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therefore be left wondering why we need post Keynesian economics.

That said, it does not detract from the general relevance of the papers presented in this volume.

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Debunking Economics – Revised and Expanded Edition: The Naked Emperor Dethroned? by Steve Keen (Zed Books, London/New York, 2011), pp. xviii + 478.

Bad times bring out the cranks and occasionally, the geniuses. *Debunking Economics* was first published in 2001, following the collapse of the dot-com bubble. The more dire state of the world economy a decade later will, perhaps, provide more fertile soil for the seed of the second edition.

Keen makes three main arguments: firstly, that mainstream neoclassical theory is internally inconsistent in its treatment of demand, supply and income distribution; secondly, that it ignores vital aspects of real-world economies, such as the heterogeneity of capital, the passage of time and uncertainty and thirdly, that it should be replaced by a range of disequilibrium models drawn largely from the evolutionary and Post-Keynesian traditions. The first is largely unchanged from the 2001 edition, while the latter two have been augmented with new material on the global financial Crisis and Keen's own models. (He also takes issue with Marxism, promises a future refutation of comparative advantage and promotes an alternative to the Copenhagen interpretation of quantum physics.) In a questionable attempt to improve readability, all equations and many diagrams have been removed, although additional diagrams are available online.

The criticism of neoclassical theory is mostly illogical and uninformed, confusing necessary and sufficient conditions; monopoly and monopsony; product and labour market competition; the CAPM and the efficient markets hypothesis; irrationality, risk aversion and loss aversion; the normal distribution and randomness. Non-sequiturs abound: redistribution may be necessary to maximise a social welfare function, therefore supply and demand do not work; profits change over time, therefore, firms should set marginal revenue above marginal cost; capital is heterogeneous, therefore, the distribution of income is independent of productivity. Occasionally, the more traditional quinella of incorrect assumptions leading to absurd conclusions makes an appearance: individual producers' demand curves sum to the market demand curve, therefore, perfect competition and monopoly yield the same outcomes. Finally, there is the theoretically true but practically inconsequential: we cannot rigorously derive a downward sloping market demand curve from individual consumers' demand curves without further assumptions, because of income effects.[1] Should we worry that an increase in the price of milk will lead to an increase in demand for milk, because dairy farmers consider it a luxury? Or that a carbon price will lead to increased carbon emissions, if the beneficiaries of the revenue have unusually energy-intense preferences?

Before dismissing *Debunking Economics* entirely, however, we should consider: Why is there a market for this kind of thing? And why does this particular author have a fair-sized corner on the market?

The answer, of course, is that the USA and much of the European economy are in the dire state referred to above, and the economics profession as a whole has failed to provide consistent warning, diagnosis or treatment. Meanwhile, Keen has been warning about debt crises in general because the 1990s, and this one in particular since 2005.It is easy to dismiss such warnings: stopped clocks are right twice a day, he was warning about Australia not the USA, what about the Kosciusko walk, etc.[2] Yet, personally, if I buy a smoke alarm, I hope that it will go off every time I burn toast, even if I never have a fire.

[1] The Sonnschein-Mantel-Debreau conditions. See the review of the first edition in the June 2002 issue.

[2] In 2008, Keen bet Rory Robertson that Australian house prices would fall at least 40% peak to trough, with the loser to walk to the summit. Keen argues that the bet had no time limit, but did the walk in 2010.

And if a house down the block burns down, I will pay more attention to the few eccentrics who were yelling 'fire, fire', even if they were pointing at *my* house, and less attention to those who sold the fire truck because we had not had a fire in a while, and were not much use at carrying buckets either.

This brings us to the creative side of Keen's work: a series of disequilibrium macroeconomic models based on financial stocks and flows, inspired by Hyman Minsky and Richard Goodwin. These are capable of generating endogenous build-ups in the debt/GDP ratio, followed by crashes, without the addition of any exogenous shocks. I am not quite sure whether we are supposed to be worried about rising debt because the models predict it will lead to a bust, or to trust the models because they predict that rising debt will lead to a bust, but it is a nice property for a model to have.

Of course, they sacrifice much that is considered essential by modern standards: rational expectations, optimising (or indeed any) microfoundations and even interest rate determination. But given that the one DSGE model to rule them all has been such a long time coming, and seems much further off now than it did 5 years ago, why not try starting from here?

The details, however, do not seem watertight. One oft-repeated claim, buttressed by a lengthy passage from Minsky, is that aggregate demand is equal to income *plus* the change in debt, so debt creation is essential for growth. This may be useful as a stylised dynamic modelling assumption, analogous to a cash-in-advance constraint, but is patently false when asserted unconditionally and applied to the standard national accounting definitions.[3]

Another red flag is empirical: the debt buildup and crash has surprisingly little in the way of historical precedent. Looking at Keen's series for the USA and Australia, even the Great Depression is a bad fit: the private debt/GDP ratio was fairly stable for most of the 1920s and ballooned only *after* the Depression hit. Only the Australian land boom and bust of the 1880s and 90s followed the debt bubble trajectory.

I have no idea whether the future will belong to Keen's breed of aggregate disequilibrium model, or the agent-based variety, or the New Keynesian model with a few extra tweaks, or day/night markets, or something else entirely. If I did, I would be working on it rather than writing this review, a test that should be applied to all such prophets.

Still, I would hazard a guess that the Lucas critique will remain alive – that models which add financial detail at the expense of rational (or nearly so) expectations may turn out to be good early warning systems, but poor at analysing alternative policy regimes. But if it remains hard to walk and chew this particular piece of gum at the same time, what should we do about policy? And if mainstream economic theory was not particularly useful in predicting the Crisis, can it be any help at cleaning up the mess and making sure it does not happen again?

Well, finance theory says: financial intermediaries that borrow short and lend long are susceptible to runs. But guaranteeing their liabilities (implicitly or explicitly) creates moral hazard, especially, when the principals are protected by limited liability and their agents only face upside risk. And the macroeconomic literature provides several options – level targeting, currency depreciation and good old-fashioned fiscal policy – for stimulating aggregate demand when short-term interest rates are at zero. That should give us something to go on, even if we might like the finance and macro strands to be knit together more tightly than they are.

I do not recommend this book. It is full of nonsense, and a dull read. If any of my more distinguished readers find themselves judging Professor Keen's grant applications in future, however, please do not hold it against him. After all, Churchill was right about Hitler, even though he was wrong about almost everything else.

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[3]Wynne Godley, who surprisingly rates only one index entry, bases his models on the assumption that demand is equal to income for the whole economy, but not necessarily for the household, firm and government sectors individually.