experiments 1 and 2, combined	51%
3. Provision point	51%
4. Small groups with provision point (except those with sufficient interest to provide the good themselves)	60%
5. Experienced subjects	47%
6. High stakes	
Experienced interviewers	35%
All interviews	28%
7. Feedback, no changing initial investment	46%
8. Feedback, could change investment in individual account	50%
9. Feedback, could change investment in individual account — college students	49%
10. Manipulated feedback	
Low	43%
Medium	50%
High	44%
11. Non-divisibility	
Divisible (control)	43%
Non-divisible	84%
12. Economics graduate students	20%

The result is from Marwell, Gerald, and Ruth E. Ames. “Economists Free Ride, Does Anyone Else? Experiments on the Provision of Public Goods.” *Journal of Public Economics* 15, no. 3 (1981): 295–310.

Comparison: your average contribution in the class experiment was 37%—although only 23% if you exclude the last five rounds.

Potential Problems with Study: high schoolers vs graduate students; no correction for gender disparities

Alternative Explanation: self-selection

Marwell/Ames 1981, 308-9

Two questions we asked of subjects concerned 'fairness' [...]. One asked what they thought a fair investment in the group exchange would be. The other asked whether they were 'concerned with fairness' in making their own investment decision. There was surprising unanimity of thought regarding what was considered fair [amongst non-economists]. [For noneconomists,] we found that more than three out of four thought that 'about half' or more of a person's resources should be contributed [...].

Comparisons with the economics graduate students is very difficult. More than one-third of the economists either refused to answer the question regarding what is fair, or gave very complex, uncodable responses. It seems that the meaning of 'fairness' in this context was somewhat alien for this group. Those who did respond were much more likely to say that little or no contribution was 'fair'.

Further Reading

- Frank, Robert H., Thomas Gilovich, and Dennis T. Regan. “Does Studying Economics Inhibit Cooperation?” *Journal of Economic Perspectives* 7, no. 2 (1993): 159–71.
 - Survey broadly supporting the Marwell/Ames result
- Frey, Bruno S., and Stephan Meier. “Are Political Economists Selfish and Indoctrinated? Evidence from a Natural Experiment.” *Economic Inquiry* 41, no. 3 (2003): 448–62.
 - A clever study claiming that economics does not make you selfish—the supposed effect can be explained through self-selection amongst students

Contents

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Course Structure

Title	Topics	Area of Economics	Example
1 Explaining through Models	Falsification, Instrumentalism vs Realism, Models & Unrealistic Assumptions, Explanation	Microeconomics	Hotelling
2 Macroeconomics and Crisis	Programmes/Paradigms & Revolutions, Scientific Progress, Financial Crisis	Macroeconomics	Friedman
3 Economics in Practice	Causation, Capacities, Ceteris Paribus, Instrumental Variables, Experiments	Empirical Economics	Acemoglu et al.
4 Rational and Animal Spirits	Rationality, Bounded Rationality, Irrationality, Practical Reason, Nudging	Decision Theory & Behavioural Econ.	Harsanyi, Thaler
5 Individual and Common Good	Fact-Value Distinction, Utility, Preferences, Welfare, GDP, Happiness	Welfare Economics	Landes/Posner