

IS ECONOMICS MORE EMPIRICAL?

All scholars who survey the state of economic science over the last forty or so years report major changes, not just in the content of what is done but also in the way it is done. While all see considerable change, observers emphasize different aspects of the change as being crucial. Some emphasize increased rigor of modelling (Lucas, p. 2), others the application of statistical techniques (Cargill, p. 1; Stigler, 1965, p. 343; Worswick, p. 74) and still others, more broadly, an increase in empiricism (Zellner, p. 27). As might be expected, the disagreements in *explaining* the change are even greater than those in *describing* it. Some attribute the change to the development of more sophisticated mathematical techniques (Lucas, p. 2; Zellner, p. 27), others to the advent of the computer (Frazer, p. 101; Zellner, p. 27), and still others to the impact of the philosophy of positivism (Rothbard, p. 311; Seligman, p. 257).

Testing competing descriptions and explanations is difficult in the absence of any systematically collected evidence about the magnitude and timing of the changes in method. Efforts to construct such measures run up against predictable problems concerning what we mean by a change in the method of economics. Specifically, does the work of the best innovators represent the method of economics, or should the method of economics be defined more broadly as the method of those certified in some way as competent? With either answer there is the further problem of deciding what constitutes a change in method. Schumpeter, for instance, advocates mathematical techniques but did not use them. So are we to classify his method by what he said or what he did?

Despite the problems, however, it is easy to obtain systematic measures that are a significant improvement over the casual intuitions that are now current. Here I report systematic evidence on just one aspect of method: the extent of empirical work in economics since 1950.

The 1950 starting date was selected because the rise of positivism in economics is often associated with the 1953 publication of Friedman's "The Methodology of Positive Economics." To obtain a measure of empiricism I went through all of the main articles in the first issue of each year of the *American Economic Review* and the *Journal of Political Economy* from 1950 to 1980. Currently the most widely subscribed-to journals in the field (Kagann and Leeson, p. 987), the *AER* and the *JPE* are assumed to be reliable gauges of any major changes in the methods of economic research. For each issue examined, I recorded the total number of pages of main articles and the number of pages that were empirical. The percent of empirical pages was thus my measure of empiricism. The decision to declare a page empirical was usually clear-cut, but occasionally required judgement. To be judged empirical a page had to involve more than just armchair or intuitive 'facts.' It was necessary for someone to have gone out and done some relatively rigorous checking into the facts. Thus any page that contained an empirical table or graph or that was mainly a discussion of such tables or graphs counted as empirical. Any page that cited a statistic or two was given credit as a fraction of an empirical page (the number of empirical pages was rounded for each article). Detailed institutional descriptions were not counted as empirical.

Figure 1 displays the results I obtained. As can be seen from the graph, no significant increase in empiricism has occurred over the past 30 years. Thus, increased statistical sophistication, decreased computer costs and the philosophy of positivism had little effect on the proportion of empirical work relative to non-empirical work. This is not to say, however, that such forces had no impact on the character of the empirical work that was done in the period. In fact, measuring the changing character of empirical work done over the period is the next most important task remaining to be done. In future work instead of classifying articles according to their empirical and non-empirical content, articles should be classified as to: the number of regressions run, the use of previously unexploited data, and whether empirical work was used to test *a priori* hypotheses or to inductively derive generalizations. Such work would demonstrate that, beyond textual interpretation, the historian of thought can provide useful evidence on the path economic analysis has taken to reach its current state. Marxists, neo-Austrians, and neo-classicists alike should find the evidence useful: the incendiary and the firefighter both need to know the causes of fire (Stigler, 1976, p. 350).

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REFERENCES

- Cargill, Thomas F., 1979. "Early Applications of Spectral Methods to Economic Time Series," *History of Political Economy* 6: 1-16.
- Frazer, William J., Jr., 1973. *Crisis in Economic Theory*. Gainesville.
- Friedman, Milton, 1953. "The Methodology of Positive Economics," in *Essays in Positive Economics*, Chicago.
- Kagann, Stephen and Kenneth W. Leeson, 1978. "Major Journals in Economics: A User Study," *Journal of Economic Literature* 16: 979-1003.
- Lucas, Robert E., Jr., 1980. "Methods and Problems in Business Cycle Theory," unpublished manuscript, University of Chicago.
- Rothbard, Murray N., 1973, "Praxeology as the Method of Economics," in Marris Natanson, *Phenomenology and the Social Sciences*, Vol. 2. Evanston.
- Seligman, Ben B., 1969. "The Impact of Positivism on Economic Thought," *History of Political Economy* 1: 256-278.
- Stigler, George J., 1965. "Henry L. Moore and Statistical Economics," in *Essays in the History of Economics*, Chicago.
- _____, 1976. "Do Economists Matter?" *Southern Economic Journal* 42: 347-354.
- Worswick, G. D. N., 1972. "Is Progress in Economics Possible?" *The Economic Journal* 82: 73-86.
- Zellner, Arnold, 1969. "Perspectives on Mathematical Models in the Social Sciences," in H. R. Hamilton, et al., *Systems Simulation for Regional Analysis*. Cambridge.

Figure 1. *Empirical Content of Major Economics Journals*

