



Institute  
and Faculty  
of Actuaries

# The Making of Neoclassical Economics

8 April 2021

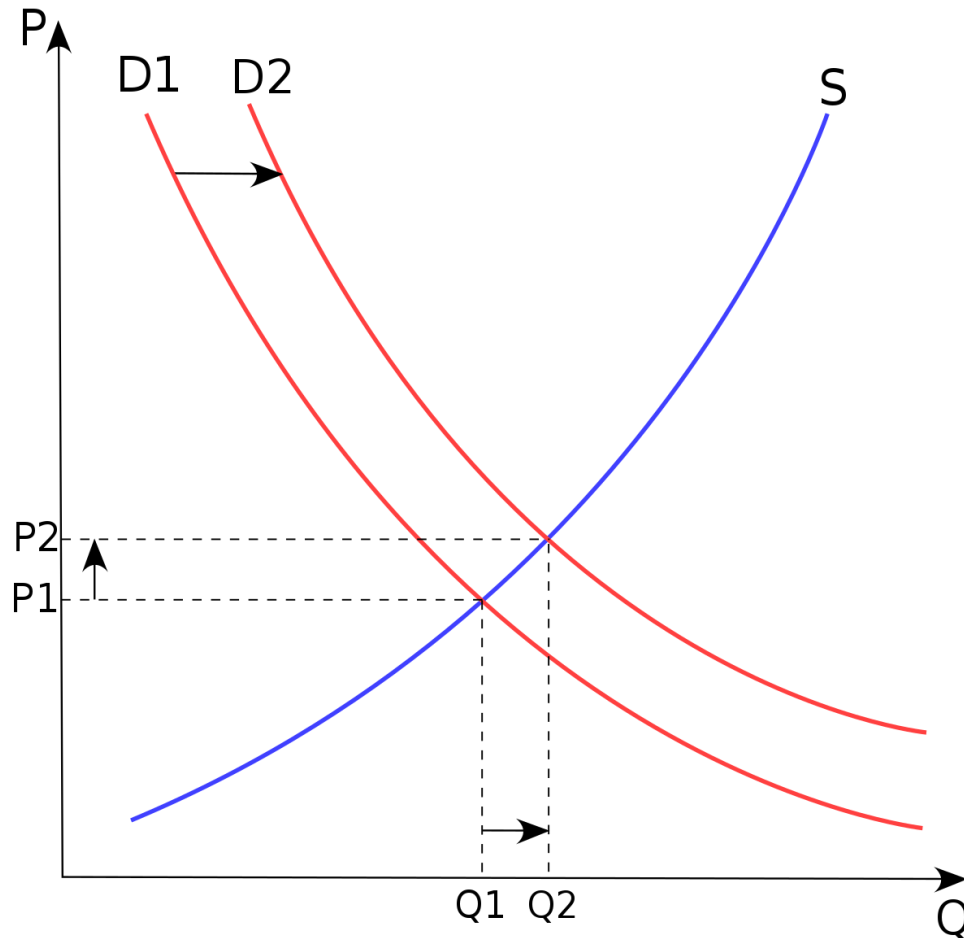
Oliver Bettis FIA FCII



# Contents

1. **My introduction to economics.**
2. Critique of neoclassical economics – e.g. Sloman 10<sup>th</sup> Edition.
3. What is going on here? “The Making of Neoclassical Economics”
4. Conclusions

# My story



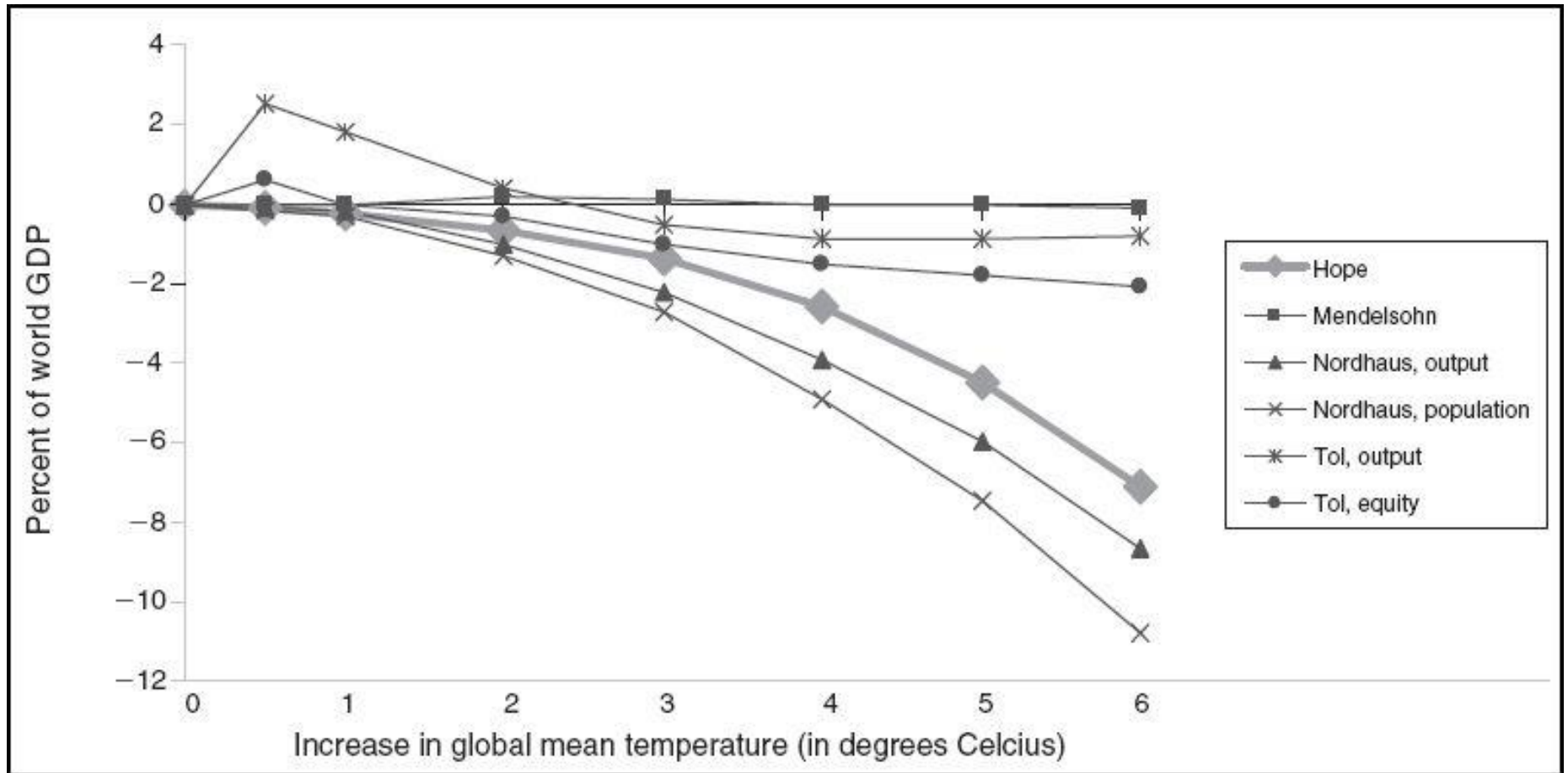
- Took actuarial exams starting in 1999/2000.
- Economics was my favourite subject.
- Supply-demand curves, maximising expected utility, theory of competition, comparative advantage – all made perfect intuitive sense.
- But later...

# **My story: 2007/8 – Climate Change 2008/9 – Financial Crisis**

## **Climate Change**

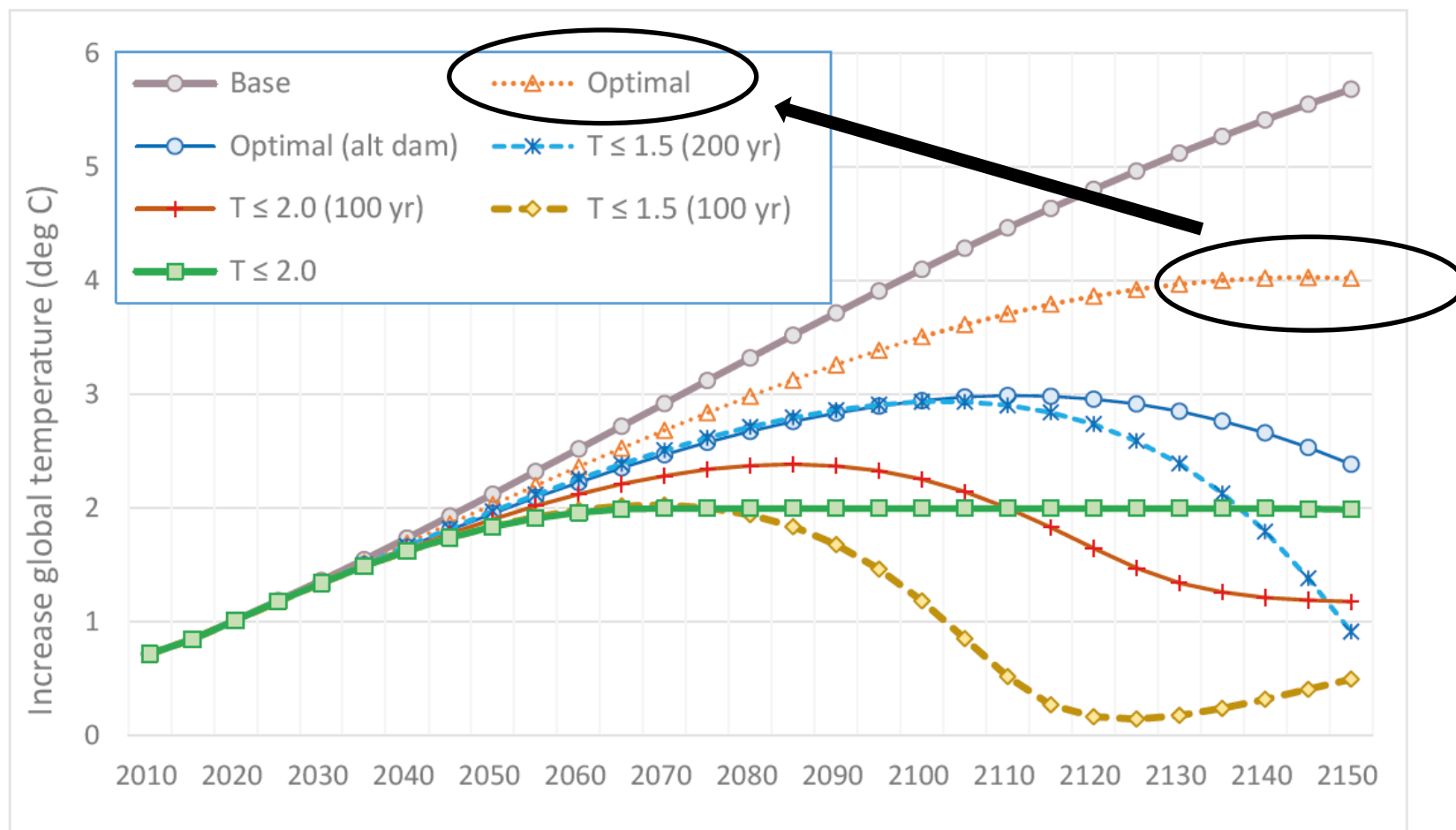
- 2007 Climate Change working party led by Trevor Maynard – with Nick Silver, collaboration with top climate scientists Dave Stainforth, Leonard Smith, Stephan Harrison.
- I read about the economics of climate change: William Nordhaus and critiques by Nicholas Stern, Martin Weitzman.

# From Nicholas Stern, 2008



- The chart summarises economic model output from 4 economists.
- Maximum GDP loss at 6°C warming is less than 12%.

# William Nordhaus, 2018 (from economics Nobel Prize winning speech)



Source: "Climate Change: The Ultimate Challenge for Economics" William D. Nordhaus, Yale University Nobel Lecture in Economic Sciences, 8<sup>th</sup> December 2018

**From 2008 mainstream economics came under scrutiny due to the financial crisis.**

## **6<sup>th</sup> November 2008\***

“The Queen spoke for the nation yesterday when she asked how the credit crunch could have taken so many economics experts by surprise.

“She described the financial crisis as 'awful' and inquired that, since the meltdown was so massive, 'Why did nobody notice it?'”



<http://www.dailymail.co.uk/news/article-1083290/Its-awful--Why-did-coming--The-Queen-gives-verdict-global-credit-crunch.html#ixzz2YoV8VGec>

# The financial crisis was also a crisis for economics

## Adair Turner, on the need to “reconstruct” economics\*

- “... one oversimplified strand [of economics] dominated in the pre-crisis years”
- “... do we really need, as Skidelsky argues, to “reconstruct economics”? My conclusion is that we do.”

## John Maynard Keynes

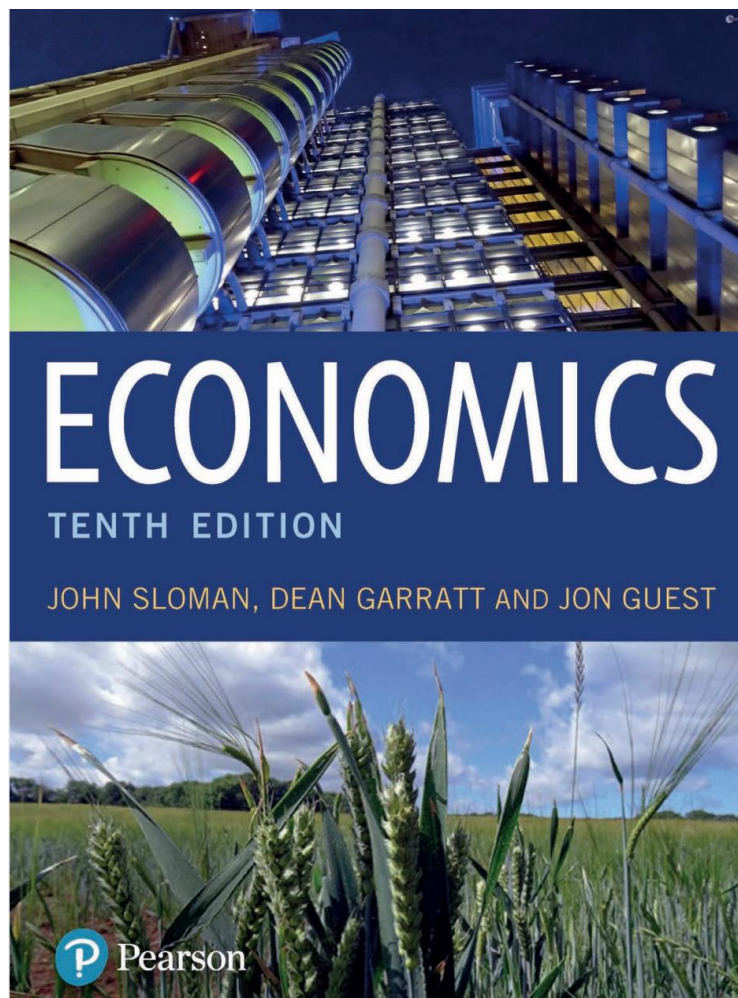
“Practical men who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist.”



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# The standard economics textbook for actuarial exams, published 2018



# Sloman 10<sup>th</sup> Edition - Contents

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# Discussion of alternative approaches in Sloman

Sloman has a section on the Debates about the state of macroeconomics.

- Problems with relying on micro foundations, based on assumption of rational agents.
- Fallacy of composition.
- “Post-Keynesians and other heterodox economists also challenge most of the microeconomic assumptions on which other more ‘mainstream’ macroeconomic theories are based.”

This section is 4 pages out of 861.

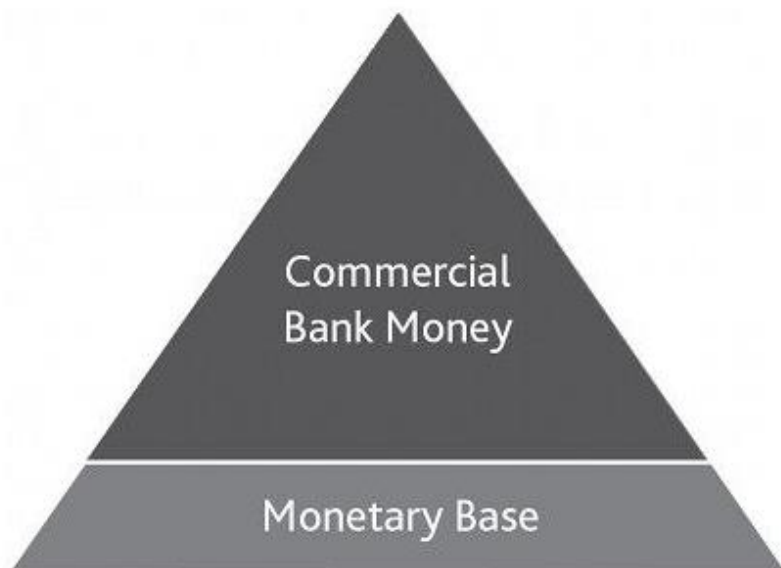
# Problems with standard economics textbooks

Three examples:

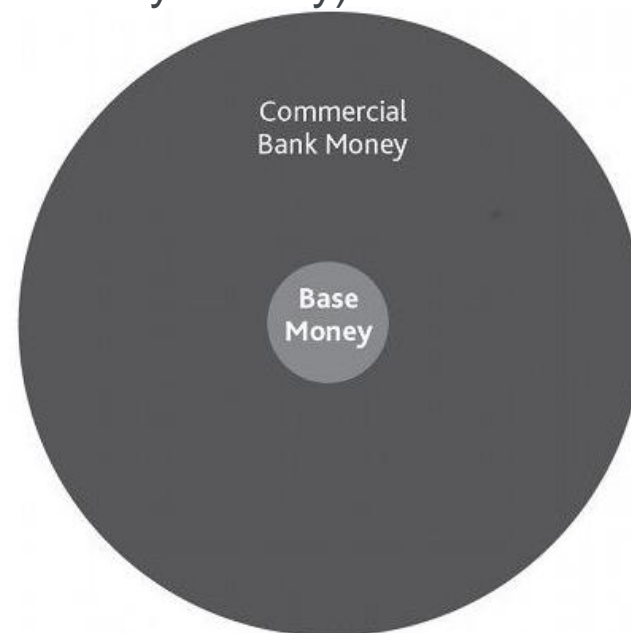
1. Banking
2. Supply curves.
3. Market demand curves.

# Banking: Fractional reserve v Endogenous money explanations

## Fractional Reserve Banking



## Endogenous Money Theory (the most fundamental part of Modern Monetary Theory)

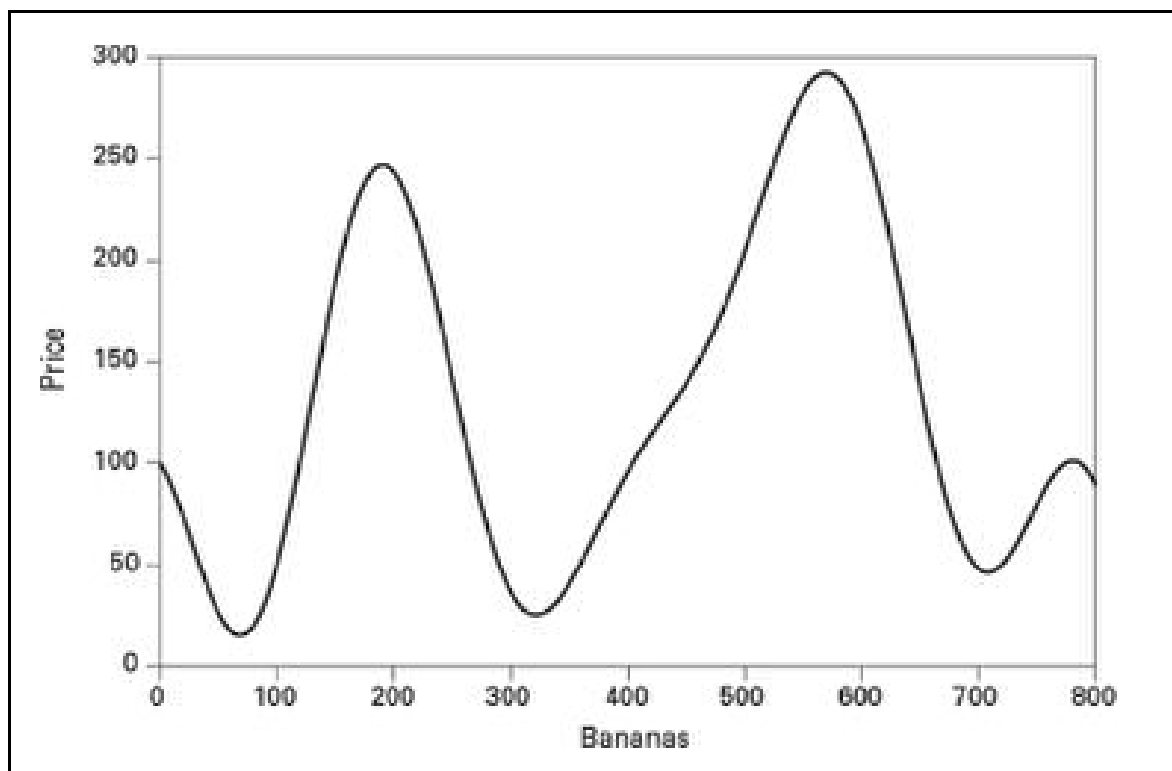


- Standard explanation says that banks need to take in deposits before making loans.
- This is incorrect in the modern system with fully electronic money.

# Market Supply Curves

- Real world data does not support the upward sloping supply curve
- Engineers design factories to work at near optimal efficiency at a wide range of outputs
- Likely that real supply curve is flat or even slightly downward sloping

# Market demand curves



- Demand curves slope downwards for an individual.
- Aggregating these to the market does not lead to simple downward sloping demand curves – “fallacy of composition”.
- This was first proved in 1953.
- The market demand curve can have any shape, apart from doubling back on itself.

When this was discovered by neoclassical economists, instead of abandoning the theory, they chose to build their models based on a ‘representative agent’.



# Problems with standard economics textbooks

Recap:

1. Description of fractional reserve banking is outdated and incorrect.
2. Supply curves are not upward sloping.
3. Market demand curves do not slope down smoothly.

Other examples:

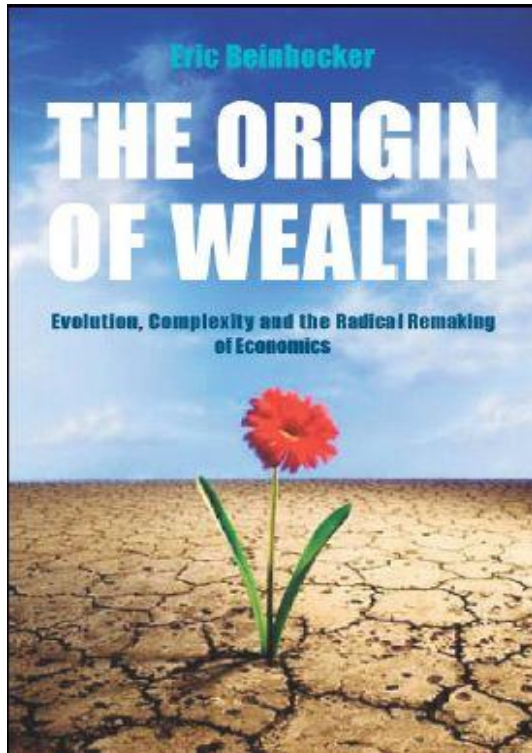
- People deviate from rational behaviour, anyway defining “rational” in the theory is problematic (normative).
- Economy is a complex system not an equilibrium system.
- Theory ignores energy and conflicts with thermodynamics (see The Origin of Wealth by Eric Beinhocker).
- Comparative advantage is not a good basis for trade theory.
- Firms do not maximise profits when  $\text{marginal cost} = \text{marginal revenue}$ .
- Etc etc.

# The standard market Supply-Demand curve picture is incorrect



- If the supply-demand curve chart is a bad model of reality, a large proportion of neoclassical economics falls away.
- This may explain why it's so resistant to change. Change is too fundamental.

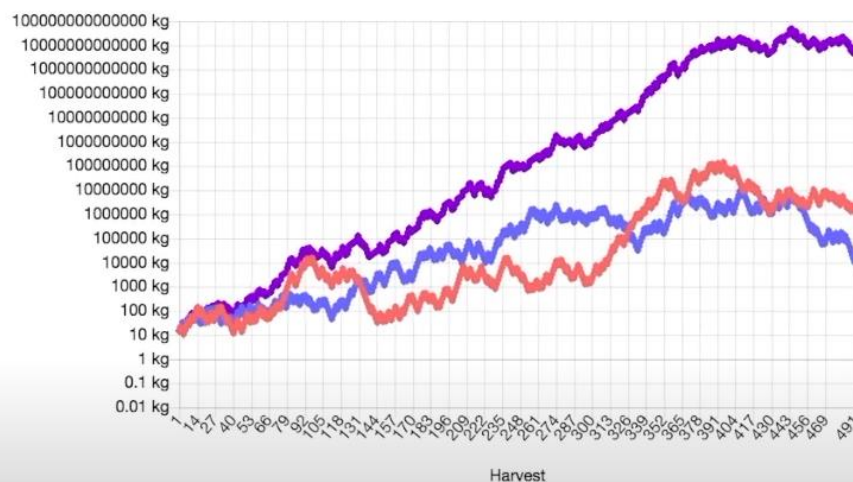
# The history of neoclassical economics



- Neo-classical economics developed from classical economics of Adam Smith, David Ricardo etc
- 19<sup>th</sup> century economists borrowed from the physics of the time to mathematise economics.
- They wanted to make economics more scientific – but the effect was the opposite.

# Neoclassical economics understates the benefit of cooperating

Pooling and sharing not only reduces risk. It increases growth for everybody involved.



■ Ann (Cooperating): 8929080000000.00 ■ Bill (Cooperating): 8929080000000.00  
■ Ann (Alone): 2330609.60 ■ Bill (Alone): 24071.89

The Farmers' Fable

<https://www.youtube.com/watch?v=sR2JxfiH7gk>

This concept arises from Ergodicity Economics

<https://ergodicityeconomics.com/>

<https://lml.org.uk/>

# Sloman 10<sup>th</sup> Edition - Contents

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To replace elements that have been proved false a large proportion of the standard textbooks will change over the coming years.

# Natural scientists and neoclassical economics

- Few natural scientists have explored neoclassical economics.
- Those that have tend to be less than impressed, in my experience.
- For example, Robert May (1936 – 2020) who was Chief Scientific Adviser to the UK Government and President of the Royal Society. In a public meeting he remarked that debate among economists about their subject was more akin to theological argument than scientific.

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# The Scientific Method



**“All swans ever seen are white, therefore all swans are white.”** was a proverb for the ancient Greeks and for Europeans during the middle ages, until black swans were discovered in Australia.

- The scientific method relies on proof by induction
- All scientific knowledge is provisional
- Unlike mathematical/logical proof by deduction



# “The methodology of positive economics”, Milton Friedman 1953

- Facts = positive, Values = normative
- Very influential essay on methodology in economics
- Friedman said, the origins of assumptions don't matter, all that matters is a theory's predictive power.

*“Truly important and significant hypotheses will be found to have "assumptions" that are wildly inaccurate descriptive representations of reality, and, in general, the more significant the theory, the more unrealistic the assumptions (in this sense).”*

- But Friedman neglected that there are two kinds of assumptions: negligibility assumptions and domain assumptions.

# Mark Carney's 1<sup>st</sup> Reith Lecture 2<sup>nd</sup> Dec 2020

## From Moral to Market Sentiments

- “Over the centuries, there have been two broad schools of thought about what determines economic value. Objective and subjective.
- Objective theories contend that the underlying value of a product is derived from how that product is produced, and those theories focus on how that, in turn, affects wages, profits and rents.
- Proponents of objective value theory span Aristotle, Adam Smith, David Ricardo and Karl Marx. These last three classical economists ... placed the growth and distribution of value squarely in the context of the enormous social and technological changes then underway.
- **All three would have found profoundly alien the view, widespread today, that economics is a neutral, technical discipline to be pursued in isolation of such dynamics.”**  
[my emphasis]

Mark Carney 2020 Reith Lectures transcript, 2<sup>nd</sup> December 2020

# “The Making of Neoclassical Economics” by John F. Henry, published 1990

- Covers the period from the classical economists of the late 18<sup>th</sup> century to 1900-14, when neoclassical economics dominated.
  - The classical economists such as Adam Smith, David Ricardo and Karl Marx thought in terms of class interests.
  - Development of economic theory was closely bound to the development of capitalism.
  - The exchange theory of value became dominant because it was useful for political arguments, not because of any empirical support.
  - *In other words, **Economics** always has been **Political Economy**.*
-

# Where Henry gets it wrong

- Henry suggests that the labour theory of value is “scientific”, as per Karl Marx.
- The labour theory of value is false – no more scientific than the exchange theory of value.
- Marxists come from the same roots as neoclassicals, they both miss the importance of energy. This was picked up by some by the early 20<sup>th</sup> century (e.g. chemist Frederick Soddy).
- They also miss the importance of seeing the economy as a complex system. (But systems science only developed from 2<sup>nd</sup> half of 20<sup>th</sup> century, and mostly since 1980, it needs computers).

# The Making of Neoclassical Economics – in a nutshell

- During the time of Adam Smith British society was breaking with the feudal system.
  - Economists supported the scientific revolution and challenged the established order.
  - During the 19<sup>th</sup> century the economic system matured and power of capital owners grew. Their interests changed from attacking the status quo to defending it.
  - Economics developed in tandem to serve the requirements of those who benefited from the status quo.
  - By the end of the 19<sup>th</sup> century neoclassical economics was dominant because it was useful, not because it was correct.
-

# John F. Henry's argument

- “What we find , then , is that society’s position on normalcy or decency will be determined largely by the social institutions and ideas that are dominant . These ideas form the basic judgment as to what is rational . Yet these same ideas , as they establish the criteria of criticism , are themselves held to be sacrosanct , beyond criticism .”
- “Essentially , once established , a social order limits ideology – and limits those institutions responsible for the development and dissemination of that ideology to that which is amenable to society . What exists establishes the standards of ‘ normality ’ ; all else is outside the pale . Questions concerning those standards are raised when the social order malfunctions , where social effects are of such enormous impact that conventional , ‘ normal ’ arguments simply are not tenable ( as in the 1930s ) . But , in general , a social process is at work that induces acceptance of ideas conducive to the continuation of a given society and limits ideology to the conventional .”

John F. Henry “The Making of Neoclassical Economics”

# Utilitarianism – Jeremy Bentham

- “For Bentham , the community is a ‘ fiction . ’ Rather than being comprised of classes held together by the underlying relations of society , the community is nothing more than a collection of individuals . Hence , social interest is nothing more than the sum of individual interests . One cannot , therefore , speak of any objective social interests existing at any point in time , but only of individual interests independent of fictitious society . And who is the best judge of such interests ? Obviously , the individual .”
- In sum , Bentham’s general theory takes certain aspects of capitalist organization and generalizes those aspects into an ideological system that precludes investigation into that society . For Bentham , the economic calculations of the profit - maximizing businessman are the standard for all of society . And these standards are true for all of history , for all forms of social organization . In other words , all societies are essentially capitalist , and all people are businessmen ( or , at a minimum , proto - businessmen ) . Hence the social relationships existing in any form of social organization are concealed behind the exchange values extant , and only surface phenomena can be examined .”

John F. Henry, “The Making of Neoclassical Economics” p93

# Architects of neoclassical economics

## e.g. William Stanley Jevons

- “By concentrating on exchange ( the consumptionist or mercantilist point of view ) and ignoring the social relations of production , the proto - neoclassicists are able to present a view of society which is apparently egalitarian : since the exchange of goods is freely entered into – one can choose to buy or sell without coercion – it appears that such relations are based on equality between the buyer and seller .”
- “From their position on equality in the exchange relationship , economists can then construct a theory of distribution based on a non - exploitative argument . And to be consistent , such a theory must contain an argument in which the incomes of the propertied classes are in some sense deserved . “
- “Jevons himself sees a direct relationship between the utility theory of value and the defense of the capitalist order .”

John F. Henry, “The Making of Neoclassical Economics” p160



# Founder of the Austrian school Carl Menger

- “Menger’s position is overt and clear on this point : ‘ National ’ ( aggregate ) relations are ‘ fictions ’ ; the so - called ‘ national economy ’ is nothing more than the summation of individual ( atomistic ) units , and it is only the individual units that can be examined scientifically
- “From this point of view , then , Menger can logically attack social reform and defend existing property relations . For Menger , social phenomena and institutions are not the result of ‘ intended , ’ or planned , conscious actions – which would require group or collective action – but arise through the ( usually unconscious ) acts of individuals motivated by self - interest . Thus , social motion is individualist and , therefore , accidental . Following one strand of thought from Adam Smith , this individual behavior results in the unintended advancement of the common good :”
- “This , then , is a direct attack on , and a rebuke of , those who attempted to promote social reform through collective action .”

John F. Henry, “The Making of Neoclassical Economics” p197

# Each epoch has its own illusions determined by class relations

- Slavery was justified by Aristotle on the ground that the slave is naturally inferior to the freeman.
- Serfdom in feudal society was justified by John of Salisbury on grounds of 'the law of the universe all things are not reduced to order equally and immediately...'
- The mode of exploitation characteristic of capitalist society is wage labour , the labourer being ' free ' to sell his labour power , this 'free competition' was justified by Rousseau's contrat social.
- "These 'illusions' are inevitably reflected in the philosophical and scientific theories of the ruling class . The world of nature and of man is interpreted on the basis of certain assumptions which are accepted without question as absolute truths , although in fact they are historically determined by the position of the given class in the given epoch . ( Thomson , 1977 , p . 342 )"
- "By removing theory from its social and historical foundations ( its practice ) , the neoclassicists succeeded in liquidating political economy altogether :"
- "Thus , in a sense , neoclassicism serves as a lay religion , a substitute for a form of authority .... The utility theory of value helped fill that apparently growing void ."

John F. Henry, "The Making of Neoclassical Economics" p232 and 234

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# Conclusions

- Neoclassical economics became dominant because it was useful to reinforce the status quo, not because it was based on empirical study.
- The foundations of neoclassical economics were proved false during the 20<sup>th</sup> century.
- Therefore it is not science (it can be called “pre-science”).
- Its dominance was challenged when the status quo was obviously unsustainable in the 1930s.
- The same is happening today, but the stakes are even higher.

# The Dasgupta Review of the Economics of Biodiversity for HM Treasury



- “...because the biosphere is bounded, the global *economy* is bounded” p5
- “The Impact Inequality also points to the error in imagining that perpetual economic growth is possible in the long run. It is significant that a mechanical engine that converts heat into work at 100% efficiency is a theoretical impossibility. ... meaning that no matter how ingenious we can be, global output ( $Ny$ ) must also be bounded” p33

# Steve Keen

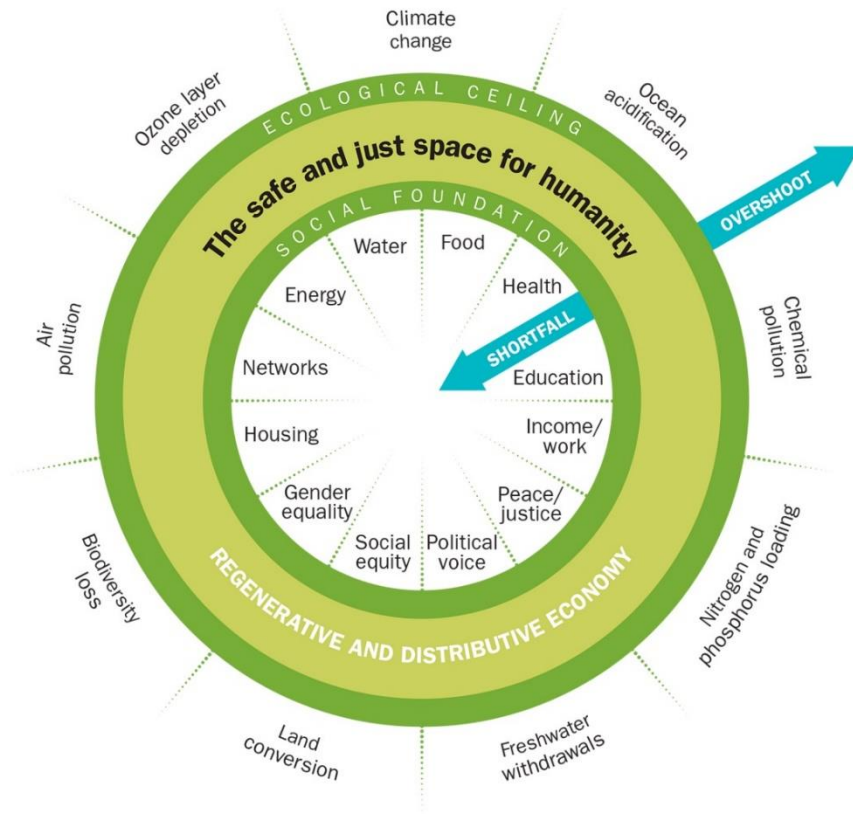
“Overall, the travesty that is Neoclassical climate change economics has elevated the struggle heterodox economists have waged for realism in economics from an issue merely about the proper nature of economics to a key requirement for humanity to have a future at all. This isn’t just about the right way to do economics anymore; it’s about the survival of human civilisation. If we are to have a future, then Neoclassical economics has to go, and we heterodox economists have to replace it with something properly grounded in the physical reality of planet Earth.”

Professor Steve Keen, March 2021

# Recommendations

- Easier to build up the new than attack the old.
- Debate with neoclassical economists is not usually productive.
- Kate Raworth's advice. Don't try and persuade, go where the energy is.

# There are alternatives!



Kate Raworth's Doughnut Economics

Examples of economics with a sound scientific basis:

- Ergodicity
- Ecological
- Institutional
- Feminist
- Post-Keynesian
- Complexity/evolutionary

Also bear in mind phronetic social science i.e. science with purpose, (Bent Flyvberg).

e.g. OECD's New Approaches to Economic Challenges supports many of these strands.





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## Questions or comments?

The views expressed in this presentation are those of the presenter.

