

Letting the fox guard the chickens? Macro-  
economic theory after the crisis  
*MAFIN, Reykjavik, September 2010*

Paul Ormerod

Volterra Consulting, London; Dept of Anthropology,  
University of Durham; Extreme Events in Human  
Behaviour Programme, IIASA, Austria

# Overview

- the ideas at the heart of modern macroeconomics which provided the intellectual justification of the economic policies of the 10 to 15 years leading up to the crash
- The dominant paradigm in macroeconomic theory over the past 30 years has been that of rational agents making optimal decisions under the assumption that they form their expectations about the future rationally - the rational agent using rational expectations, or RARE for short
- It is this paradigm which must be rejected to build a realistic macroeconomic theory
- Agents are myopic, they consistently get things wrong, they fail to learn, they react intuitively. NB the central bank is also an agent
- Knightian uncertainty is more prevalent than risk
- Systemic risk is fundamental – agents operate on networks

# Intellectual complacency

- American Economic Association's new journal *Macroeconomics*. First issue January 2009 Michael Woodford 'Convergence in Macroeconomics: Elements of the New Synthesis' : "it is now widely agreed that macroeconomic analysis should employ models with coherent intertemporal general equilibrium foundations"
- Oliver Blanchard, MIT Working Paper August 2008: 'For a long while after the explosion of macroeconomics in the 1970s, the field looked like a battlefield. Over time however, *largely because facts do not go away*, a largely shared vision both of fluctuations and of methodology has emerged..... **The state of macro is good'**

# Intellectual influence

- Blanchard August 2008: 'DSGE models have become ubiquitous. Dozens of teams of researchers are involved in their construction. Nearly every central bank has one, or wants to have one. They are used to evaluate policy rules..... macroeconomics is going through a period of great progress'
- When policy makers proclaimed the 'end to boom and bust' [Gordon Brown], they had the full intellectual authority of the macro-economic establishment behind them
- They finally thought they had an equilibrium theory with micro-foundations which worked

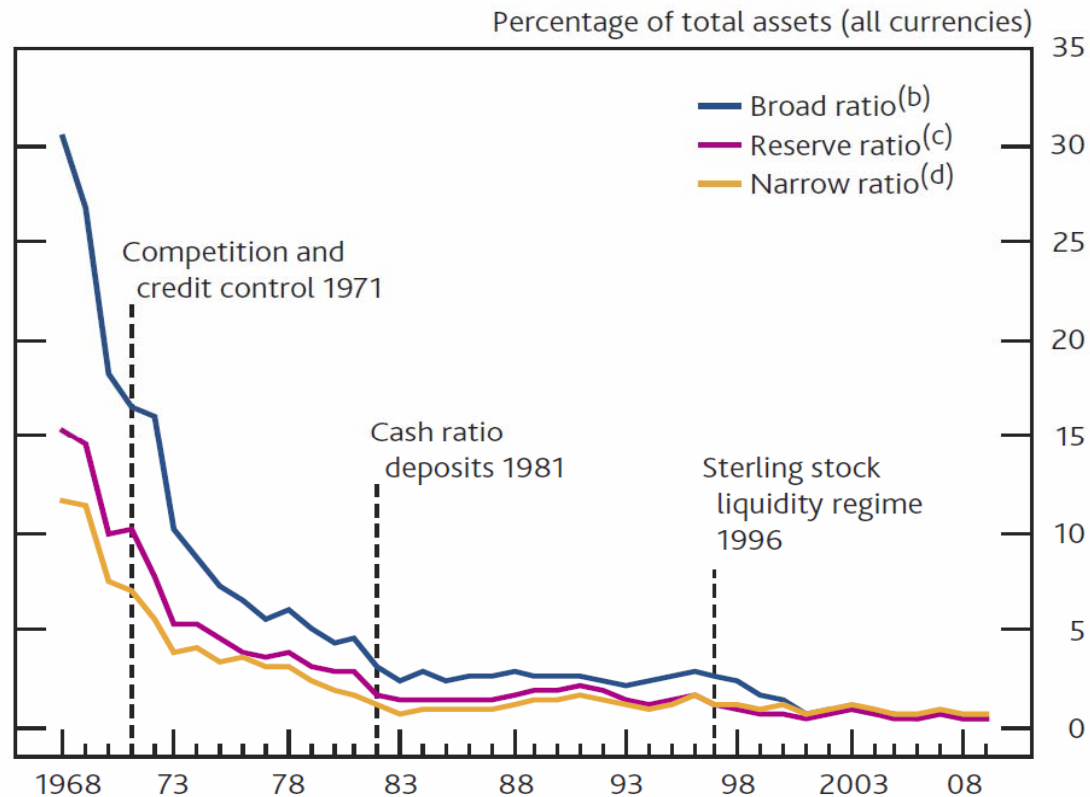
# What happened next?

- In the week of 15 September 2008, capitalism nearly collapsed
- It was rescued, at the cost of a major recession in 2009
- The jury is still out on the eventual recovery

# What did the authorities do?

- They ditched all the RARE macroeconomic theory of the past 30 years
- They looked back to the 1930s and guessed what might work now
- They relied on direct intervention and quantitative controls
- The Americans:
  - Nationalised the main mortgage companies
  - Effectively nationalised AIG
  - Forced mergers of giant retail banks
  - Guaranteed money market funds
  - Issued large amounts of non-interest bearing perpetual bonds (i.e. money)

## Sterling liquid assets relative to total asset holdings of UK banking sector<sup>(a)</sup>



Source: Bank calculations.

(a) 2008 data are as of end-August 2008.

(b) Cash + Bank of England balances + money at call + eligible bills + UK gilts.

(c) Proxied by: Bank of England balances + money at call + eligible bills.

(d) Cash + Bank of England balances + eligible bills.

# Why did the authorities allow liquidity to be at such low levels?

- They deluded themselves that the massive amounts of loans and debts had been priced rationally and hence optimally.
- They believed, in the true spirit of the RARE view of the world, that agents had used the correct model in setting these prices, whereas as we have seen they had not
- The possibility of a systemic collapse, of a cascade of defaults across the system, was never envisaged at all



# Some macro theory (long) before RARE

- Frank Knight: risk and uncertainty – exotic derivatives, securitisation, counterparty risk of default, much closer to uncertainty than risk
- Keynes stressed uncertainty not just in the *General Theory* but in *Treatise on Probability*
- the outstanding fact is the extreme precariousness of the basis of knowledge on which our estimates of prospective yield [of a new investment] have to be made ... If we speak frankly, we have to admit that our basis of knowledge for estimating the yield ten years hence of a railway, a copper mine, a textile factory, the goodwill of a patent medicine, an Atlantic liner, a building in the City of London amounts to little and sometimes to nothing; or even five years hence': Keynes *General Theory*
- Hayek: inherent limits to knowledge
- Hayek and the business cycle: Firms and governments operate in such a complex environment that not only are their expectations often proved wrong, but they are unable to learn sufficient from the past in order to avoid the same mistake in future. The level of uncertainty is so high that even the central bank cannot learn to offset expectations by changes in monetary policy in order to smooth out the cycle and restore equilibrium.

# Networks

- Huge amount of theory and empirical work on networks of which economists are in general completely unaware
- Probability of local shocks being transmitted on a global scale increases as an evolving network becomes more connected (Ormerod and Colbaugh, *JASSS* 2006)

# And there are micro-foundations!

- *Rational models are psychologically unrealistic..... the central characteristic of agents is not that they reason poorly, but that they often act intuitively. And the behavior of these agents is not guided by what they are able to compute, but by what they happen to see at a given moment'-- Daniel Kahneman, Nobel economics lecture, 2003*
- Building upon a model of ignorance is more effective than relaxing a model of omniscience
- Very simple interacting agents can yielding complex collective patterns
- This provides a better basis for understanding societies as open, non-equilibrium systems under constant flux.
- It deliberately assumes as little as possible, in order to identify the most general characteristics first, which can then reveal the effects of making agent behaviour incrementally more complicated

# Key 'stylised facts' about recessions

- Most recessions are very short, 1900-2009, 90 per cent last 1 or 2 years
- Size distribution follows Weibull distribution with probability of exit falling as size increases
- Weak positive first-order autocorrelation in growth rates
- Weak evidence in frequency domain of cycle of 5-9 years
- Positive cross-correlations of growth rates of industries/firms