was changing with the recognition of the quasi-permanence of monopolistic competition and the efficiency gains achieved by large firms. And this change of approach was strengthened by the experience of sustained economic depression and the growing support for industrial 'rationalisation'. Yet, not surprisingly, there remained major differences of opinion between economists.

The process of convergence, Freyer argues, has continued in the post-1945 period, but it has led to greater ambiguity in the regulation of big business. This uncertainty was matched among economists, whose contribution to the issue of regulation is recorded in some detail. The fundamental problem is that big business has become to be widely accepted as a necessary condition of economic progress and, to this extent, its regulation can no longer be formulated according to the simple principles of either republican values or *laissez-faire* liberalism.

The overarching framework within which Freyer makes his comparative analysis is that propounded by Alfred Chandler. Thus British industry is seen as developing from family capitalism into the superior form of US managerial capitalism, and hence the catch-up and convergence with the USA in the post-1945 period. What Freyer does not seem to appreciate, however, is that his analysis of legal and social influences on company structure provides a major illustration of the limited scope of Chandler's typology of the nature and development of big business.

Freyer draws heavily on secondary sources and correspondingly inverted commas are much in evidence; and by approaching particular issues from different standpoints he becomes entrapped in a fair measure of repetition. At times his grasp of the British story is a little tenuous. For example, he misinterprets certain conclusions of the Macmillan Committee (1931), which he assumes was chaired by Harold Macmillan. In sum, however, Freyer has provided a useful chronicle of the development of US and British antitrust policy during the past century.

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Issues in Contemporary Economics: Volume 1, Markets and Welfare. Edited by KENNETH J. ARROW. (London: Macmillan in association with the IEA, 1991. Pp. xxv+294. £45.00 hardback. ISBN 0 333 52477 2.)

Issues in Contemporary Economics: Volume 2, Macroeconomics and Econometrics. Edited by MARC NERLOVE. (London: Macmillan in association with the IEA, 1991. Pp. xxiv+344. £50.00 hardback. ISBN 0 333 52478 0.)

These are the first two volumes of the proceedings of the Ninth World Congress of the International Economic Association held at Athens, Greece in 1989. Conference volumes of invited papers often suffer from the defect that the authors view their contributions as a nice little sideline to the main business of publishing in journals, leading to perfunctory or puny contributions. On the other hand, such papers can give the contributor freedom from the confines of the usual refereeing process, freedom to fly rather than crawling through

quagmires. The result in these volumes is that there are many very good chapters, where the puny is the exception. In volume 1, most of the papers take the form of relatively non-technical summaries and expositions of existing work, the best contributions using the space of the format to reflect on the topic. The second volume includes more specific papers. Overall, I was pleasantly surprised by the two volumes, and found several of the contributions to be extremely valuable and useful. Between them, the two volumes contain nearly thirty contributions. I shall not attempt to discuss or mention them all. Rather, I shall tempt the reader with my own selected highlights.

Volume 1 opens with Amartya Sen's Presidential Address on 'The nature of inequality'. It is a concise masterpiece of lucid exposition. He addresses two questions: 'why equality?' and 'equality of what?' Some people have argued that 'equality' *per se* is a vacuous concept (e.g. Peter Western 'The empty idea of equality', *Harvard Law Review*, 1982). The basic problem is that equality becomes operational only when we specify a domain ('space') over which equality is to operate: liberty and the distribution of 'primary goods' (John Rawls); equality of income; equality of outcome (e.g. utility) and so on. This is the problem of 'plurality of spaces'. Applying the notion of equality to different spaces can lead to wildly different outcomes. 'If equality can speak with so many voices, can we take *any* of its demands seriously?' (page 9). Sen responds to the problem of plurality in two ways. First, he argues that it is a problem endemic to ethical debate, stemming from different views of what is of importance and value in human affairs. Second, that at some level all ethical theories which attempt to persuade and justify themselves to others must at *some* level be impartial or exhibit 'equal concern'. This designates equality as being akin to impartiality and 'universalisability'. Thus for example, Nozick's libertarian theory bases its justification of unequal outcomes in terms of equality of liberty/rights. Like nearly all writers, perhaps Sen fails to put himself in a historical context and to consider seriously the profoundly non-egalitarian philosophies based on hierarchy and natural order that held sway only a few hundred years previously. It is a bit circular to argue that in a society where most people are egalitarian in outlook, you need to justify political and moral viewpoints by appealing to equality.

Jean-Pascal Benassy's chapter on the 'Properties of a macroeconomic model with imperfect competition' is also an extremely useful chapter. Benassy provides a model with price-setting firms and wage-setting households. What differentiates it from other models is its generality. Benassy derives an equilibrium that is 'Keynesian', in the sense of being characterised by 'excess supply' in both labour and output markets. However, the model is 'Walrasian' in the sense that money is neutral. Perhaps the most interesting treatment in the chapter concerns fiscal policy. Benassy puts government expenditure into the household's utility function. He then compares the first-order conditions for optimal government expenditure in the Walrasian case with the imperfectly competitive. The result is very interesting, important, and intuitive. The level of optimal government expenditure is higher when there is imperfect competition, being increasing in a 'market power index'. The reason for this

is that the government expenditure has a macroeconomic externality in that it increases economic activity. In the Walrasian model, where the level of activity in the private sector is Pareto optimal, this effect is not welcome: with imperfect competition, however, output and employment start off 'too low' and there is some benefit from them being increased.

Jean-Francis Mertens provides a very short and readable summary of his ideas on context and history-dependence in game-theoretic equilibrium. History dependence is important, since it may invalidate backwards induction. It is of the essence of backward induction that you solve any particular sub-game without reference to the game as a whole (the context), and in particular to previous play (history). Mertens provides a lively and non-technical discussion of why history matters, which is a lot more readable than his journal articles. Other excellent contributions to the first volume include some useful surveys – notably on incomplete markets by Frank Hahn (with a comment by Roger Guesnerie), and Kotaro Suzumara's on libertarian rights and social choice.

I found the second volume, on macroeconomics and econometrics rather less impressive taken as a whole. Perhaps the most interesting papers were by Olivier Blanchard and Lawrence Summers. These deal with traditional Keynesian issues, primarily unemployment and its persistence. Summers asks the question 'should Keynesian economics dispense with the Phillips curve?' Some sort of Phillips curve (even if only short-run) is fairly standard in macroeconomic analysis. Summers argues that *hysteresis* should be central to our understanding of macroeconomic equilibrium, and that entails a rejection of the standard notion of a Phillips curve. Summers believes that the traditional Keynesian paradigm is dying (in a Kuhnian sense), and hysteresis effects call for a 'revolutionary and not merely an evolutionary change in the way Keynesian (and classical) macroeconomists view the world'. Summers believes that multiple equilibrium should be central to the Keynesian perspective. He uses an analogy with health: 'we do not talk about cycles around a fixed mean in peoples' health. Instead we talk about them being healthy or getting sick. The multiple equilibrium approach to fluctuations takes a similar view of periods of high and low employment' (page 17). He also uses a very striking example of shifting from standard to summer time. Standard economic arguments could be advanced to prove that 'The numbers attached by convention to moments when the sun is at different levels in the sky have no effect on an economy's real allocations... the time standard is a purely nominal variable that should have no effect on real outcomes' (page 13). The reasons why governments switch time are related to the fact that we have a co-ordination problem with multiple equilibria. The government chooses the best equilibrium.

Blanchard's paper examines 'two tools for analysing unemployment', i.e. the Beveridge curve (unemployment to vacancies), and the Phillips curve. He argues that 'labour markets in developed economies are characterised by large flows of workers, continual job creation and job destruction'. The Phillips and the Beveridge curves relate unemployment (the level of economic activity) to

wages and vacancies respectively. *Reallocation* factors (the pace of structural change, mismatch) lead to shifts in *both* curves. *Bargaining* factors, however, relate to the Phillips curve only (affecting the real wage for given unemployment). 'This suggests a simple empirical strategy. Look at the Beveridge and Phillips curves. Look at whether the economy is moving along those curves, or whether the curves are shifting instead. If they are shifting, look at whether both or only one are shifting. This points to the nature of the shock' (page 108). Blanchard then applies this method to recent US and European experience. In the US and UK, changes in the Natural Rate are attributed to *reallocational* factors (the growth of long-term unemployment in the UK): in Germany, to *bargaining* factors.

These selected highlights give some idea of the scope and diversity of the papers in these two volumes. Whilst some papers are not very interesting or informative, most are. These two volumes provide a snapshot of 'issues in contemporary economics' which live up to their title.

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From Catastrophe to Chaos: A General Theory of Economic Discontinuities. By J. BARKLEY ROSSER JR. (Dordrecht and London: Kluwer Academic Publishers, 1991. Pp. xi+402. £41.50 hardback, US $69.95 hardback. ISBN 0 7923 9157 8.)

The width of this work is impressive: From Hegel to Gödel, from Poincaré to Mandelbrot, from Adam Smith to Lucas and Grandmont. Sixty pages of tightly printed references reflect the enormous range of topics that the author is trying to cover in his book. Rosser's main message is that the *Weltanschauung* of a continuous and linear world or, in Alfred Marshall's words, the view that 'natura non facit saltum' cannot be upheld, either in physics and other natural sciences or in economics. Rosser takes great pains to show that in many areas of economics, discontinuities are a frequent phenomenon. His detailed knowledge of economic history as well as his insight into ecological developments help him to bring home his point when he is, for example, talking about the South Sea bubble and the Mississippi bubble around 1720, or the near disappearance of a particular trout in the Great Lakes in recent years.

Should we then forget about continuity and declare discontinuity as the new paradigm? Probably not, and we should make it clear that the author does not advocate such a view either. It would be quite foolish to overlook that consumer demand, for example, often reacts smoothly to price changes. Also, one should bear in mind that models which yield chaotic dynamics are able to produce continuous behaviour within certain ranges of the parameter values, ranges which can be fairly wide. The great merit of this book is to show that beside the smooth world of neoclassical economics there are phenomena which are inherently discontinuous. There are market crashes, there are discontinuities in intraurban systems, there are the innovative activities of Schumpeterian entrepreneurs. And we have all become witness to the rapid