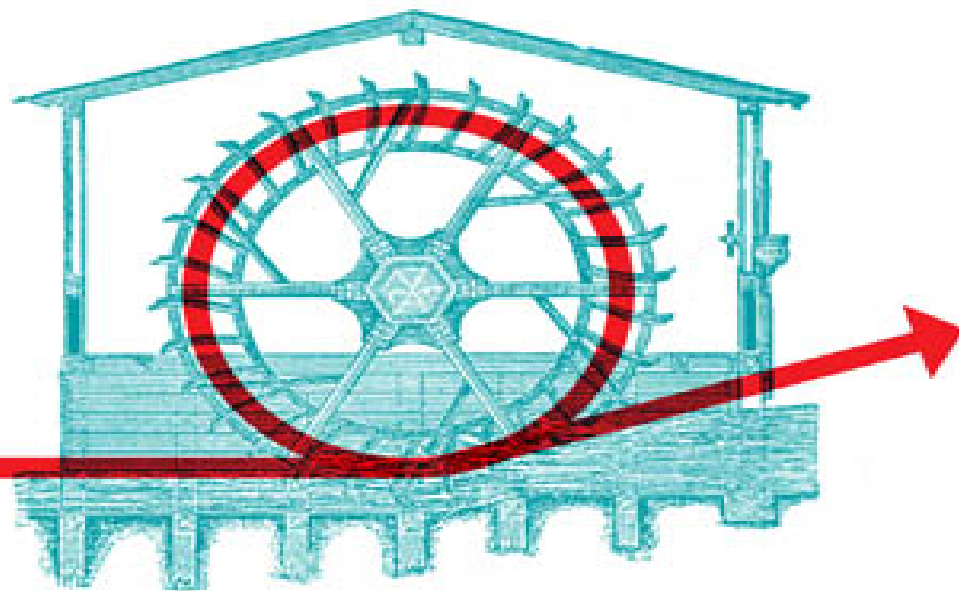


THE NEW ECONOMICS



A MANIFESTO

STEVE KEEN

Table of Contents

[Cover](#)

[Title Page](#)

[Copyright Page](#)

[*Figures and tables*](#)

[Figures](#)

[Tables](#)

[Dedication](#)

[1 Why this manifesto?](#)

[Notes](#)

[2 Money matters](#)

[2.1 Modelling the origins of fiat money in *Minsky*](#)

[2.2 Modelling modern fiat money in *Minsky*](#)

[2.3 The logic of credit's role in aggregate demand](#)

[2.4 Negative credit, economic crises and economic policy](#)

[2.5 An integrated view of deficits and credit](#)

[2.6 A Modern Debt Jubilee](#)

[2.7 Taming 'the roving cavaliers of credit'](#)

[2.7.1 'The pill'](#)

[2.7.2 Jubilee shares](#)

[2.7.3 Entrepreneurial equity loans](#)

[2.8 Shifting the monetary paradigm](#)

[Notes](#)

[3 Our complex world](#)

[3.1 A complex systems model of economic instability](#)

[3.2 Complexity and the impossibility of microfoundations](#)

[3.3 The macrofoundations of macroeconomics](#)

[Notes](#)

[4 Economics, energy and the environment](#)

[4.1 Our unsustainable future](#)

[4.2 Revolution by revulsion](#)

[Notes](#)

[5 The Neoclassical disease](#)

[Notes](#)

[6 Conclusion: Be the change](#)

[6.1 Your contrarian education in economics](#)

[Notes](#)

[References](#)

[Index](#)

[End User License Agreement](#)

List of Tables

Chapter 2

[**Table 2.1** Economic performance of major periods in post-Second World War USA](#)

[**Table 2.2** A Moore Table showing expenditure IS income for a three-sector economy](#)

[**Table 2.3** The Moore Table for Loanable Funds](#)

[**Table 2.4** The Moore Table for bank-originated money and debt](#)

[**Table 2.5** Magnitude of credit and duration of negative credit in the USA's major ec...](#)

Chapter 4

Table 4.1 Extract from Nordhaus's table 5:
breakdown of economic activity by vulner...

List of Illustrations

Chapter 2

Figure 2.1. Money enables the butter maker to buy a gun without the gun maker having to want...

Figure 2.2. The State as the conduit for fiat money transfers where money is the State...

Figure 2.3. Modelling the initiation of a monetary economy in *Minsky*. See <http://www...>

Figure 2.4. Growth of coins and the economy from an initial minting of 1,000 coins. See <http...>

Figure 2.5. The fundamental monetary operations of the government. See <http://www.profstevek...>

Figure 2.6. US government debt and deficits over the past 120 years

Figure 2.7. US unemployment and inflation 1960-1990

Figure 2.8. The relationship between credit and unemployment

Figure 2.9. Private debt and credit in the USA since 1834

Figure 2.10. The banking sector's view of a mixed fiat-credit economy. See <http://www...>

Figure 2.11. An integrated view of government deficits and private sector credit. See <http://...>

Figure 2.12. Margin debt and the stock market's cyclically-adjusted price-to-earnings ...

Figure 2.13. Accounting for a Modern Debt Jubilee. See <http://www.profstevekeen.com/minsky/>

Figure 2.14. Change in household credit and change in house prices (correlation 0.64).

Chapter 3

Figure 3.1. The cyclical interaction of grass and cows

Figure 3.2. A predator-prey model in *Minsky*, using sharks and fish. See <http://www.pr...>

Figure 3.3. Lorenz's model of aperiodic cycles in the weather. See <http://www.profste...>

Figure 3.4. The *Keen-Minsky* model and the 'intermittent route to chaos'...

Figure 3.5. Declining cycles in employment and inflation, while private debt rises

Chapter 4

Figure 4.1. The basic principle of a heat engine: Work can be done if $T_H...$

Figure 4.2. The correlation between change in global energy consumption and change in global...

Figure 4.3. A simple energy-based model with resource depletion and waste production. See ht...

Figure 4.4. Estimates of the total impact of climate change plotted against the assumed clim...

Chapter 6

Figure 6.1. Simple population growth as an integral equation in *Minsky*. See <http://ww...>

The New Economics

A Manifesto

Steve Keen

polity

Copyright Page

Copyright © Steve Keen 2022

The right of Steve Keen to be identified as Author of this Work has been asserted in accordance with the UK Copyright, Designs and Patents Act 1988.

First published in 2022 by Polity Press

Polity Press

65 Bridge Street

Cambridge CB2 1UR, UK

Polity Press

101 Station Landing

Suite 300

Medford, MA 02155, USA

All rights reserved. Except for the quotation of short passages for the purpose of criticism and review, no part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the publisher.

ISBN-13: 978-1-5095-4528-5

ISBN-13: 978-1-5095-4529-2 (pb)

A catalogue record for this book is available from the British Library.

by Fakenham Prepress Solutions, Fakenham, Norfolk NR21 8NL

The publisher has used its best endeavours to ensure that the URLs for external websites referred to in this book are correct and active at the time of going to press. However, the publisher has no responsibility for the websites and can make no guarantee that a site will remain live or that the content is or will remain appropriate.

Every effort has been made to trace all copyright holders, but if any have been overlooked the publisher will be pleased to include any necessary credits in any subsequent reprint or edition.

For further information on Polity, visit our website: politybooks.com

Figures and tables

Figures

[2.1.](#) Money enables the butter maker to buy a gun without the gun maker having to want butter

[2.2.](#) The State as the conduit for fiat money transfers where money is the State's liability and physical gold its asset

[2.3.](#) Modelling the initiation of a monetary economy in *Minsky*

[2.4.](#) Growth of coins and the economy from an initial minting of 1,000 coins

[2.5.](#) The fundamental monetary operations of the government

[2.6.](#) US government debt and deficits over the past 120 years

[2.7.](#) US unemployment and inflation 1960–1990

[2.8.](#) The relationship between credit and unemployment

[2.9.](#) Private debt and credit in the USA since 1834

[2.10.](#) The banking sector's view of a mixed fiat-credit economy

[2.11.](#) An integrated view of government deficits and private sector credit

[2.12.](#) Margin debt and the stock market's cyclically-adjusted price-to-earnings ratio (CAPE) since 1910

[2.13.](#) Accounting for a Modern Debt Jubilee

[2.14.](#) Change in household credit and change in house prices (correlation 0.64)

- [3.1.](#) The cyclical interaction of grass and cows
- [3.2.](#) A predator-prey model in *Minsky*, using sharks and fish
- [3.3.](#) Lorenz's model of aperiodic cycles in the weather
- [3.4.](#) The *Keen-Minsky* model and the 'intermittent route to chaos'
- [3.5.](#) Declining cycles in employment and inflation, while private debt rises
- [4.1.](#) The basic principle of a heat engine: Work can be done if $T_H > T_C$
- [4.2.](#) The correlation between change in global energy consumption and change in global GDP is 0.83
- [4.3.](#) A simple energy-based model with resource depletion and waste production
- [4.4.](#) Estimates of the total impact of climate change plotted against the assumed climate change
- [6.1.](#) Simple population growth as an integral equation in *Minsky*

Tables

- [2.1.](#) Economic performance of major periods in post-Second World War USA
- [2.2.](#) A Moore Table showing expenditure IS income for a three-sector economy
- [2.3.](#) The Moore Table for Loanable Funds
- [2.4.](#) The Moore Table for bank-originated money and debt
- [2.5.](#) Magnitude of credit and duration of negative credit in the USA's major economic crises

[4.1.](#) Extract from Nordhaus's table 5: breakdown of economic activity by vulnerability to climatic change in 1991 US\$ terms

Dedication

Dedicated to my wife Nisa, whose Buddhist grounding in the present keeps me sane as I contemplate the future facing both humanity, and the biosphere that humanity has so severely damaged.

1

Why this manifesto?

Even before the Covid-19 crisis began, the global economy was not in good shape, and neither was economic theory. The biggest economic crisis since the Great Depression began late in the first decade of the twenty-first century. Called the 'Global Financial Crisis' (GFC) in most of the world, and the 'Great Recession' in the United States, it saw unemployment explode from 4.6 per cent of the US workforce in early 2007 to 10 per cent in late 2009. The S&P500 stock market index, which had boomed from under 800 points in 2002 to over 1,500 in mid-2007, crashed to under 750 by early 2009. Inflation of 5.6 per cent in mid-2008 turned into deflation of 2 per cent in mid-2009.

The US economy recovered very slowly, under the influence of an unprecedented range of government interventions, from the 'Cash for Clunkers' scheme that encouraged consumers to dump old cars and buy new ones, to 'Quantitative Easing', where the Federal Reserve purchased a trillion-dollars-worth of bonds from the financial sector every year, in an attempt to stimulate the economy by making the wealthy wealthier.

The crisis, and the sluggish recovery from it, surprised both the economists who advise governments on economic policy, and the academics who develop the theories and write the textbooks that train new economists. Not only had they expected a continuation of the boom conditions that had preceded the crisis, *they in fact believed that crises could not occur.*

In his Presidential Address to the American Economic Association in January 2003, Nobel Prize winner Robert

Lucas declared that crises like the Great Depression could never occur again, because 'Macroeconomics ... has succeeded: *Its central problem of depression prevention has been solved, for all practical purposes, and has in fact been solved for many decades*' (Lucas 2003, p. 1). Just two months before the crisis began, the Chief Economist of the Organization for Economic Cooperation and Development (OECD), the world's premier economic policy body, declared that '*the current economic situation is in many ways better than what we have experienced in years*', and predicted that in 2008, 'sustained growth in OECD economies would be underpinned by strong job creation and falling unemployment' (Cotis 2007, p. 7, emphasis added). In the depths of the crisis, George W. Bush's Chief Economic Advisor Edward Lazear argued that, because the downturn had been so deep, the recovery would be very strong (Lazear and Marron 2009, Chart 1-9, p. 54). He was bitterly disappointed by the actual outcome, which was the slowest recovery from an economic crisis since the Great Depression itself.

How could economists be so wrong about the economy?

They could be excused their failure to see the Great Recession coming if the crisis were something like Covid-19, when a new pathogen suddenly emerged out of China. As long ago as 1995, Laurie Garrett declared that such a plague was inevitable (Garrett 1995). But predicting *when* the pathogen would emerge, let alone what its characteristics would be, was clearly impossible. However, the epicentre of the Great Recession was the US financial system itself: the crisis came from *inside* the economy, rather than from outside. Surely there were warning signs? As Queen Elizabeth herself put it when she attended a briefing at the London School of Economics in 2008, 'If these things were so large, how come everyone missed them?' (Greenhill 2008).

Not all economists did: there were some who warned that a crisis was not merely likely, but imminent. The Dutch economist Dirk Bezemer identified a dozen, of whom I was one (Bezemer 2009a, 2009b, 2010; Keen 1995, 2007). Though these economists came from disparate backgrounds, Bezemer noted that they had one *negative* characteristic in common: ‘no one predicted the crisis on the basis of a neo-classical framework’ (Bezemer 2010, p. 678).

One would expect that the failure by economists to anticipate the biggest economic event of the post-Second World War world would cause economics to change dramatically. But it hasn’t. What Bezemer called ‘Neoclassical economics’ was the dominant approach to modelling the economy before the GFC, and it has remained dominant since.^{[1](#)}

The failure of economics to reform itself after such a profound empirical failure has led to strong criticism of economics from within – even by economists who have been awarded the Nobel Prize in Economics. Robert Solow, the 1987 recipient, told a United States Congressional Hearing into economics in 2010 that:

We are in desperate need of jobs, and the approach to macroeconomics that dominates the elite universities of the country and many central banks and other influential policy circles, that approach seems to have essentially nothing to say about the problem. (Solow 2010, p. 12)

Paul Romer, who received the Prize in 2018, argued in 2016 that economics had such a ‘noncommittal relationship with the truth’ that it deserved the label of ‘post-real’ (Romer 2016, p. 5).

These criticisms of Neoclassical economics by prominent Neoclassical economists echo criticisms that economists

from other schools of thought have been making for many decades. These rival approaches to economics are very different to the specializations that exist in sciences like physics. Some physicists specialize in General Relativity, others in Quantum Mechanics, Statistical Mechanics, Newtonian physics, and so on. Each of these approaches has different perspectives on how the Universe operates, but each works very well in its respective domain: General Relativity in the realm of the very large (the Universe), Quantum Mechanics in the realm of the very small (the atom), while Newton's equations work very well in between, and so on.

But in economics, different schools of thought have visions of how the economy works that are fundamentally in conflict. There is no way to partition the economy into sections where Neoclassical economics applies and others where rival schools of thought like Post Keynesian, Austrian or Biophysical economics apply. On the same topic – say, for example, the role of private debt in causing financial crises – these schools of thought will often have answers that flatly contradict Neoclassical economics, and frequently also, each other. These non-mainstream schools of thought, which are collectively known as ‘heterodox’ economics, are followed by a significant minority of academic economists – as many as 10 per cent of the discipline, going on a campaign in France in 2015 to establish a separate classification there (Lavoie 2015b; Orléan 2015).²

The economists who did warn of the Global Financial Crisis came almost exclusively from these dissenting schools of thought.³ Though they differed from each other in significant ways, Bezemer noted that they shared ‘a concern with financial assets as distinct from real-sector assets, with the credit flows that finance both forms of wealth, with the debt growth accompanying growth in

financial wealth, and with the accounting relation between the financial and real economy' (Bezemer 2010, p. 678).

If you haven't yet studied economics, or you're in your early days of doing so at school or university, I hope this gives you pause: shouldn't mainstream economics also concern itself with finance and debt? Surely they are essential features of the economy? *Au contraire*, the mainstream long ago convinced itself that even money doesn't really affect the economy, and hence monetary phenomena – including money, banks and private debt – are omitted from Neoclassical models. One Neoclassical economist put it this way on Twitter:

Most people who teach macro do it by leading people through simple models without money, so they understand exchange and production and trade, international and inter-temporal. You can even do banks without money [yes!]. And it's better to start there. Then later, study money as it superimposes itself and complicates things, giving rise to inflation, exchange rates, business cycles.

This statement was made in late 2020 – a dozen years *after* the failure of Neoclassical models to anticipate the crisis.

Why didn't mainstream economists change their beliefs about the significance of money in economics after their failure in 2007? Here, paradoxically, economics is little different to physics, in that significant change in physics does *not*, in general, occur because adherents of an old way of thinking are convinced to abandon it by an experiment whose results contradict their theory. Instead, these adherents continue to cling to their theory, despite the experimental evidence it has failed. Humans, it appears, are more wedded to their beliefs about reality – their 'paradigms', to use Thomas Kuhn's famous phrase (Kuhn 1970) – than reality itself. Science changed, not because these scientists changed their minds, but because they

were replaced by new scientists who accepted the new way of thinking. As Max Planck put it:

a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it. (Planck 1949, pp. 33–4)

Here, economics is different, largely because economic ‘experiments’ are different to scientific ones, in that they are historical events, whereas scientific experiments are deliberate attempts to confirm a theory – some of which fail. The Michelson–Morley experiment attempted to measure the speed of the Earth relative to ‘the aether’, the medium that scientists then thought allowed light to travel through space. The experiment found that there was no discernible relative motion, which implied that the aether did not exist. This unexpected discovery led to the rejection of the aether theory, and ultimately the adoption of the Theory of Relativity. This experiment can be repeated at any time – and it has been repeated, with increasingly more sophisticated methods – and the result is always the same. There is no way of getting away from it and returning to a pre-Relativity science, and nor is there any desire to do so by post-Relativity physicists.

In economics, however, it *is* possible to get away from the failure of theory to play out as expected in reality. An event like the GFC occurs only once in history, and it cannot be reproduced to allow old and new theories to be tested against it. As time goes on, the event itself fades from memory. History can help sustain a memory, but economic history is taught at very few universities. Economists don’t learn from history because they’re not taught it in the first place.

The economy is also a moving target, whereas the physical world, relatively speaking, is a stationary one. When a clash

between theoretical prediction and empirical results occurs in physics, the state of unease persists until a theoretical resolution is found. But in economics, though a crisis like the GFC can cause great soul searching when it occurs, the economy changes over time, and the focus of attention shifts.

Finally, unlike physicists, economists *do* want to return to pre-crisis economic theory. Events like the GFC upset the 'totem' that characterizes Neoclassical economics, the 'supply and demand' diagram (Leijonhufvud 1973),⁴ in which the intersecting lines determine both equilibrium price and equilibrium quantity, and in which any government intervention necessarily makes things worse, by moving the market away from this equilibrium point. This image of a self-regulating and self-stabilizing market system is a powerful intellectual, and even emotional, anchor for mainstream economists.

These factors interact to make economics extremely resistant to fundamental change. In physics, anomalies like the clash between the results of the Michelson-Morley experiment and the predictions of pre-Relativity physics persist until the theory changes, because the experimental result is eternal. The anomaly doesn't go away, but the theory that it contradicted dies with the pre-anomaly scientists. Try as they might, they can't recruit adherents to the old theory amongst new students, because the students are aware of the anomaly, and won't accept any theory that doesn't resolve it.

In economics, anomalies are gradually forgotten, and new students can be recruited to preserve and extend the old beliefs, and to paper over anomalous phenomena. School and university economics courses become ways of reinforcing the Neoclassical paradigm, rather than fonts

from which new theories spring in response to failures of the dominant paradigm.

In physics, intellectual crises are intense but, relatively speaking, short-lived. The crisis persists until a new theoretical breakthrough resolves it – regardless of whether that breakthrough persuades existing physicists (which as a rule, it doesn't). The 'anomaly', the empirical fact that fundamentally contradicts the existing paradigm, is like the grain of sand in an oyster that ultimately gives birth to a pearl: the irritation cannot be avoided, so it must be dealt with (Woit 2006).⁵ It is the issue that believers in the existing paradigm know they cannot resolve – though it may take time for that realization to sink in, as various extensions of the existing paradigm are developed, each of which proves to be partially effective but inherently flawed. It is the thing young scientists are most aware of, the issue they want to be the one to resolve. As their lecturers who stick to the old paradigm age, the students take in the old ideas, but they are actively looking for where they are wrong, and how these contradictions might be resolved.

Once a solution is found, the protestations of the necessarily older, ageing, sometimes retired and often deceased champions of the previous paradigm mean nothing. Ultimately, all the significant positions in a university department are filled by scientists who are committed to the new paradigm. Then, as the new paradigm develops, it first undergoes a period of rapid extension, but ultimately confronts its own critical anomaly, and the science falls into crisis once more, as philosopher of science Thomas Kuhn (Kuhn 1970) explains.⁶

This is a punctuated path of development. It starts with the development of an initial paradigm by a great thinker, around whom a community of followers coalesces. They extend the core insights and thus form a new paradigm in

that science. Initially, they enjoy a glorious period of the dance between observation and theory, where observations confirm and extend the paradigm. But finally, some prediction the theory makes is contradicted by observation. After a period of denial and dismay, the science settles into an unhappy peace: the paradigm is taught, but with less enthusiasm, the anomaly is noted, and the various within-paradigm attempts to resolve it are discussed. Then, out of somewhere, whether from a Professor (Planck) or a patents clerk (Einstein), a resolution comes. Rinse and repeat.

Those punctuations never occur in economics, and because the punctuations don't occur, neither does the kind of revolutionary change in the discipline that Kuhn vividly describes for physics and astronomy. *Economics is, therefore, not a science*. As Kuhn explains brilliantly, a real science goes through a process of paradigm change via a shift from what he calls 'normal science', to a scientific revolution triggered by a fundamental anomaly and resolved by a new paradigm, after which normal science resumes once more with the new paradigm. Economics has experienced many theoretical and empirical crises since the Neoclassical school became dominant in the 1870s, but none have resulted in a revolution to a new paradigm akin to the shift from Ptolemaic to Copernican astronomy.

An economic crisis, when it strikes, does disturb the mainstream. Their textbook advice – if the crisis is empirical rather than theoretical – is thrown out of the window by policymakers while the crisis lasts. Mainstream economists react defensively – which is not significantly different from what happens in a science. They can justify the extraordinary policy measures undertaken by the unexpected nature of the crisis, but then treat the contradiction the crisis poses for their theory as an aberration, which can be handled by admitting some modifications to peripheral aspects of the core theory. One

example is the concept of 'bounded rationality' promoted by Joe Stiglitz (Stiglitz 2011, 2018). This can be invoked to say that, if everyone were strictly rational, then the problem would not have arisen, but because of 'bounded rationality', the general principle didn't apply and, in this instance, a deviation from policies recommended by the pure theoretical canon is warranted.

Minor modifications are made to the Neoclassical paradigm, but fundamental aspects of it remain sacrosanct. Again, this is comparable to the reactions to an anomaly by adherents to an existing paradigm in a science.

Over time, the crisis passes – whether that passing was aided or hindered by the advice of economists. A handful of economists break with the majority because of the anomaly, which is how heterodox economists are born. But the majority of students become as entranced as their teachers were by the fundamentally utopian Neoclassical vision of capitalism as a system without power, in which everyone receives their just rewards, and in which regulation and punishment are unnecessary, because The Market does it all. These new students replace their masters, and they continue to propagate the Neoclassical paradigm.

This is the first hurdle at which economics fails to be a science. The process Planck describes, of the death of adherents of the old (Neoclassical) paradigm resulting in them being replaced by a 'new generation' that is familiar with the 'new scientific truth', does not occur in economics.

The second hurdle is the political role of economic theory. The last genuine scientific revolution in economics occurred in the 1870s, when the Neoclassical took over from the Classical school of thought – the approach developed by Adam Smith (Smith 1776), extended by David Ricardo (Ricardo 1817) and commandeered by Marx (Marx 1867). Neoclassical economists imagine that their theories

originated with Smith (Samuelson and Nordhaus 2010a, p. 5), but in fact Smith, Ricardo and Marx used an 'objective' theory of value that is completely at odds with Neoclassical theory. Ricardo explicitly rejected the utility-oriented, scarcity-based proto-Neoclassical economics of his contemporary Jean-Baptiste Say, declaring emphatically that:

There are some commodities, the value of which is determined by their scarcity alone ... These commodities, however, form a very small part of the mass of commodities daily exchanged in the market ... says Adam Smith, '... It is natural that what is usually the produce of two days', or two hours' labour, should be worth double of what is usually the produce of one day's, or one hour's labour.' ...

That this is really *the foundation of the exchangeable value of all things, excepting those which cannot be increased by human industry, is a doctrine of the utmost importance in political economy*; for from no source do so many errors, and so much difference of opinion in that science proceed, as from the vague ideas which are attached to the word value. (Ricardo 1817, Chapter 1, emphasis added)

The Classical school of thought had logical problems of its own (Keen 1993a, 1993b; Steedman 1977), but a key factor in its demise, and the rise of the Neoclassical school, was that Marx turned the Classical approach into a critique of capitalism itself (De Vroey 1975). Since then, the fact that Neoclassical economics supports wealthy interests, via its merit-based theory of income distribution, has played a major role in cementing the dominant position of Neoclassical economics. Well-funded 'thinktanks' promote its analysis of capitalism, so that its analysis of the economy dominates popular and political discourse on economics. This ideological role of Neoclassical economics means that it is defended vigorously, even when reality