Review of the book Bounded rationality in macroeconomics, T.J. Sargent, 1993, 0198288646

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BOOK REVIEWS

Thomas J. Sargent, *Bounded Rationality in Macroeconomics*, The Arne Ryde Memorial Lectures, Clarendon Press, Oxford, 1993. Pp. vii + 184. £ 17.50

One of the drawbacks of pure economic theory is that one becomes overconfident about understanding the mechanics of economies. This particular mood is perhaps harmless if one restricts one's attention to pure models. It becomes more dangerous if one applies the theoretical findings directly to the real world. The most important problems are often assumed away in economic theory. One of these pitfalls in dynamic macroeconomic theory is the stability property of models of intertemporal consumer behaviour. A standard trick is to assume that those models have uniqueness and turnpike properties, in other words, reaching the saddle-point stable path and after attaining this path reaching the ultimate goal of any rational agent, the Golden Rule State, is always accomplished (by assumption). Things run rather smoothly in these artificial worlds. The problem becomes quite complicated if there are multiple equilibria, some of which are unstable and others stable. Examples in the real world are quite numerous. People face stock market crashes, tax reforms, hyperinflation, exchange rate realignments and perhaps the most important of all transition problems can be found in Eastern Europe, where countries face an immense experiment of moving from a command economy to a mixed economy, where individual choice is more prominent. People are confronted with new but abstract opportunities, they try to discover the mechanisms that are at work in their economy and which trading rules might work. 'Equilibrium theories' as used by the mainstream of economists guide our thoughts about how to expect how systems work after they have adjusted to a new set of rules and expectations. But as Thomas Sargent rightly puts in his book *Bounded Rationality in Macroeconomics*, the body of knowledge of equilibrium theory has 'virtually no theories about the transition itself.' Policy advice is bound to be a step in the dark. Simple questions such as: should one reform Eastern European economies *gradually* or should one reform *immediately* in a once-and-for-all fashion. Equilibrium theories teaches us to adjust immediately and perhaps this has also been at the back of the mind of those reformers who went to Poland and Russia and advised governments to go 'cold turkey.' But who are we, one might ask, to advise other governments when our own governments reform at a snail's pace? In solving these questions one has to go back to the basics of the rational expectations literature and start rebuilding a so-called 'better mousetrap.' Rational expectations impose two requirements on economic equilibrium models, *viz* (i) individual rationality; and (ii) mutual consistency of perceptions about the model environment. Sargent criticizes these models on the grounds that 'when implemented numerically or econometrically, rational expectations models impute much *more* knowledge to the agents within the model than is possessed by an econometrician...' Modelling 'boundedly rational agents' seems to Sargent a much more promising route to understanding economic dynamics than the use of superrational agents. In building his better mousetrap he essentially builds a theory of learning about equilibria. Rational agents are replaced by 'artifically intelligent' agents who behave like econometricians. In a set of lectures, held in Skane, Norway in October 1992, Thomas Sargent tries to convert his fellow economists that bounded rationality is a much more promising route than ordinary rational expectations. In setting out his ideas he starts with a chapter that shows the shortcomings of standard equilibrium models and the research questions that theories of bounded rationality try to answer; research questions that rational expectations models are unable to answer. Selection of an equilibrium in the presence of multiple equilibria, breaking abstract rational expectations problems like the 'no trade' theorem, and analyzing the dynamics of economies that encounter regime changes are the most important questions that Sargent addresses. Following this chapter Sargent explores the algorithms needed to put 'flesh and blood' on the boundedly rational artificial agents. For this he first searches the old literature on statistics and econometrics and after that he consults the newer literature on networks and artificial intelligence. After these two technical chapters he goes on to show by means of five examples how adaptation might work in artificial economies inhabited by boundedly rational individuals. Following this chapter he describes two laboratory experiments, where adaptive algorithms have been used to interpret the results. A final chapter sums up and provides the reader with a menu of research questions that need to be pursued.

In reviewing the set of lectures written by Sargent there are a number of points that are worth mentioning. Thomas Sargent once formed, together with Robert Lucas, the Dynamic Duo of the City of Rational Expectations. In the early seventies they pushed models of rational expectations to their limits, generating a host of theorems that seemed sterile at first, but which eventually had interesting and practical spin-offs. Provocating rational expectations theorems that often implied some kind of indeterminacy or neutrality attracted intellectual resources that, as time passed, broke the codes of these theorems that obviously described situations of how many angels can dance on the head of a pin. Endogenous growth theory, intertemporal consumption and public finance theory, new trade theory and the theory of credibility or time inconsistency are the most important research fields that stemmed from just two components of rational expectations: individual rationality and mutually consistent beliefs. Sargent is of the opionion that the theory of bounded rationality, in which the condition of mutually consistent beliefs has been dropped, offers economic theory new opportunities in explaining economic phenomena that models of rational expectations can only describe by taking short-cuts. For describing how bounded rationality works and how it offers new explanations Sargent deserves praise. But ... will the idea of bounded rationality finally catch on? This is where the book takes a wrong turn. Sargent has always been the more technically-able half of the Dynamic Duo and the other half, Lucas, was always more able in phrasing his ideas elegantly and in persuading people. In his persuasive mode Lucas always uses relatively simple ideas or methods. Sargent, however, does nothing of the kind in his lectures. The book resembles a rough-and-ready copy of his lecture notes (especially the chapters on data structures and networks and artificial intelligence). At times one gets the impression that the book revolves more around technique than around economic content. Of course, the reviewer may be wrong in his assessment of the book just like Marshall who once remarked about Edgeworth's *Mathematical Physics* that is was '... an uncouth and even clumsy piece of literary work.' The theory of bounded rationality has been on the intellectual market over since Herbert Simon worked on the idea and one may well ask why the idea has never attained the status of work horse for economists. My hunch is that fundamental ideas have to be simple so that the applied economist can implement them and make them more realistic. It is in this respect that the theory of bounded rationality deserved a better salesman. Of course, it goes without saying that 'in production' of this theory there is no better technician around than Thomas J. Sargent.

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Shigeto Tsuru, *Japan's Capitalism: Creative Defeat and Beyond*, Cambridge University Press, Cambridge, *etc.*, 1993. Pp. xii + 277. $ 27.95

This is a fascinating book. The grand old man of Japanese economics – well versed not only in the mainstream, but also in Marxian thought – looks at the last 50 years of Japan's economic development, *the* post-war economic miracle. The title, alluding to Schumpeter, makes it already clear: the starting point for Japan's unprecedented growth explosion was the defeat of a militarist and imperialist regime. Comparable to the situation in West Germany the economic system underwent a major transformation which was in the institutional sphere initiated by the occupation forces.

Although Tsuru calls the post-war reforms the occupation reforms, his story makes it quite clear that the Japanese government did not adopt the American proposals lock, stock and barrel. The MacArthur 1946 draft of the constitution, for instance, contained a strong state property right of land and natural resources. The ultimately passed constitution had dropped these rights which was regretted some 30–40 years later when land prices soared. Deconcentration, the dissolution of the *zaibatsu*, was a major concern of the US 'advisers.' But what had started as a revolution emcompassing 325 companies was reduced to 9 companies in 1948, and in the end the *zaibatsu* made their reappearance as slightly reshaped conglomerates.

The first two chapters of the book are a most readable evaluation of American measures in transforming the economy and Japanese reactions to them. The year 1949 saw a stabilization shock therapy which had long-lasting effects on the Japanese economy. The exchange rate was set by the Americans more or less randomly at 360 yen for the dollar and this rate was anxiously preserved till 1971. It meant an undervaluation of the yen already in 1949 and with comparatively improving productivity it strengthened the competitiveness of Japan's exports enormously. Monetary and fiscal stabilization were likewise rigid with the effect of forced savings by the public and medium and small scale enterprise. Credits were rationed in favour of the former *zaibatsu* banks and through them in favour of big business. This is less a policy of survival of the fittest, as the author claims, than a policy of making the fit fitter.

Again similar to West Germany, economic growth and policy was eased by an inflow of skilled labour. There were more than 6 million returnees mainly from the nothern prov-