



# Scientific Economics:

new vs old economics, or  
neoclassical economics as a pseudoscience

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***Lecture and discussion at the  
University of Pireas, Greece  
12th April 2016***

# Outline

- New versus old economics
- Economics as a science
- Mathematical & statistical neoclassical economics as pseudoscience – a cargo cult?
- The Great Recession as a prediction test for economic theory
- The rhetoric of “the free market” and use of neoclassical ideology for political ends

# Outline

or

“Space-Time Economics” (STE)  
versus “Neoclassical Economics”

# Climate change policy and the new economics

Critical differences	Old economics	New economics
<b>ethics and society</b>	<b>Utilitarian:</b> optimising rational self-interested individuals	<b>Observed:</b> satisficing altruistic punishers in evolving social groups
<b>time and equilibrium</b>	<b>Full employment forever:</b> higher GDP growth ruled out by assumption; no double dividend for policy	<b>Path-dependency:</b> many unused resources and new business plans in response to threats
<b>uncertainty</b>	<b>Normal:</b> distributions derived from the past; use of “certainty equivalence”	<b>Non-linear:</b> catastrophic surprises are inherent in complex systems
<b>technology</b>	<b>Exogenous:</b> CGE and growth models have no feedbacks via technology	<b>Induced:</b> by climate policies

# Treatment of money:

## STE

## neoclassical

- money is not in General Equilibrium theory except as a numeraire
- central banks can control money supply
- 2008 financial shock treated as external to the economy

- money is at the heart of the economy
- money is endogenous and created by commercial banks
- the 15/09/2008 Lehman bankruptcy reveals a collapse of money supply (some forms - derivatives - revealed as worthless)

# Treatment of location effects:

## STE

## neoclassical

- place of pollution and transmission of effects over distance is critical
- climate and geography matter
- diffusion of effects usually makes clean-up impossible

- no treatment of place in elementary theory
- all activity at one point in space
- no transport costs
- no diffusion effects

# Treatment of temporal effects:

## STE

## neoclassical

- non-linear systems assumed with chaotic behaviour
- time and duration of pollution and effects intrinsic to problem
- dynamic analysis
- irreversibilities (through accumulation of stocks)

- existence of equilibrium assumed
- no treatment of time in elementary theory
- static analysis
- implicit symmetry in timing, and reverse flows if costs change

# Theoretical consistency:

## STE

## neoclassical

- Highly context specific
- the “new mainstream”
- draws on practical solutions of ecological problems

- Coherent and convincing theory (really?)
- generally applied to many problems (too easy?)
- draws on massive body of economic theory



# Contrasting paradigms

## Old Economics

- neoclassical theory and game theory
- division (calculus)
- “always right” (optimization)
- imaginary discipline
- performativity (the theory shapes the world)
- hubris (arrogance, “social dictator”)
- data mining

## New Economics

- STE & game theory & systems analysis
- integrality
- uncertainty (simulation)
- real (humble) science
- problem-observe-model-understand-act
- reflexivity
- method: start with the problem

# Outline

- Economics as a science

# Science and Economic Science

Science ... “is a systematic enterprise that builds and organizes knowledge in the form of testable explanations and predictions about the universe.”

Wikipedia definition (all web sources 17&18 April 2013)

“Economics is the study of human activity undertaken with the expectation of reward

- includes the study of how social groups influence the motivations behind economic activities
- then manage the activities themselves
- and then deal with the consequences, both good and bad”

Barker (1996) *Space-Time Economics*, Cambridge Econometrics

# Economic Science: new versus old

“ Economics is the study of human activity undertaken with the expectation of reward”

Compare this with...

Robbins' neoclassical synthesis "the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses" (*The Nature and Significance of Economic Science*, 1932, p. 16).

# Outline

- Mathematical & statistical neoclassical economics as pseudoscience – a cargo cult?

# Economics as positive and normative science

- “The idea that there is something called 'science' which detects truth faultlessly and cannot have anything to do with valuations is an absurd byproduct of the now largely discarded logical positivism.” Kenneth E. Boulding (1986), "What Went Wrong with Economics?" *The American Economist* 30 (Spring): 5-12, p. 9.

# Neoclassical economists' views of neoclassical economics

Analyses that combine “assumptions of maximizing behavior, stable preferences, and market equilibrium, used relentlessly and unflinchingly.” Gary S. Becker, *The Economic Approach to Human Behavior*, Chicago, 1976, 5.

- “... a scientific research program that generates economic theories. Its fundamental assumptions are not open to discussion ... [These include] ...
  1. People have rational preferences among outcomes.
  2. Individuals maximize utility and firms maximize profits.
  3. People act independently on the basis of full and relevant information.”

E. Roy Weintraub

<http://www.econlib.org/library/Enc1/NeoclassicalEconomics.html>

# ...more from E. Roy Weintraub

<http://www.econlib.org/library/Enc1/NeoclassicalEconomics.html>

- Non-neoclassical economists “are regarded by mainstream neoclassical economists as defenders of lost causes or as kooks, misguided critics, and antiscientific oddballs.”
- “[Their] status ... in the economics departments in English-speaking universities is similar to that of flat-earthers in geography departments: it is safer to voice such opinions after one has tenure, if at all.”



# ... even more from E. Roy Weintraub

<http://www.econlib.org/library/Enc1/NeoclassicalEconomics.html>

- “the success of neoclassical economics is connected to the "scientificization" or "mathematization" of economics in the twentieth century..”
- “The value of neoclassical economics can be assessed in the collection of truths to which we are led by its light.”

However economics, by embracing the calculus, does not make itself scientific or true, only valid if mathematically correct

# What is “pseudoscience”?

- “A pretended or spurious science; a collection of related beliefs about the world mistakenly regarded as being based on scientific method or as having the status that scientific truths now have.” OED
- “... [A] body of knowledge can reasonably be called pseudoscientific when it is presented as consistent with the norms of scientific research; while failing to meet these norms.”  
Wikipedia

# Neoclassical economics as pseudoscience

- “Economists have consistently lagged behind physics in developing and elaborating metaphors; they have freeloaded [off] physicists for their inspiration, and appropriated it in a shoddy slipshod manner.”

Philip Mirowski (1989), *More Heat Than Light: Economics as Social Physics, Physics as Nature's Economics*, p. 108)

# Neoclassical economics as a cargo-cult

- “At its academic levels economics has become largely a cargo-cult science, and has stopped doing real measurement.”

McCloskey (2013 ), “What Boulding said went wrong with economics, a quarter century on”, Routledge vol. ed. Wilfred Dolfsma.

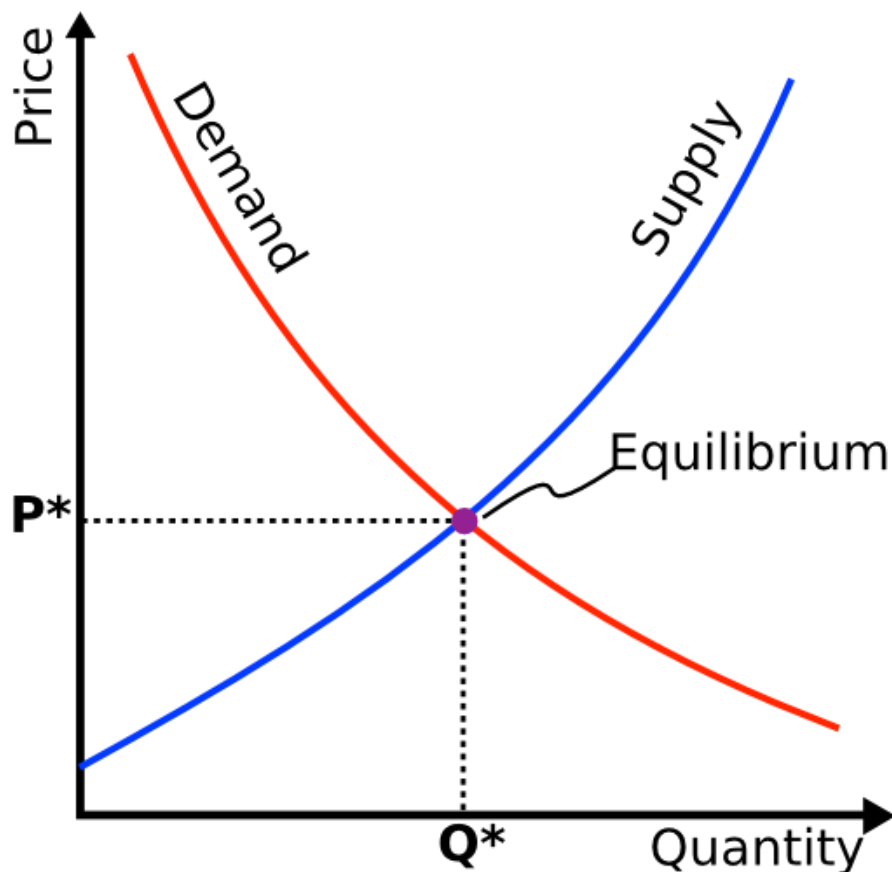
- “A real science, or any intelligent inquiry into the world,...must think and it must look. It must theorize and must observe. Formalize and record. Both. That's obvious and elementary”

McCloskey (2005), “The Trouble with Mathematics and Statistics” in Economics History of Economic Ideas XIII (3,2005): 85-102



# Demand-supply curves as pseudoscience

1. are demand & supply continuous? - no
2. where? when? how long a period? - unspecified
3. homogeneous good & single price? - no



4. how are individual demands & supplies aggregated into the market? - problem
5. why no uncertainty? - highly uncertain
6. stability? - not so
7. what is imaginary & what is real & measurable? one price!
8. coverage? – partial
9. Supply and demand are not symmetrical and independent

# So neoclassical economics is not scientific

- It requires “agents” (people, companies), .. to be rational and have full knowledge, when we know that they are not always rational and do not have full knowledge
- It excludes social groupings (agents act independently), when these are pervasive in society
- It fixes preferences (and technology) i.e. it excludes evolution, when both preferences and technology evolve, sometimes rapidly
- It proceeds by relaxing assumptions one at a time but always reverts to the intellectual sink of equilibrium, without simulating real-world systems

# Summary of neoclassical economics

In summary neoclassical economic theory adopts implausible assumptions, aggregate concepts such as output or price without an adequate empirical basis, a deterministic approach and a reductionist approach to knowledge.

...relying on obsolete ethics (utilitarianism), obsolete physics (deterministic 19thC mechanics) and unsuitable mathematics (calculus)



# Outline

- The Great Recession as a prediction test for economic theory

# The forecasting test: prediction & explanation of the 2008 - global financial crisis

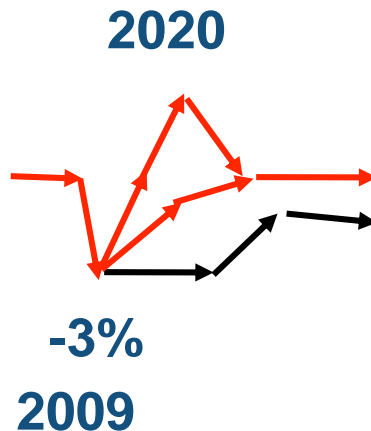
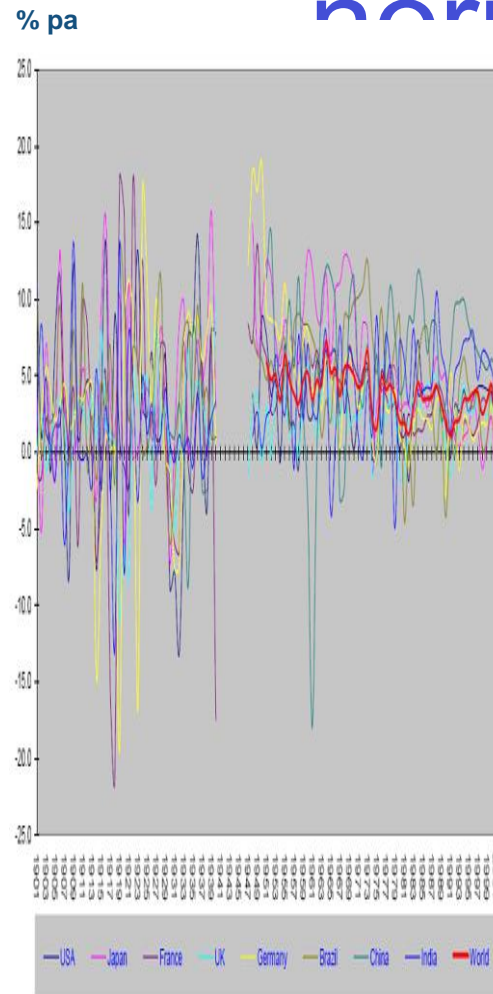
- Neoclassical economics failed to predict the crisis, failed to explain it and failed to predict the outcome
- Their models (OECD, IMF, World Bank) all included a return to equilibrium level and growth of GDP: it did not happen and it has not happened

# Forecasting and predicting

“Economic hypotheses can be judged by their coherence, their explanatory power, their plausibility and, ultimately, their ability to predict”. Science should produce falsifiable theories, which yield empirical predictions of real-world variables.

Mark Blaug (1997), “Ugly currents in modern economics”. Policy Options, September , pp. 3-8.

# A Post Keynesian view from 2009: after the crisis - return to normal or what?



Return to normal,  
without and with long-  
term loss of output

Liquidity trap with  
eventual return to low  
growth

All projections will  
exhibit more  
volatility than 1950-  
2006

# Solving the global economic crisis

- Fix exchange rates
- Reduce the public debt over the long term, when the economy is at full employment
  - allow higher inflation
  - let markets work via proper mark-to-market accounting for toxic debt and orderly bankruptcy, protecting small depositors
- Promote green social investment for full employment via fiscal policy & nationalised green bank

# Conclusion

- The rhetoric of “the free market” and use of neoclassical ideology for political ends

# Neoclassical economic thinking

- Neoclassical economics leads to Neoclassical economic thinking such as:
  - “Greed is good”
  - “All you need is money because money buys you everything”
  - A macroeconomic policy stance of “self-interest yields maximum social welfare under free markets”, with (often instated) preconditions of no “externalities” or imperfections, and complete markets & full information available for all
- These presumptions are treated as universal: wherever, whenever, forever
- ... and value-free!

# The rhetoric of “the free market”

- Adam Smith’s economics was in the context of regulations and moral behaviour, with banks going bankrupt if insolvent
- The 2008 transfer of private debt and risk to the public sector revealed that “the free market” was political rhetoric
- The post-crisis “austerity” policies are similarly based on ideology not economics and should be reversed



# Websites

- [www.camecon.com](http://www.camecon.com)
- [www.4cmr.group.ac.uk](http://www.4cmr.group.ac.uk)
- [www.tyndall.ac.uk](http://www.tyndall.ac.uk)