

Onblog Economics Muddle Busting

Kakarot-Handtke, Egmont

University of Stuttgart, Institute of Economics and Law

11 December 2014

Online at https://mpra.ub.uni-muenchen.de/60543/ MPRA Paper No. 60543, posted 12 Dec 2014 06:00 UTC

Onblog Economics Muddle Busting

Egmont Kakarot-Handtke*

Abstract

The representative economist does not understand the two most important phenomena in the economic universe: profit and income. Because of this economists have nothing to offer in the way of a scientifically founded advice. Therefore, the contributions to economic blogs cannot claim to offer more than personal opinion. Of opinions, though, economics always had plenty. What is needed is knowledge – scientific knowledge, that is. With the outline of the correct economic paradigm at hand it is straightforward to refute obsolete approaches. For this purpose the economics blogs are ideal. A selection of recent comments is reproduced in the present paper.

JEL B59, B49

Keywords new framework of concepts; structure-centric; axiom set; economics blogs; dead-ideas-recycling

^{*}Affiliation: University of Stuttgart, Institute of Economics and Law, Keplerstrasse 17, 70174 Stuttgart, Germany. Correspondence address: AXEC Project, Egmont Kakarot-Handtke, Hohenzollernstraße 11, 80801 München, Germany, e-mail: handtke@axec.de. Research reported in this paper is not the result of a for-pay consulting relationship; there is no conflict of interest of any sort.

1 Economics blogs: mainly dead-ideas-recycling

It is widely known that the representative economist does not understand how the economy works. Many explanations have been advanced. Putting aside all individual specifics and exceptions for the moment, the main reason is this.

Neither Classicals, nor Walrasians, nor Marshallians, nor Marxians, nor Keynesians, nor Institutionialists, nor Monetary Economists, nor Austrians, nor Sraffaians, nor Evolutionists, nor Game theorists, nor Econophysicists, nor RBCers, nor New Keynesians, nor New Classicals ever came to grips with profit (cf. Desai, 2008). Hence, 'they fail to capture the essence of a capitalist market economy' (Obrinsky, 1981, p. 495).

Neither orthodox nor heterodox economists understand the two most important phenomena in the economic universe: profit and income (2014i; 2014a). Because of this economists have nothing to offer in the way of a scientifically founded advice.

"In order to tell the politicians and practitioners something about causes and best means, the economist needs the true theory or else he has not much more to offer than educated common sense or his personal opinion." (Stigum, 1991, p. 30)

It is important to distinguish between political and theoretical economics. In political economics 'anything goes'; in theoretical economics scientific standards are observed. The fundamental rule that guarantees the self-government of the scientific community demands to accept refutation. Refutation refers to material and formal consistency.

"In economics we should strive to proceed, wherever we can, exactly according to the standards of the other, more advanced, sciences, where it is not possible, once an issue has been decided, to continue to write about it as if nothing had happened." (Morgenstern, 1941, p. 369)

Political economics is ignorant of this rule and preoccupied with recycling 'dead ideas' (Quiggin, 2010). This explains the secular stagnation of economics.

Because they lack the correct profit theory the contributions to economic blogs cannot claim to offer more than personal opinion. Of opinions, though, economics always had plenty. What is needed is knowledge – scientific knowledge, that is.

Conventional economics rests on behavioral assumptions that are formally expressed as axioms (McKenzie, 2008). Axioms are indispensable to build up a theory that epitomizes formal and material consistency. The fatal flaw of the standard approach is that human behavior does not yield to axiomatization.

Orthodox approaches, but the heterodox alternatives also, lack this crucial intuition: the subject matter of theoretical economics is not human behavior but the behavior of the economic system. It is quite commonsensical to focus first on human behavior and to second-guess motives, expectations, and plans but ultimately this leads merely to a gossip model of the world and, indeed, away from any understanding of how

the actual economy works. Common sense has always been a bad guide in scientific matters.

The conceptual consequence is to discard the subjective-behavioral axioms and to take objective-structural axioms as the formal point of departure. This is the first step out of the cul-de-sac and this analytical precondition has been completed in a series of working papers:

URL http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1210665

With the outline of the correct economic paradigm at hand it is straightforward to refute obsolete approaches. For this purpose the economics blogs are ideal. They offer the opportunity to bring one particular problem into sharp focus and to present the solution with a clear, short and informal argument. Those interested in the full explanation of the phenomenon are referred to the complete and formal argument in the working papers. A comfortable access to various blog comments is provided with the collective web page:

URL http://www.axec.org/#!blog-w/c132o

Part of the comments in the period between October and December 2014 is reproduced in the present paper. The off-the-cuff notes and rejoinders offer a concrete point of entry to the structural axiomatic paradigm. Vis-à-vis the sometimes technically awkward posts correction of typos and minor textual improvements have been made. If context is needed the threads are online accessible via the collective web page. While the occasions vary, all posts center around three essential issues:

- Orthodoxy is a failure.
- Heterodoxy is a failure.
- There is no alternative to the structural axiomatic paradigm.

Neither in debates nor in the working papers there is any interest in political economics. The focus is strictly on theoretical economics, which in turn presupposes a consistent axiomatic foundation. This is the implicit consensus of any debate that aims at scientific results.

2 Science ousts politics Comment on Peter Radford's 'Economics and civil society'

URL http://rwer.wordpress.com/2014/12/02/economics-and-civil-society/

First of all one has to distinguish between theoretical and political economics. The goal of political economics is to push an agenda, the goal of theoretical economics is to explain how the actual economy works. From the viewpoint of science political economics as a whole is a no-go. The first problem of economics is that many economists are not scientists but agenda pushers of one sort or another. This, and not

the peculiarities of the subject matter, explains the secular stagnation of economics in comparison to the real sciences.

Currently, economists do not understand how the economy works.

"As Joan Robinson said, our essential object in economics is "to understand how the economic system works"; or, putting the emphasis differently, as did Keynes, "Is the economic system self-adjusting?" Sadly, we economists have so far done little to address, much less provide satisfying answers to the issues posed by Newcomb, Robinson, and Keynes. ... we know little more now about "how the economy works," or about the *modus operandi* of the invisible hand than we knew in 1790, after Adam Smith completed the last revision of *The Wealth of Nations.*" (Clower, 1999, p. 401)

Science is a trial-and-error process: ignorance is the starting point, great insights are few and far between. Economics is, in its present condition, a failed science. This, however, does not hinder economists to give policy advice. And this is not only ridiculous but illegitimate. J. S. Mill had stated clearly the distinction between positive and normative economics.

"A scientific observer or reasoner, merely as such, is not an adviser for practice. His part is only to show that certain consequences follow from certain causes, and that to obtain certain ends, certain means are the most effectual. Whether the ends themselves are such as ought to be pursued, and if so, in what cases and to how great a length, it is no part of his business as a cultivator of science to decide, and science alone will never qualify him for the decision." (Mill, 2006b, p. 950)

To recall, it were the ancient Greeks who first introduced the distinction between doxa and episteme, opinion and knowledge. And then they drew the line of demarcation between non-science and science.

Clearly, Smith and Mill were agenda pushers against feudalism. Marx and Keynes were agenda pushers and so were Hayek and Friedman. However, all these economists insisted that they were doing science.

It is not the question whether the one or the other of the above mentioned fought for the good or the evil cause. All abused science for their agenda pushing. As economists they have to be judged according to their scientific merits. As far as economics is concerned, Hayek and Friedman have to be criticized for zero scientific content, not for their political commitment, and Keynes has to be praised for his attempted paradigm shift but not for his political commitment.

Economists are expected to deliver the true economic theory and not to save the world. Up to the present, they have not accomplished their primary task. In order to become a science, economics has to get rid of agenda pushers of *all* sorts. This is the theoretical economist's most valuable and the only legitimate political contribution to a civil society.

Never allow any economist to advertise poor theory as a contribution to the betterment of the world we live in.

3 The subtle distinction between storytelling and science Comment on Wren-Lewis's 'Saving equals Investment?'

URL http://mainlymacro.blogspot.de/2012/01/savings-equals-investment.html

The I=S discussion is the widely visible monument of a lack of genuine scientific instinct of both orthodox and heterodox economists. In order to make this perfectly clear it is necessary not to accept the familiar premises but to dig deeper. As Keynes already recognized:

"For if orthodox economics is at fault, the error is to be found not in the superstructure, which has been erected with great care for logical consistency, but in a lack of clearness and of generality in the premises." (1973, p. xxi)

That an error/mistake is almost always located in the premises is well-known from methodology.

"In fact, the history of every science, including that of economics, teaches us that the elementary is the hotbed of the errors that count most." (Georgescu-Roegen, 1970, p. 9)

So, what has first of all to be replaced is this formal description of the economy: "In the most simple model of a closed economy without government, income (Y) = consumption (C) + saving (S), but also expenditure (Y) = consumption (C) + investment (I). So S=I by definition. But here investment includes what is called 'stockbuilding' or 'inventory accumulation', which includes goods that firms wanted to sell but could not." (quote from initial post)

Instead: The most elementary economic configuration, i.e. the pure consumption economy, is defined by: (i) $Y_W = WL$ wage income Y_W is equal to wage rate W times working hours L, (ii) O = RL output O is equal to productivity R times working hours L, (iii) C = PX consumption expenditure C is equal to price P times quantity bought/sold X.

This is the formal minimum. For the graphical representation see here:

https://commons.wikimedia.org/wiki/File:AXEC31.png

At any given level of employment *L*, the wage income that is generated in the consolidated business sector follows by multiplication with the wage rate. On the real side output follows by multiplication with the productivity. Finally, the price follows as the dependent variable under the conditions of budget balancing, i.e. $C = Y_W$ and market clearing, i.e. X = O. Note that the ray in the southeastern quadrant is *not* a linear production function; the ray tracks *any* underlying production function.

If the wage rate W is lowered, the market clearing price P falls. If the number of working hours L is increased the price remains constant, provided productivity R does not change. If productivity decreases the price rises. In any case, labor gets the

whole product, the real wage is invariably equal to the productivity, and profit for the business sector as a whole is zero. All changes in the system are reflected in the market clearing price.

In the next period, the households save. The result is shown here:

https://commons.wikimedia.org/wiki/File:AXEC33.png

Consumption expenditure *C* falls below Y_W and with it the market clearing price *P*. With perfect price flexibility there are *no* unsold quantities and *no* change of inventory. The product market is *always* cleared and there is no such thing as an inventory investment. So we have household sector saving but no business sector investment, that is, saving which is given by $S = Y_W - C$ is *not* equal to investment I = 0.

Of course, we could also consider the case where the price is sticky, and part of the output *O* is not sold, i.e. O - X > 0 (see 2014a). This, however, would not alter the crucial conclusion.

The crucial conclusion is indeed that the business sector makes a loss which is exactly equal to the household sector's saving, i.e. $S = -Q_m$. Therefore, loss (and *not* investment) is the exact counterpart of saving; by consequence, profit is the exact counterpart of dissaving.

And this is why almost everything that conventional professors tell their students is false. Household sector saving has never been equal and will never be equal to business sector investment.

The general relationship between monetary profit, distributed profit, investment and saving is given by:

https://commons.wikimedia.org/wiki/File:AXEC09.png.

How could economists get the basics so wrong? Because they cannot tell the difference between income and profit. This is like medieval physics before the pivotal concepts of force and mass were properly defined and understood.

As a matter of fact, Keynes's conceptual problems started with profit:

"His *Collected Writings* show that he wrestled to solve the Profit Puzzle up till the semi-final versions of his *GT* but in the end he gave up and discarded the draft chapter dealing with it." (Tómasson and Bezemer, 2010, p. 12)

This kicks off the chain reaction of errors/mistakes: when profit is not correctly defined, income is not correctly defined, and then saving is not correctly defined. It is with profit where the confusion about saving "equals" investment starts. The conceptual mess has been verbally papered over with capital investment/inventory investment or ex ante/ex post and the representative economist has swallowed all this hook, line and sinker. For the formally correct solution see (2014i).

Because neither the Post-Neo-New Keynesians nor the Post-Neo-New Classicals have solved the profit puzzle and with it the saving-investment puzzle, they are collectively out of science (2013f).

4 The pluralism of nonsense is still nonsense Comment on Geoff Davies's 'Reforming economics: pluralism is not enough'

URL http://rwer.wordpress.com/2014/12/05/reforming-economics-pluralism-is-not-enough/

According to scientific criteria conventional economics is a failure. From this you draw the conclusion: "Sack the economists and disband their departments." This seems to be a straightforward conclusion, however, it is not because it takes us beyond the realm of science into the realm of politics. Within the confines of science the only legitimate and praiseworthy action is to replace a theory/paradigm by a better one.

Again, it is a logical mistake to conclude from the fact that conventional economics is defective that the curriculum can be improved by counterbalancing it with other defective approaches.

We can agree, for example, that the orthodox profit theory is false (Desai, 2008). But what about Heterodoxy? The profit theories of Marx, Schumpeter, Keynes, Kalecki, Davidson, Minsky, Keen are also demonstrably false (2014f; 2011d; 2011f; 2011e; 2013b). Despite the obvious fact that they cannot all be correct at the same time, all are propagated under the banner of pluralism as heterodox alternatives. As it happens, they are all different *and* false. Real scientists would feel the need to clear up this internal contradictions and not to advertise them as pluralism.

As there is only one Law of the Lever, there can be only one objective Profit Law for the economy as a whole as long as profit cannot be created by wishful thinking. And, being a scientist, you know this quite well: "Coherence in economic theory will only come from deeper insights into how economies work." (Geoff Davies, see initial post)

As it happens, this coincides perfectly with my recent post: "This, then, could be the new directive: Economics is the science which studies how the monetary economy works." See:

http://rwer.wordpress.com/2014/12/01/the-ramsey-keynes-dispute/#comment-84221

What is needed is a paradigm shift. The problem is that Heterodoxy has no clue how to achieve this. And because it cannot be claimed that the heterodox paradigm is better it is claimed that heterodox policy is better.

While this may be the case, it begs the question. To argue that orthodox theory is false but heterodox policy is right is simply a category mistake.

There is no way around it: "In order to tell the politicians and practitioners something about causes and best means, the economist needs the true theory or else he has not much more to offer than educated common sense or his personal opinion." (Stigum, 1991, p. 30)

What is expected from economists is the true theory and not the pluralism of false theories. After Orthodoxy has failed, quite naturally all hopes rest on Heterodoxy.

Don't dally until someone demands: Sack them all!

5 Could economists get their economics right before philosophizing about uncertainty? Comment on 'The Ramsey-Keynes dispute'

URL http://rwer.wordpress.com/2014/12/01/the-ramsey-keynes-dispute/

Keynes had his fingers in many pies, mostly in those where "nothing is clear and everything is possible." (Keynes, 1973, p. 292)

Let us become more specific. Keynes realized that something was wrong with classical economics. In this he was ahead of his fellow economists. But he went not far enough. As a matter of fact he accepted the premise that economics is about choice according to the famous definition:

"Economics is the science which studies human behavior as a relationship between ends and scarce means which have alternative uses." (Robbins, 1935, p. 16)

Indeed, this directive sent economists, and Keynes among them, into scientific nirvana: "Economics studies human behavior."

The outcome – inevitable and fatal like Greek tragedy – has been neatly summarized by Newtownian: "... whether Ramsey or Keynes are closer to the truth may be as much a non issue as two witchhunters arguing over whether succubi or incubi are of more concern." This metaphor is paradigmatic for the vacuousness of economic debates.

While distracted by non-issues, Keynes messed up the basics of economics with this syllogism: Income = value of output = consumption + investment. Saving = income - consumption. Therefore saving = investment. (Keynes, 1973, p. 63)

That is rather elementary mathematics. It cannot be said that formalization or the axiomatic-deductive method ruined Keynesianism. It is pure conceptual sloppiness (2014i). Keynesians and the rest of the profession simply cannot tell the fundamental difference between income and profit (2011f).

This, though, is exactly what is expected from an economist. Time, therefore, to relinquish the filibuster about human behavior, choice, rationality and the three-door anomaly to psychologists, sociologists, anthropologists, philosophers, theologians and other adherents of the so-called social sciences.

What can be learned from Keynes is:

"Nothing is more difficult than to turn an entire discipline around, asking in effect to jettison its own history over the last 200 years." (Blaug, 1990, p. 205)

Economics is not a science of behavior (Hudík, 2011). This, then, could be the new directive: Economics is the science which studies how the monetary economy works.

It will be a glorious day in the history of economic thought when the representative economist can summarize in a simple formula how the profit mechanism functions.

6 Who takes Orthodoxy or Heterodoxy seriously? Comment on Merijn Knibbe's 'The real winner: economics which takes money and debt serious'

URL http://rwer.wordpress.com/2014/11/27/the-real-winner-economics-which-takes-money-and-debt-serious/

True: money and debt have to be taken seriously. False: Keynes was the first to have done so, therefore Keynes will be the new Keynes.

As a matter of fact, Political Economy started with the debt problem: "Adam Smith, when he wrote his *Wealth of Nations*, and Burke, when he produced his famous speech on economic reform, understood by political economy a branch of the science of the statesman or legislator, a theory of practice, the science of the prudent management of the public finances. The growth of the huge debts which weighed on the great military nations would end in proving their ruin. This was especially true of England, which had become immensely in debt trough the conquest of her colonial Empire." (Halévy, 1960, pp. 104-105)

From classical Political Economy onwards the debt problem was solved by demanding that government debt should be close to zero. Households should be savers and prudent lenders. Business sector debt that was backed by productive capital has always been regarded as unobjectionable. Since saving and investment are always equal, in a sound economy the financial assets of the household sector are equal to the business sector's liabilities. Money was handled with the Quantity Theory and made neutral by assumption. No systemic problems in this big picture. To be sure, nobody denied that there could be disturbances because of all sorts of human failure and folly. And economists were always well aware that financial and economic crises go hand in hand.

It is not so much ignorance of the phenomena that is the problem but theoretical misconceptions. And in this respect Keynes was not much better than the classicals.

The key point is that economists are not aware of the relationship between debt and profit. Only if the household sector's consumption expenditures are greater than wage income, i.e. partly financed by credit, the business sector as a whole can make the initial monetary profit in the pure consumption economy (the complete formula is here https://commons.wikimedia.org/wiki/File:AXEC29.png). The relationship between growing debt and profit becomes a bit more complex when investment,

government and foreign trade are included but this does not alter the elementary relationship. For the wider implications see (2013d; 2014c).

True: neither the classicals, nor the neoclassicals, nor their actual reincarnations got the relationship between debt and profit right. However, this does not make Heterodoxy the winner by default. The profit theories of Marx, Schumpeter, Keynes, Kalecki, Davidson, Minsky, Keen, all on the list of the 20 top heterodox economists (see below), are also demonstrably false (2014f; 2011d; 2011f; 2011e; 2013b).

Finally: after he wandered a lifetime in the wrong direction (2014b; 2014d) how can anyone take Krugman's actual musings about the future of economics seriously? The future is where Krugman is not and vice versa.

Link to top 20:

http://larspsyll.wordpress.com/2014/02/28/top-20-heterodox-economics-books/

7 From anything goes to nothing goes right Comment on Lars P. Syll's 'Mainstream macroeconomics distorts our understanding of economic reality'

URL http://rwer.wordpress.com/2014/11/11/mainstream-macroeconomics-distorts-our-understanding-of-econo

7.1 No excuses

Economists owe the world the true economic theory, that is, a theory that satisfies the scientific standards of material and formal consistency and that explains how the economy works.

Economists have not delivered. But they have delivered a lot of reasons why they have not delivered. Complexity is number one. Hypotheses-testing-is-not-possible is number two. Duhem-Quine comes next. Very popular is also the solidarity of ignoramuses: "There is no objective truth in economics," "Nobody understands the whole picture. Everybody gets a piece of it." (Roosevelt) URL http://larspsyll.wordpress.com/2014/11/10/understanding-capitalism/

Here is the mother of all excuses:

"Economics is a strange sort of discipline. The booby traps I mentioned often make it sound as it is all just a matter of opinion. That is not so. Economics is not a Science with a capital S. It lacks the experimental method as a way of testing hypotheses. . . . There are always differences of opinion at the cutting edge of a science, . . . But they last longer in economics . . . and there are reasons for that. As already mentioned, rival theories cannot be put to an experimental test. All there is to observe is history, and history does not conduct experiments: too many things are always happening at once. The inferences that can be made from history are always uncertain, always disputable, . . . You can't even count on a long and undisturbed run of history, because the "laws" of behavior change and evolve. Excuses, excuses. But the point is not to provide excuses." (Solow, 1998, pp. x-xi)

Indeed.

When we turn to Heterodoxy things seem to get better at first, but then they become abysmal.

Tony Lawson has properly identified the methodological blunder of green cheese assumptionism. In short, it is inadmissible to put assumptions like optimization, equilibrium, decreasing returns, perfect competition etcetera into the premises. This mistake is known as petitio principii and J. S. Mill, the founder of economic methodology, dealt with it at length in his System of Logic (see also 2014e).

The crucial point is: standard economics is based on behavioral axioms (McKenzie, 2008) and this is not a solid enough foundation.

"... if we wish to place economic science upon a solid basis, we must make it completely independent of psychological assumptions and philosophical hypotheses." (Slutzky, quoted in Mirowski, 1995, p. 362)

Axel Leijonhufvud sees this quite clearly: "Our axioms are, after all, a good deal shakier than Euclid's." Indeed, but then comes the Great Heterodox Methodological Horror.

Instead of replacing the shaky behavioral axioms with something objective and solid, Heterodoxy rejects the axiomatic-deductive method (2012a). Does it really come as a surprise that since Lawson has written about open systems Heterodoxy has not produced much of scientific value? Instead it has become the most outspoken proponent of the pluralism of wish-wash.

Note that the profit theory of Keynes, Kalecki, or Keen, for example, is as far away from reality as any mainstream profit theory, "... surely, therefore, they fail to capture the essence of a capitalist market economy." (Obrinsky, 1981, p. 495)

Each paradigm stands or falls with its premises. For the scientific beginners among economists it is all in Wikipedia URL http://en.wikipedia.org/wiki/Posterior_Analytics:

"When the premises are certain, true, and primary, and the conclusion formally follows from them, this is demonstration, and produces scientific knowledge of a thing." (Aristotle, Analytica)

For the correct axiomatic foundations of the open market system see (2014a). Seventeen years of methodological distortion are over for Lars P. Syll – thank Heaven and Euclid.

7.2 Scientific thinking: Aristotle is right, Leijonhufvud is wrong

Each paradigm stands or falls with its premises.

The axiomatic foundations of Orthodoxy are wrong and this fully explains its failure. From this does not follow that axiomatization is wrong. This is Leijonhufvud's error.

7.3 How to look at reality

When Galileo stood in the cathedral of Pisa and watched the swinging chandelier, as certainly many had done before him without much reflection, he asked himself: how much time does the pendulum need for a full swing and what does the period depend on?

He did not ask: do my fellow citizens pursue happiness, or do they maximize utility, or who will eventually go to heaven, to hell, or to Bedlam? He somehow felt that the chances were good that he could answer the first question and nil that he could answer the second.

As a genuine scientist he was content with the petty problem of time, length and weight and left the really big, important, interesting, fateful and insoluble questions of humankind to the so-called social sciences. And there they remained, after countless promising attempts and the application of the most powerful analytical tools, unsolved up to the present day.

When they founded science and sought the material principle of things, the ancient Greeks in effect excluded psychology. We know today that this was a wise demarcation.

Economics could not emancipate itself from the social sciences. The axioms of rationality formalize a rather unconvincing variety of psychology. There is nothing wrong with axiomatization to be sure, only with psychology (2014e). An economist who philosophizes about optimizing human behavior is dislocated — he finds himself on the wrong side of the line that demarcates science from non-science. Neither naive empirical realism, nor ill-understood formalization, nor rhetoric helps to the other side.

Demarcation may be difficult in every concrete case, but it is not negotiable. No serious methodologist could ever let orthodox or heterodox economics pass as science. The flaws are obvious and numerous.

Physicists know the Law of the Lever. And it is almost trivial. Economists cannot tell the difference between profit and income (2014i) but they are pretty sure about what is good and what is bad in the economy and, above all, who has to be blamed for the latter.

Not to forget, they are pretty sure about what a distorted understanding of reality is.

7.4 Glory

"In tradition standard economic textbooks, the market phenomena are described in the framework of laws of supply and demand and market equilibrium. Historically this framework has been widely criticized over centuries by different schools of economic thoughts. However, other economic schools have not come up a different and convincing framework." (Wayne, 2014, p. 14)

There is no understanding of the fundamental economic phenomena. This is what Heterodoxy has always criticized. So far, so good. Yet, Lawson's new ontology/methodology also flat-lined (2012a), thus verifying Popper – at least as economic methodology is concerned.

"Profound truth are not to be expected of methodology." (Popper, 1980, p. 54)

The dustbin is full. Time to come up with a consistent theoretical framework.

"It is brilliance of imagination which makes the glory of science." (G. C. Evans, in Weintraub, 2002, p. 57)

7.5 The happy end of distortion

The outstanding characteristic of physicists/engineers is that they clearly see the green cheese assumptionism of economics. Here is the key scene:

"The physicists were shocked at the assumptions the economists were making – that the test was not a match against reality, but whether the assumptions were the common currency of the field. I can just see Phil Anderson, laid back with a smile on his face, saying, 'You guys really *believe* that?"

The economists, backed into a corner, would reply, "Yeah, but this allows us to solve these problems. If you don't make these assumptions, then you can't do *anything*." And the physicists would come right back, "Yeah, but where does that get you – you are solving the wrong problem, if that's not reality." (Waldrop, 1993, p. 142)

And physicists/engineers draw the correct conclusions:

"When Phil Anderson first heard about the theory of Rational Expectations in the famous 1987 Santa Fe meeting, his befuddled reaction was: *You guys really believe that?* He would probably have fallen from his chair had he heard Milton Friedman's complacent viewpoint on theoretical economics: *In general, the more significant the theory, the more unrealistic the assumptions.* Physicists definitely want to know what an equation means in intuitive terms, and believe that assumptions ought to be both plausible and compatible with observations. This is probably the most urgently needed paradigm shift in economics." (Bouchaud, 2009, pp. 7-8)

But then physicists/engineers walk straight into the wood, that is, they apply what they have learned in their respective courses, that is, they resort to sheer toolism. See my comment 'Yes, listen to the Econophysicists':

http://rwer.wordpress.com/2014/10/15/modern-macroeconomics-and-the-perils-of-using-mickey-mouse-model #comment-82042

This is how marginalism, chaos theory, complexity theory and recently the Schrödinger equation came to economics. Thus, it were physicists/engineers who messed the whole thing up in the first place (Mirowski, 1995).

For the undistorted three-dimensional view of supply and demand on the product market click here:

https://commons.wikimedia.org/wiki/File:AXEC_001.png

And for the successful methodological shift from two-dimensional supply-demandequilibrium to the correct market paradigm see (2014a); it is hard stuff for physicists/engineers who cling to the notes of their introductory courses.

7.6 The way ahead Summary

- There is almost unanimous agreement that orthodox macroeconomics is a failed approach.
- Heterodoxy has meticulously worked out the weak spots and provided clues for improvement.
- However, Keynes's and others' alternative approaches are halfway houses.
- Heterodoxy is stuck in the methodological discussion about the best way to proceed.
- Helpers from other fields (physicists, biologists, historians, psychologists, sociologists, mathematicians, engineers, etcetera) have repeatedly tried their tools and tricks to no great effect.
- The definition 'Economics is the science which studies human behavior as a relationship between ends and scarce means which have alternative uses' has misled research in the direction of pseudo-sociology and pseudo-psychology.
- Looking around elsewhere for solutions does not work. Economists have to do the paradigm shift themselves.
- Ingenuity replaces critique as Heterodoxy's primary virtue.
- There is no political presetting about what the new paradigm should look like.
- The new paradigm must only satisfy the criteria of material and formal consistency.
- Economists voluntarily refrain from giving policy advice until they have worked out the true theory.

7.7 Addendum to: The way ahead

- "People who say it cannot be done should not interrupt those who are doing it." G. B. Shaw
- "What particular reality is described by a given theory can be ascertained only from that theory's axiomatic foundation." N. Georgescu-Roegen
- Psychological, sociological or behavioral assumptionism cannot yield anything else than a gossip model of the world. Second-guessing the agents is not economic analysis.
- "Nothing is clear and everything is possible" (Keynes) is poor science but good enough to avoid outright refutation. Inconclusiveness is the scholar's magic cap.

7.8 Manifest distortions What the 20 top heterodox economists say

In its present state, economics is unsatisfactory. Most economists can agree with this, albeit for different reasons. It is not surprising then that blaming and debunking flourish. Not much can be said against this, except that it is a detour. As Schumpeter, one of the 20 top heterodox economists (see link below), already noted:

"If we feel misgivings nevertheless, all we have to do is to start appropriate research. Anything else is pure filibustering." (1994, p. 577)

So, what is urgently needed is a paradigm shift. Is Heterodoxy following Schumpeter's advice? What can be seen all around resembles nothing so much as pure filibustering.

The two criteria of science are material and formal consistency. The latter is guaranteed by the axiomatic-deductive method. What does Georgescu-Roegen, one of the 20 top heterodox economists, say about axiomatization (= arithmetization in his terminology)?

"Lest this position is misinterpreted again by some casual reader, let me repeat that my point is *not* that arithmetization of science is undesirable. Whenever arithmetization can be worked out, its merits are above all words of praise. My point is that wholesale arithmetization is impossible, that there is valid knowledge even without arithmetization, and that mock arithmetization is dangerous if peddled as genuine." (Georgescu-Roegen, 1971, p. 15)

Repeat: the merits of axiomatization are above all words of praise (if properly applied, of course, which is not the case with Orthodoxy).

Tony Lawson, also one of the 20 top heterodox economists, on the other hand does not get tired since 17 years of characterizing deductivism as the main culprit of all that went wrong in economics. "In his seminal book Economics and Reality (1997) Tony Lawson traced this irrelevance to the failure of economists to match their deductive-axiomatic methods with their subject." (see L. P. Syll's post)

It would be helpful to learn who of the two top heterodox economists is right on methodology.

We can agree that the axioms of Orthodoxy are uncertain and false. This fully explains its failure. But what about the premises and the formal consistency of Heterodoxy?

The profit theories of Marx, Schumpeter, Keynes, Kalecki, Davidson, Minsky, Keen, all on the list of the 20 top heterodox economists, are demonstrably false (2014f; 2011d; 2011f; 2011e; 2013b). Despite the obvious fact that they cannot all be correct at the same time, all are propagated under the banner of pluralism as heterodox alternatives. As it happens, they are all different *and* false. Real scientists would feel the need to clear up this internal contradiction and not to hail it as freedom of opinion.

Is the heterodox understanding of economic reality less or just as confused as DSGE or even worse if that is possible at all (2013a)?

By not strictly insisting on material and formal consistency Orthodoxy and Heterodoxy in effect cooperate on the widely visible crappyfication of economics.

Link to top 20:

http://larspsyll.wordpress.com/2014/02/28/top-20-heterodox-economics-books/

7.9 Economics is different from psychology/sociology/philosophy

You say: "... perhaps it is time to draw this "Socratic dialogue" to a close."

It seems that you have lost your way. This blog is about theoretical economics, not about philosophy. Because the philosopher's last resort is the great solidarity of ignoramuses (I know that I know nothing), economists have to gain the widest possible distance to the morass of philosophical confusion. Scientists and philosophers have parted company long ago.

A scientific discourse (the very opposite of the filibuster of the so-called social sciences, see Feynman about cargo cult science in Wikipedia) always leads to concrete results. And here they are:

- Orthodoxy is a failure.
- Heterodoxy is a failure.
- Psychology/sociology/philosophy are out of science.

• There never was and there never can be a 'Socratic dialogue' in theoretical economics.

7.10 Science is about facts

There is economic reality, which is not directly observable in its totality, and there is economics as a mental reconstruction of the real thing. With regard to the latter the fact of the matter is:

- Orthodoxy is a failure.
- Heterodoxy is a failure.

There is no economics and from this fact all thinking has to start.

7.11 Economics – an intelligence test?

You ask ... "why should intelligent people look to economists at all to learn about how economies function?"

I have no idea what intelligent people should or should not do. What is well known, however, is that people with some generally accepted scientific qualification have looked at economics for enlightenment. And this is what they came up with:

"Economics is a perplexing subject. Though I have spent the better part of my academic career thinking about its aims and methods, I have never been confident that I or anyone else for that matter really understand its cognitive status. ... Without assurance about the cognitive status of the theory, there is no basis of confidence in it." (Rosenberg, 1994, p. 216)

"The physicists were shocked at the assumptions the economists were making – that the test was not a match against reality, but whether the assumptions were the common currency of the field. I can just see Phil Anderson, laid back with a smile on his face, saying, 'You guys really *believe* that?'" (Waldrop, 1993, p. 142)

Of course, we could go on for a while in this vein (see 2014i; 2014a; 2013a).

People come to economics because they want to learn how the economy works (hopefully – but then we may second-guess until we are blue in the face). In any case, what they realize is that economists have no true theory whatever. The intelligent observer invariably arrives at:

- Orthodoxy is a failure;
- Heterodoxy is a failure.

8 Moral incompetence or scientific incompetence? Comment on 'University economics departments must share the blame'

URL http://rwer.wordpress.com/2014/11/17/university-economics-departments-must-share-the-blame/

Hugh Goodacre blames academic economics for its indirect or even direct justification of the financial sector's culture of ruthless money making. And he gives weight to his argument by quoting Krugman stating that 'the economist is a maximisingminimising kind of guy.'

It is simply naive to suggest that people of the financial sector (i) need a justification for money making, and (ii) that they need academic economics for that purpose.

History shows that for any ruthless person in whatever walk of life Darwinism delivers a far stronger justification than the extremum principle. Economics has copied this principle simply from physics and physics ultimately had it from religion.

"Already Maupertuis considered his minimum principle as proof that the world, where among many virtual movements the one leading to maximum effect with minimum effort is realized, is the 'best of all worlds' and work of a purposeful creator. Euler made a similar remark: 'Since the construction of the whole world is the most eminent and since it originated from the wisest creator, nothing is found in the world which would not show a maximum or minimum characteristic.' ..." (von Bertalanffy, 1969, p. 75)

Nobody blames physics or religion for the latest financial crisis.

The extremum principle is an almost instinctive and tautological way of explanation.

"Throughout its history, the idea of some 'Fundamental Assumption', some basic 'Economic Principle' about human conduct, from which much or most of economics can ultimately be deduced, has been deeply rooted in the procedure of economic theory. Some such notion is still, in many quarters, dominant at the present time. For example, it has recently been stated that the task of economics is 'to display the structure and working of the economic cosmos as an outgrowth of the maximum principle'." (Hutchison, 1937, p. 636)

When Krugman states that 'the economist is a maximising-minimising kind of guy' he affirms the trivial fact that he has studied economics and that he thinks that he has understood what economics is all about. And here the problem begins.

Let us make it short: No way leads from a behavioral assumption (optimization or otherwise) to the understanding of how the economy works (2014i). The crucial point is that standard economics is based on behavioral axioms (McKenzie, 2008) and this is not a solid enough foundation.

"... if we wish to place economic science upon a solid basis, we must make it completely independent of psychological assumptions and philosophical hypotheses." (Slutzky, quoted in Mirowski, 1995, p. 362) Economists owe the world the true economic theory, that is, a theory that satisfies the scientific standards of material and formal consistency and that explains how the economy works.

Economists have not delivered. That economics is not yet a science is the only fact that university departments justly can be blamed for.

9 The Saving=Investment Fallacy

URL http://www.asepp.com/savinginvestment-fallacy/

9.1 Confused confusers

You write: "Saving=Investment" is axiomatic in macroeconomics as it is taught in basic textbooks, found in advanced research and assumed in national statistics. Yet it is a fallacy which can be traced to Keynes (1936, p.63) where he defined saving as "the excess of income over consumption" in a framework of equilibrium circular flow of national income."

You put the finger exactly on the critical error/mistake. To see this clearly, however, one has to take the decisive analytical step. Keynes's problem started with profit.

"His *Collected Writings* show that he wrestled to solve the Profit Puzzle up till the semi-final versions of his *GT* but in the end he gave up and discarded the draft chapter dealing with it." (Tómasson and Bezemer, 2010, p. 12)

Now comes the chain reaction of errors/mistakes: when profit is not correctly defined, income is not correctly defined, and then saving is not correctly defined. It is with profit where the confusion about saving "equals" investment starts. The conceptual mess has been verbally papered over with ex ante/ex post and the representative economist has swallowed all this hook, line and sinker.

For the formally correct solution see my recent paper (2014i). It should be mentioned that there is monetary and nonmonetary profit and correspondingly monetary and nonmonetary saving. Here we deal exclusively with monetary profit and saving.

Because neither Keynes nor the Post-Neo-New Keynesians have solved the profit puzzle and with it the saving-investment puzzle, they are out of science (2013f).

The profit theory of Keynes, Kalecki, or Keen, for example, is as far away from reality as any mainstream profit theory, surely therefore, both Heterodoxy and Orthodoxy "fail to capture the essence of a capitalist market economy." (Obrinsky, 1981, p. 495)

Economists owe the world the true economic theory, that is, a theory that satisfies the scientific standards of material and formal consistency and that explains how the economy works. Formal consistency requires to start with an objective set of axioms and then to proceed in the logically correct way. I = S is the widely visible monument of confused thinking and lack of genuine scientific instinct of both Orthodoxy and Heterodoxy.

Here is the correct equation that relates profit Q_m , distributed profit Y_D , investment expenditure *I*, and household sector saving *S*:

https://commons.wikimedia.org/wiki/File:AXEC09.png

For equilibrium as a nonentity see:

http://rwer.wordpress.com/2014/11/06/still-dead-after-all-these-years-general-equilibrium-theory/ #comment-82985

9.2 No more critique of economics, please!

In its present state, economics is unsatisfactory. Most economists can agree with this. It is not surprising then that complaining and debunking has almost become a sub-discipline of economics. Not much can be said against this, except that it is a detour. As Schumpeter already noted:

"If we feel misgivings nevertheless, all we have to do is to start appropriate research. Anything else is pure filibustering." (1994, p. 577)

Or, Blaug, in even stronger words:

"The moral of the story is simply this: it takes a new theory, and not just the destructive exposure of assumptions or the collection of new facts, to beat an old theory." (1998, p. 703)

The problem is that conventional economics has so many obvious defects that it is not at all clear where to start. Here, Keynes pointed the way:

"For if orthodox economics is at fault, the error is to be found not in the superstructure, which has been erected with great care for logical consistency, but in a lack of clearness and of generality in the premises." (1973, p. xxi)

And this leads back to the question that J. S. Mill posed at the very beginning of theoretical economics:

"What are the propositions which may reasonably be received without proof? That there must be some such propositions all are agreed, since there cannot be an infinite series of proof, a chain suspended from nothing. But to determine what these propositions are, is the *opus magnum* of the more recondite mental philosophy." (2006a, p. 746)

And this leads even further back to the beginning of science:

"When the premises are certain, true, and primary, and the conclusion formally follows from them, this is demonstration, and produces scientific knowledge of a thing." (Aristotle, Analytica, URL https://en.wikipedia.org/wiki/Posterior_Analytics)

The premises of Orthodoxy are uncertain and false and this fully explains its failure. What exactly are the premises?

"As with any Lakatosian research program, the neo-Walrasian program is characterized by its hard core, heuristics, and protective belts. Without asserting that the following characterization is definitive, I have argued that the program is organized around the following propositions: HC1 *economic agents have preferences over outcomes*; HC2 *agents individually optimize subject to constraints*; HC3 *agent choice is manifest in interrelated markets*; HC4 *agents have full relevant knowledge*; HC5 *observable outcomes are coordinated, and must be discussed with reference to equilibrium states*.

By definition, the hard-core propositions are taken to be true and irrefutable by those who adhere to the program. 'Taken to be true' means that the hard-core functions like axioms for a geometry, maintained for the duration of study of that geometry.' (Weintraub, 1985, p. 147)

Note well that these axioms have only taken to be true and irrefutable by the adherents of Orthodoxy. They are by no means irrefutable for anybody else.

"If a professional group regards itself a having a message to deliver to others than its own members and makes any public claims in that respect, it thereby gives others the right to scrutinize the methods whereby that message was discovered, including the principles, or possibly prejudices, followed in choosing premises. They continue to do so. Cunningham in 1891 remarked that in the choice of premises 'it is not always easy to tell when a professor of the dismal science is making a joke' and I suspect that Cunningham meant that if the professor was not joking, then he was making a fool of himself." (Viner, 1963, p. 12)

So, everyone who does not want to make a fool of himself has no choice but to come up with a new set of axioms (see 2014e).

9.3 Testing is better than critique

I certainly do not want to stop you from testing existing theories. Just the contrary, I explicitly encourage testing of the structural axiom set and its logical implications in my mission statement http://www.axec.org/#!identity/c1i98 and elsewhere in my papers.

This brings me right back to our starting point. So, let us put methodological questions for a moment aside. You said that I = S is a fallacy. I agree. Not only this, I present the correct relation. It is this one:

https://commons.wikimedia.org/wiki/File:AXEC09.png

This is the relation for the investment economy. It gets a bit more complex if foreign trade and government is included. But that is not the point at issue at the moment. The equation says that household sector saving and business sector investment are never equal. And this is sufficient in the first round to empirically refute the standard approach.

Now the rest is quite simple. You have the data. A cursory comparison of the data with the formula above will convince you that the formula is essentially correct. Then the crucial test has to be designed.

What will the outcome of this test be? The structural axiom set will be corroborated with an accuracy of two decimal places. This is how science works:

"Whether an axiom is or is not valid can be ascertained either through direct experimentation or by verification through the result of observations, or, if such a thing is impossible, the correctness of the axiom can be judged through the indirect method of verifying the laws which proceed from the axiom by observation or experimentation. (If the axiom is deemed to be incorrect it must be modified or instead a correct axiom must be found.)" (Morishima, 1984, p. 53)

This answers the first question of your comment: "How do you know (or prove) that your new set of axioms is better than the old set?" Then, obviously, there is no urgent need to discuss the rest.

In light of your comment, a better title of my previous contribution would have been: No more filibuster about economics, test the axioms!

9.4 Method

It is not a matter of taste, or feeling, it is a matter of method, which implies testing:

"Reason gives the structure to the system; the data of experience and their mutual relations are to correspond exactly to consequences in the theory. On the possibility alone of such a correspondence rests the value and the justification of the whole system, and especially of its fundamental concepts and basic laws. But for this, these latter would simply be free inventions of the human mind which admit of no *a priori* justification either through the nature of the human mind or in any other way at all." (Einstein, 1934, p. 165)

9.5 All problems settled – free way ahead

It is gratuitous to play ping-pong with Einstein quotes and to cook up the inductiondeduction discussion once more. Schumpeter has already settled the matter.

"... there is not and cannot be any fundamental opposition between 'theory' and 'fact finding,' let alone between deduction and induction." (1994, p. 45)

Science is about two, repeat two, consistencies:

"Research is in fact a continuous discussion of the consistency of theories: formal consistency insofar as the discussion relates to the logical cohesion of what is asserted in joint theories; material consistency insofar as the agreement of observations with theories is concerned." (Klant, 1994, p. 31)

However, as a practical matter, theory comes first: "Indeed, there is no such thing as an uninterpreted observation, an observation which is not theory-impregnated." (Popper, 1994a, p. 58)

Those common sense people who are stating the seemingly plain fact that 'the sun goes up' do simply not realize that they are stating a hypothesis.

Theory in the proper sense is a free invention, the product of pure thought, and, lo and behold, this is exactly what Einstein said (note that he never observed a relativistic effect that kicked off his thinking):

"To this I answer with complete assurance, that in my opinion there is the correct path and, moreover, that it is in our power to find it. Our experience up to date justifies us in feeling sure that in Nature is actualized the ideal of mathematical simplicity. It is my conviction that pure mathematical construction enables us to discover the concepts and the laws connecting them which give us the key to the understanding of the phenomena of Nature. Experience can of course guide us in our choice of serviceable mathematical concepts; it cannot possibly be the source from which they are derived; experience of course remains the sole criterion of the serviceability of a mathematical construction for physics, but the truly creative principle resides in mathematics. In a certain sense, therefore, I hold it to be true that pure thought is competent to comprehend the real, as the ancients dreamed." (1934, p. 167)

The same holds, of course, in theoretical economics. Political economists, though, are too much occupied with pushing their agendas. Thus, they have neither time nor brain space left over for thinking.

So there is absolutely no problem here. Take the structural axiom set or one of its logical implications and test them. Thus, you and I together are doing really good science.

To recall, those who have filibustered about induction-deduction have achieved nothing of scientific value until this sunny morning and will not in the foreseeable future.

10 A failure of reason Comment on Lars P. Syll's 'Filtering nonsense economics'

URL http://rwer.wordpress.com/2014/11/13/filtering-nonsense-economics/

More than hundred years ago ...

"Walras approached Poincaré for his approval. ... But Poincaré was devoutly committed to applied mathematics and did not fail to notice that utility is a nonmeasurable magnitude. ... He also wondered about the premises of Walras's mathematics: It might be reasonable, as a first approximation, to regard men as completely selfinterested, but the assumption of perfect foreknowledge 'perhaps requires a certain reserve." (Porter, 1994, p. 154)

This was in the old days. But certainly economics has made tremendous progress. Or has it?

"An economic theory or model that doesn't pass the real world smell-test is just silly nonsense that doesn't deserve our attention and therefore belongs in the dustbin. Rational expectations immediately comes to mind." (quote from the introductory post)

It was green cheese assumptionism then, but today it is even worse. Everybody has the greatest peer-reviewed scientific aberration since Geo-centrism before his very eyes. A big chance for Heterodoxy to turn things around one would think. But no. Heterodoxy is quite content with reiterating Poincaré and propagating its own brand of assumptionism.

The profit theory of Keynes, Kalecki, or Keen, for example, is as far away from reality as any mainstream profit theory (2014i; 2011e; 2013b), "... surely, therefore, they fail to capture the essence of a capitalist market economy." (Obrinsky, 1981, p. 495)

Economists owe the world the true economic theory, that is, a theory that satisfies the scientific standards of material and formal consistency and that explains how the economy works.

Since Poincaré wondered about the premises of Walras's mathematics a paradigm shift is overdue. But no promising alternative has emerged until now.

"... the omnipresence of a certain point of view is not a sign of excellence or an indication that the truth or part of the truth has at last been found. It is, rather, the indication of a *failure of reason* to find suitable alternatives which might be used to transcend an accidental intermediate stage of our knowledge." (Feyerabend, 2004, p. 72)

After more than hundred years the talk of nonsense economics becomes itself nonsensical.

11 It's all in the structural employment equation – end of discussion Comment on 'The low wages fallacy'

URL http://larspsyll.wordpress.com/2014/11/14/the-low-wages-fallacy/

When one switches from the obsolete subjective-behavioral approach to the correct objective-structural paradigm then one gets this employment equation for the business sector as a whole under the condition of product market clearing:

https://commons.wikimedia.org/wiki/File:AXEC07.png

The equation says that employment L increases with

- investment expenditures I,
- an increasing expenditure ratio ρ_E (i.e., average propensity to consume),
- an increasing wage rate W,

if price P and productivity R in the consumption and investment industry as well as distributed profit remain unaltered in the period under consideration. A falling wage rate for the business sector as a whole increases unemployment.

The testable structural employment equation (2014i, eq. (22)) is general; it includes the working of the wage-price mechanism and contains Keynes's argument as a special case. And it holds under inflationary and deflationary conditions.

12 DSGE is simply out of science Comment on Peter Radford's 'DSGE is a plutocratic tool'

URL http://rwer.wordpress.com/2014/11/08/dsge-is-a-plutocratic-tool/

12.1 Agenda pushers, hijackers, and scientists

It is trivial but worth repeating: political economics and theoretical economics are different things. The goal of political economics is to push an agenda, the goal of theoretical economics is to explain how the economy works. The core problem of economics as a science is, of course, that by its very nature it is closely entangled with politics. The biggest threat to theoretical economics is that it gets hijacked by those with a political agenda. It does not matter whether this agenda is good or bad in preset moral terms. Science is committed to its own criteria or it ceases to be science.

But are we not all inescapably involved in the struggle between good and evil? Politics, religion, and philosophy say so. But even if this were true this would be no justification to hijack science or to let it be hijacked. What has to be recognized is that science is about true/false and not about good/evil. This distinction is part of the demarcation problem, which is the fundamental problem of methodology (Popper, 1980, p. 34). Since the ancient Greeks the first act of science is to throw out politics, religion, and philosophy.

Because there is theoretical and political economics there are two types of inquirers.

"A genuine inquirer aims to find out the truth of some question, whatever the color of that truth. ... A pseudo-inquirer seeks to make a case for the truth of some proposition(s) determined in advance. There are two kinds of pseudo-inquirer, the sham and the fake. A sham reasoner is concerned, not to find out how things really are, but to make a case for some immovably-held preconceived conviction. A fake reasoner is concerned, not to find out how things really are, but to advance himself by making a case for some proposition to the truth-value of which he is indifferent." (Haack, 1997, p. 1)

Let us make no mistake: politics is legitimate, to influence public opinion is legitimate, yet all this has nothing to do with science.

"Apologetics may be a laudable objective. Its practical importance is unquestioned. People need to be shown that the institutions of their own society are good, those of others bad. But there is no place for apologetics in science. Scientific economics inquires only into the How and Why, not into the Good or Bad, of what is. From the scientific point of view preoccupation with Good and Bad is worse than useless since it not only fails to illumine anything but keeps the lightbeam of inquiry from being turned in directions where answers to significant questions can be found." (Murad, 1953, p. 2)

The classical economists started openly as agenda pushers. They had only different agendas.

Smith: "But in the introduction to Book IV we read that Political Economy 'proposes to enrich both the people and the sovereign,' and it is this definition which expresses both what Smith wanted above everything and what interested his readers more than anything else." (Schumpeter, 1994, p. 186)

Mill: "... John Stuart Mill wrote ..., that in the years around 1830 his circle (the so-called Philosophical Radicals) had adopted the following programme: they wanted to achieve an improvement in human society by 'securing full employment at high wages to the whole labouring population'." (Popper, 1994a, p. 188)

The rest: "The old-fashioned political economist adored, as alone capable of redeeming the human race, the glorious principle of individual greed, although, as this principle requires for its action hypocrisy and fraud, he generally threw in some dash of inconsistent concessions to virtue, as a sop to the vulgar Cerberus." (Peirce, 1931, 1.75)

Marx and Keynes, too, were noteworthy agenda pushers. The same holds for Hayek and Friedman. All these economists used economics for political purposes. This is unacceptable. Note well, it does not matter what the respective agenda is – each attempt to instrumentalize science is unacceptable.

Since Adam Smith all economists are committed to science as they understand it.

"Now there is simply no doubt that whatever was the source of inspiration for Jevons, Menger and Walras, all three invoked whatever physics they knew to lend prestige to their theoretical innovations. ... Adam Smith, Ricardo, James Mill and McCulloch had been just as eager in earlier days to invoke the name of Newton to legitimize their theoretical claims." (Blaug, 1989, p. 1226)

What exactly does this commitment entail?

"Research is in fact a continuous discussion of the consistency of theories: formal consistency insofar as the discussion relates to the logical cohesion of what is asserted in joint theories; material consistency insofar as the agreement of observations with theories is concerned." (Klant, 1994, p. 31)

Therefore, the core question of theoretical economics is not who benefits from a theory. The core question is how the actual economy works. By consequence, the decisive argument against DSGE is not that it benefits the Plutokrats but that it does not meet the criteria of material and formal consistency. DSGE is simply out of science.

12.2 Start again

If, as Nixon's adviser Roger Stone once quipped, politics is Hollywood for the ugly, then economics is science for the confused.

"Thousands upon thousands of scholars, as well as thousands of statesmen and men of affairs, have contributed their efforts to the attempt to understand the course of events of the economic world. And today this field of investigation is being cultivated more extensively, than ever before. How is it, then, that in all these years, and with all the undoubted talent that has been lavished upon it, the subject of economics has advanced so little?" (Schoeffler)

Could it be that there is something deeply wrong with economics? Could it be that economics has never emancipated itself from agenda pushers of all sorts? Could it be that economists have caught themselves in the endless circle of apologetics and debunking? Could it be that economists feel quite at home in the 'thickness of confusion' (Suppes)?

Economists owe the world the true economic theory, that is, a theory that satisfies the scientific standards of material and formal consistency and that explains how the economy works.

When Joan Robinson summarized the output of political economics she needed only six words: Scrap the lot and start again!

If she had to characterize the current DSGE discussion one word would be enough.

13 Economic theory – as false as ever Comment on Peter Temin and David Vines's 'Keynes – more important than ever'

URL http://larspsyll.wordpress.com/2014/11/04/keynes-more-important-than-ever/

You write: "We show how hard it was for Keynes to break away from previous theories that work well for individual people and companies – and even for the economy as a whole in the long run – to define the short run in which we all live."

You thereby acknowledge that pre-Keynesian economics, i.e. "previous theories", are valid except in the short run. That is to say, the Keynesian Revolution claims only the short run as its ecological niche and leaves the rest to what Keynes called the 'classicals'.

This is not only false modesty but downright nonsense. Why? Because 'classical' economics always has been invalid and it is still invalid in its recent reincarnations. Why?

Let us take the widest possible perspective. The fact of the matter is that neither Classicals, nor Walrasians, nor Marshallians, nor Marxians, nor Keynesians, nor Institutionialists, nor Monetary Economists, nor Austrians, nor Sraffaians, nor Evolutionists, nor Game theorists, nor Econophysicists, nor New Keynesians, nor New Classicals ever came to grips with profit (cf. Desai, 2008, p. 10). Hence, 'they fail to capture the essence of a capitalist market economy' (Obrinsky, 1981, p. 495).

Keynes, to his greatest honor, realized that there was something wrong with previous profit theories:

"His *Collected Writings* show that he wrestled to solve the Profit Puzzle up till the semi-final versions of his *GT* but in the end he gave up and discarded the draft chapter dealing with it." (Tómasson and Bezemer, 2010, pp. 12-13, 16)

Neither orthodox nor heterodox economists understand the two most important phenomena in the economic universe: profit and income (2014i; 2014a). This is like pre-Newtonian physics before the elementary concepts force and mass were clearly defined.

There seems to be complete ignorance among both orthodox and heterodox economists that they have nothing to offer in the way of a scientifically founded advice.

"In order to tell the politicians and practitioners something about causes and best means, the economist needs the true theory or else he has not much more to offer than educated common sense or his personal opinion." (Stigum, 1991, p. 30)

Because they lack a correct profit theory neither the proponents of the 'classical' nor of the Keynesian approach have a true theory that could help to fix a crisis or to make the world a better place.

14 Objection, your Honour! There is objective truth in economics Comment on 'Understanding capitalism'

URL http://larspsyll.wordpress.com/2014/11/10/understanding-capitalism/

It is proverbial that the representative economist does not know how the economy works. Many explanations and excuses have been advanced. Putting aside all individual specifics and possible exceptions for the moment, the main reason is this.

Neither Classicals, nor Walrasians, nor Marshallians, nor Marxians, nor Keynesians, nor Institutionialists, nor Monetary Economists, nor Austrians, nor Sraffaians, nor Evolutionists, nor Game theorists, nor Econophysicists, nor RBCers, nor New Keynesians, nor New Classicals ever came to grips with profit (cf. Desai, 2008). Hence, 'they fail to capture the essence of a capitalist market economy' (Obrinsky, 1981, p. 495).

Neither orthodox nor heterodox economists understand the two most important phenomena in the economic universe: profit and income (2014i). And, clearly, if the premises of a theory are muddled the whole thing ends up in intellectual nirvana. Economics still stands where physics stood in the Middle-ages before the concepts of force and mass were properly defined and clearly understood.

"We are not yet out of the wood; in fact, we are not yet in it." (Schumpeter, 1994, p. 7)

To conclude from the plain fact that the representative economist is a confused confuser (2013a) that "There is no objective truth in economics" seems rather far-fetched.

15 Economists do not solve problems, they are the problem Comment on Roger Farmer's 'Economists – not mathematics – solve economic problems'

URL http://larspsyll.wordpress.com/2014/11/06/economists-not-mathematics-solve-economic-problems/

It is widely known that the representative economist does not understand how the economy works. Many explanations have been advanced. One of them is that economists have serious troubles with mathematics. The trouble, though, is twofold: economists either reject or accept mathematics but always for the wrong reason.

When economics was young, calculus was the new and tremendously successful tool. So economists copied it (Mirowski, 1995) and this is how marginalism became the chief tool of explanation. This was the first methodological mistake.

"The mathematical language used to formulate a theory is usually taken for granted. However, it should be recognized that most of mathematics used in physics was developed to meet the theoretical needs of physics. ... *The moral is that the symbolic* calculus employed by a scientific theory should be tailored to the theory, not the other way round." (Wittgenstein, quoted in Schmiechen, 2009, p. 368)

It has been realized by many observers that utility maximization, equilibrium, perfect competition, etcetera was the unacceptable part of economic theory and not the application of mathematics.

"When very sound and proper mathematics is misused and misapplied to fairyland problems without any basis in the real world, that fact that the mathematics itself is impeccable makes the whole obnoxious game just that more offensive." (Blatt, 1983, p. 173)

To blame mathematics for its abuse in economics is simply wrong-headed.

"Mathematics is not really of much fundamental use in a science unless that science is able to constitute its basic concepts with "exact axioms" and precise numerical results." (Weintraub, 2002, p. 26)

Ultimately economists got the basic concepts wrong. Conventional economics rests on behavioral assumptions that are formally expressed as axioms (McKenzie, 2008). Axioms are indispensable to build up a theory that epitomizes formal and material consistency. The fatal flaw of the standard approach is that human behavior does not yield to axiomatization.

As a matter of fact, no way leads from psychologism of any sort to the understanding of how the actual economy works. The solution consists in replacing behavioral axioms by objective structural axioms (2014i).

16 Nonentity: the emptiness of economic thinking Comment on 'Still dead after all these years – general equilibrium theory'

URL http://rwer.wordpress.com/2014/11/06/still-dead-after-all-these-years-general-equilibrium-theory/

The discussions among physicists, for example, became enormously productive just by no longer applying concepts like perpetual motion machine or epicycle because these words signify nonentities. It took some time to find this out. The specific difficulty with nonentities is sometimes that they cannot be readily recognized or disproved. It is simple with the Easter Bunny and rather demanding with the concept of absolute space.

Likewise, students of economics can gain a wealth of time by immediately stopping to read an article or a book as soon as the concept of equilibrium is introduced.

Equilibrium, or by implication disequilibrium, is a nonentity. Of course, there are some other nonentities in conventional economics but equilibrium is the most wasteful.

Note well that Keynesians could never emancipate themselves from equilibrium thinking.

"Keynesian economics also provided crucial impetus to the development of two other key developments of the middle part of the century – general-equilibrium reasoning in economic theory, and simultaneous-equation modelling in econometrics." (Woodford, 1999, p. 7), see also (2014i)

Identifying nonentities is one of the defining activities of science. In took the physicists about eighteen centuries to find out that epicycles are nonentities. As J. S. Mill put it: "Mankind in all ages have had a strong propensity to conclude that wherever there is a name, there must be a distinguishable separate entity corresponding to the name; ..."

General equilibrium is the economic counterpart of a perpetual motion machine; no real thing could possibly correspond to the name. The scientific content of all variants of equilibrium models is nil – it is superstition wrapped in mathematics. The fact that conventional economics clings to equilibrium does not testify for equilibrium but against conventional economics.

17 No idealization, only misunderstanding and misconstrual Comment on Jeff Madrick's 'The Invisible Hand – a brilliant idealization proved wrong by reality'

URL http://larspsyll.wordpress.com/2014/11/06/the-invisible-hand-a-brilliant-idealization-proved-wrong-by-re-

For Adam Smith the invisible hand never was an idealization.

"Moreover, Adam Smith used the phrase "invisible hand" on three dissimilar occasions in his writings and in each case it was employed, not to exemplify the Panglossian conclusion that markets always convert private "vices" like selfishness into public "virtues" like income and employment for all, but to demonstrate that, in Robert Burns's words, 'the best-laid schemes o' mice and men/Gang aft a-gley". (Blaug, 2001, p. 153)

Whatever Smith meant, the metaphor simply took a life of its own. So it has to be taken in the new sense.

The invisible hand metaphor reincarnated as General Equilibrium Theory and the attempt was made to rigorously prove it. This is laudable, because the worst feature of economics until today is the endless wish-wash about metaphors and half-baked concepts. However, this attempt did not succeed.

"It is good to have [the technically best study of equilibria], but perhaps the time has now come to see whether it can serve in an analysis of how economies behave. The most intellectually exciting question of our subject remains: is it true that the pursuit of private interest produces not chaos but coherence, and if so, how is it done?" (Hahn, 1984, p. 102)

So, admittedly economists do not understand how the actual economy works. And from this follows that there is still some scientific homework to be done. For the correct account of how the markets work see (2014a).

18 Kalecki's definition of profit and income Comment on Jan Milch's 'Great Thinkers in Economics'

URL http://larspsyll.wordpress.com/2014/10/28/kalecki-on-sound-finance/

In the Section 'Kalecki's Theory of Profits and Output' we read: "On the other hand, given that income (gross) is distributed between capitalists and the wage earners, we have: Y = P + W (A2.2)." (López and Assous, 2010, p. 36)

This definition is commonsensical, often applied, and wrong. The correct definition reads: total income is the sum of wage income and distributed profit (2014i, p. 3, eq. (1)) and this gives the correct employment equation (p. 9, eq. (22)).

Profit and distributed profit are different things. Since more than 200 years neither orthodox nor heterodox economists have got the point. Unfortunately Kalecki is one of them. Clearly, when the profit theory is false the other parts of a comprehensive approach are open to doubt.

Heterodoxy can gain an immense advantage if it rectifies its foundational concepts faster than Orthodoxy. And there is no alternative to rectification.

19 What economists need now – the correct theory Comment on Paul Davidson

URL http://larspsyll.wordpress.com/2014/11/01/what-the-world-needs-now-john-maynard-keynes/

In my papers I have quoted you saying:

"..., before accepting the conclusions of any economist's model as applicable to the real world, the careful student should always examine and be prepared to criticize the applicability of the fundamental postulates of the model; for, in the absence of any mistake in logic, the axioms of the model determine its conclusions." (Davidson, 2002, p. 41)

Currently, economists do not understand how the economy works. We therefore have good reason to look closely at the axiomatic foundations.

I agree with you that standard economics has been refuted once and for all and that its axioms are unacceptable. Perhaps you do not agree with me that Post Keynesianism has been refuted, too (2011f; 2014i).

But certainly you remember that Keynes has called for a paradigm shift: "Yet, in truth, there is no remedy except to throw over the axiom of parallels and to work out a non-Euclidean geometry. Something similar is required to-day in economics." (Keynes, 1973, p. 16)

Perhaps it is a really good idea to make a fresh attempt with a 'non-Walrasian-Keynesian' set of objective structural axioms (see 2014a).

20 The real difficulty with new ideas is that economists had none Comment on 'Keynes's fundamental insight'

URL http://larspsyll.wordpress.com/2014/10/26/keyness-fundamental-insight/

First of all one has to distinguish between theoretical and political economics. Politics is put aside here. Keynes valuable insights for theoretical economics are:

(i) Conventional (=classical) economic theory is false and has been refuted once and for all by the Great Depression.

(ii) The mistakes are located in the premises: "For if orthodox economics is at fault, the error is to be found not in the superstructure, which has been erected with great care for logical consistency, but in a lack of clearness and of generality in the premises." (Keynes, 1973, p. xxi)

(iii) The indispensable paradigm shift requires the replacement of old premises by a new set of axioms: "The classical theorists resemble Euclidean geometers in a non-Euclidean world who, discovering that in experience straight lines apparently parallel often meet, rebuke the lines for not keeping straight – as the only remedy for the unfortunate collisions which are occurring. Yet, in truth, there is no remedy except to throw over the axiom of parallels and to work out a non-Euclidean geometry. Something similar is required to-day in economics." (Keynes, 1973, p. 16)

Results of the Keynesian Revolution:

(i) Keynes could not perform the paradigm shift in a formally acceptable way (2011b).

(ii) Post-Neo-New Keynesians were so occupied with 'What Keynes really meant' that they could not rectify the General Theory until today (2011f).

(iii) Theoretical economics is still groping in the dark in the no man's land between old and new ideas (2013a).

Blaug's fundamental insight:

"Nothing is more difficult than to turn an entire discipline around, asking in effect to jettison its own history over the last 200 years." (Blaug, 1990, p. 205)

It is not tremendously difficult as soon as one has got the correct axiomatic foundations. For the truly general employment equation, which contains Keynes's pivotal insight as a limiting case, see (2014i, eq. (22)).

21 Lacking the Midas touch of science Comment on Paul Pfleiderer's 'Real world filters and economic models'

URL http://larspsyll.wordpress.com/2014/11/01/real-world-filters-and-economic-models/

The characteristic capability of science – to turn whatever it might touch into knowledge – obviously has eluded economics. Currently, economists do not understand how the economy works. And there is no real difference between Orthodoxy and Heterodoxy despite much discussion about secondary points. The differences between the schools only demonstrate that there are many ways to get it wrong.

J. S. Mill excused economics in the inescapable benchmark comparison with physics as separate and inexact science. Indeed, when one compares the respective starting points – Newton and Smith – and the actual state of the fields then one is driven to the conclusion that in the course of time economics has fallen behind even farther.

Economics has always taken its inspirations from the real sciences. This includes methodology and theory design (Mirowski, 1995). It did not escape economists that the simplicity argument played a great role in physics.

"... in my opinion there is the correct path and, moreover, that it is in our power to find it. Our experience up to date justifies us in feeling sure that in Nature is actualized the ideal of mathematical simplicity." (Einstein, 1934, p. 167)

As untalented plagiarists economists used this argument and abused it for the justification of their cartoon science.

This is the correct way of simplification, abstraction and idealization:

The Principia begins with an idealized world, a simple mental construct, a "system" of a single mathematical particle and a centrally directed force in a mathematical space. Under these idealized conditions, Newton freely develops the mathematical consequences of the laws of motion that are the axioms of the Principia. At a later stage, after contrasting this ideal world with the world of physics, he will add further conditions to his intellectual construct – for example, by introducing a second body that will interact with the first one and then exploring further mathematical consequences. ... In this way he can approach by stages nearer and nearer to the condition of the world of experiment and observation, introducing bodies of different shapes and composition and finally bodies moving in variant types of resistant mediums rather than in free space. (Cohen, 1994, p. 77)

Standard economics, too, starts with an idealized world but then it does not move nearer and nearer to the world of experiment and observation but in the opposite direction in order to rationalize an unsuccessful initial idealization. Thus idealization, which is indispensable, becomes counterproductive. There is only a thin line between fruitful abstraction and barren absurdity. To assume that the moon is a mass point is unrealistic but fruitful, to assume that it is made of green cheese is unrealistic but nothing else. Most assumptions of conventional microeconomics fall into the green cheese category.

While science turns the junk of ignorance into the gold of knowledge, economics merely turns common sense junk into rigorous junk. Newton's most important methodological message was: hypotheses non fingo. Economists have done the opposite with much alacrity but little success.

Now, what is the fundamental error that unites Orthodoxy and Heterodoxy? It is psychologism:

"Psychologism is the view that in any explanation (individualist or otherwise) the *only* exogenous givens other than natural constraints allowed are those representing psychological states of either individuals or groups." (Boland, 1992, pp. 147-148)

To paraphrase H. L. Mencken: Psychologism is commonsensical, convincing, and wrong.

"The notion that microeconomics is a branch of applied mathematics does economists more credit than several possible alternative explanations for its empirical weakness. ... It isolates the limitations of the theory in a factual supposition about the determinants of human behavior, one that economists share with all of us. But the supposition we all share is false, and so economics rests on a purely contingent, though nevertheless central, mistaken belief" (Rosenberg, 1992, p. 247)

As a matter of fact, no way leads from psychologism of any sort to the understanding of how the actual economy works. The solution does not consist in replacing the unrealistic homo economicus by the realistic homo socialis. The solution consists in replacing behavioral axioms by objective structural axioms.

It is as simple as that:

"The basic concepts and laws which are not logically further reducible constitute the indispensable and not rationally deducible part of the theory. It can scarcely be denied that the supreme goal of all theory is to make the irreducible basic elements as simple and as few as possible without having to surrender the adequate representation of a single datum of experience." (Einstein, 1934, p. 165)

There is only one scientific method. And, in its present state, economics is not a separate and inexact science but a failed science.

22 Funny folks on the big omnibus Comment on 'Macroeconomic aspirations'

URL http://rwer.wordpress.com/2014/10/30/macroeconomic-aspirations/

"... economics is a big omnibus which contains many passengers of incommensurable interests and abilities." (Schumpeter, 1994, p. 827)

First of all one has to distinguish between theoretical and political economics. The goal of political economics is to push an agenda, the goal of theoretical economics is to explain how the actual economy works. From the viewpoint of science political economics as a whole is a no-go. The first problem in the economics omnibus is that the majority of passengers are agenda pushers of one sort or another. This has always been an impediment to scientific advance.

Currently, economists do not understand how the economy works.

"As Joan Robinson said, our essential object in economics is "to understand how the economic system works"; or, putting the emphasis differently, as did Keynes, "Is the economic system self-adjusting?" Sadly, we economists have so far done little to address, much less provide satisfying answers to the issues posed by Newcomb, Robinson, and Keynes. ... we know little more now about "how the economy works," or about the *modus operandi* of the invisible hand than we knew in 1790, after Adam Smith completed the last revision of *The Wealth of Nations*." (Clower, 1999, p. 401), see also (2014i; 2014a)

Keynes, too, was an agenda pusher but he clearly understood that nothing less than a paradigm shift would do in economics. His valuable insights for theoretical economics are:

(i) Conventional (=classical=orthodox) economic theory is false and has been refuted once and for all by the Great Depression.

(ii) The mistakes are located in the premises: "For if orthodox economics is at fault, the error is to be found not in the superstructure, which has been erected with great care for logical consistency, but in a lack of clearness and of generality in the premises." (Keynes, 1973, p. xxi)

(iii) The indispensable paradigm shift requires the replacement of old premises by a new set of axioms: "The classical theorists resemble Euclidean geometers in a non-Euclidean world who, discovering that in experience straight lines apparently parallel often meet, rebuke the lines for not keeping straight – as the only remedy for the unfortunate collisions which are occurring. Yet, in truth, there is no remedy except to throw over the axiom of parallels and to work out a non-Euclidean geometry. Something similar is required to-day in economics." (Keynes, 1973, p. 16)

Outcome of the Keynesian Revolution:

(i) Keynes could not perform the paradigm shift in a formally acceptable way (2011b).

(ii) Post-Neo-New Keynesians were so occupied with 'What Keynes really meant' that they could not rectify the General Theory until today (2011f).

(iii) Keynes could not 'throw over' the old axioms for good and this made the reappearance of 'dead ideas' (Quiggin, 2010) possible.

(iv) Theoretical economics is still groping in the dark in the no man's land between the obsolete and a new paradigm.

So here we are:

"Nothing is more difficult than to turn an entire discipline around, asking in effect to jettison its own history over the last 200 years." (Blaug, 1990, p. 205)

The first thing to do is to turn microeconomics around. There can be no microeconomic foundation of macroeconomics because the foundations of microeconomics itself are erroneous. For funny label-sticking Oxford macroeconomists there is still something to learn from Keynes.

23 A particularly silly critique Comment on Nick Bunker's 'Piketty and the elasticity of substitution'

URL http://larspsyll.wordpress.com/2014/10/23/piketty-and-the-elasticity-of-substitution/

23.1 Mind the premises

"A particularly technical and effective critique of Piketty is ... that for capital returns to be consistently higher than the overall growth of the economy – or "r > g" as framed by Piketty – ... the elasticity of substitution between capital and labor, which needs to be greater than 1 for r to be consistently higher than g." (quote from above)

In order to buy this argument one has to buy its premises and these premises are known to be false. The first rule of scientific inquiry has been aptly put by Davidson:

"..., before accepting the conclusions of any economist's model as applicable to the real world, the careful student should always examine and be prepared to criticize the applicability of the fundamental postulates of the model; for, in the absence of any mistake in logic, the axioms of the model determine its conclusions." (2002, p. 41), see also (Keynes, 1973, p. xxi)

The elasticity argument presupposes the existence of of production function with convenient properties. There is no such thing. And any graduate student could know this.

"Orthodox economists operate with concepts like continuous substitutability in consumption and production, positively sloped industry supply curves, and wellbehaved aggregate production functions, for which there is little or no empirical support, because they are wedded to a political myth of the market as a self-regulating mechanism." (Blaug, 1984, p. 973)

Not only that there is empirical support lacking, any undergraduate student of physics laughs out loud when confronted with an economist's production function.

"The idea of a path-independent transformation of one set of physical objects into another violates so many physical laws that one can only marvel at the audacity of those who wrap themselves in the banner of physics before marching off to do battle with the opponents of production functions." (Mirowski, 1995, p. 327)

An effective critique does not waste time with the green cheese assumptionism economists are famous for.

Suffice it to mention that capital, profit maximization, decreasing returns, equilibrium and many other notions of marginalism are nonentities.

The worst thing of all, though, is that economists are talking about distribution without knowing what profit is.

"A satisfactory theory of profits is still elusive." (Desai, 2008, p. 10), for the correct approach see (2014g; 2014i)

The discussion about the elasticity of substitution is in no way different from the discussion about how many angels can dance on the point of a pin.

That the graduate students at MIT are not aware of this is small surprise. They even accept supply-demand-equilibrium as an explanation. What is a real surprise is that this shallow argumentation is taken seriously on this blog.

To be as clear as possible: marginalism is Zombie-Economics (Quiggin, 2010).

23.2 The one and only Profit Law and the multitude of unique historical circumstances

The crucial point is to distinguish between total profit for the (world) economy as a whole and the distribution of profit among firms. The theoretical point of departure is conventional profit theory which asserts that total profit is zero.

"The consensus to date has been that it is mathematically impossible for capitalists in the aggregate to make profits." (Keen, 2010, p. 2)

This assertion is fully accepted by methodologists.

"But, from the macro perspective of Walrasian general equilibrium, the *total* profits in this case cannot be other that zero (otherwise, we would need a Santa Claus to provide the aggregated positive profit) but this does not preclude the possibility of short-run profits and losses of individual firms canceling each other out." (Boland, 2003, p. 150) The curious thing is that aggregate profit has been greater than zero for most of the time in most of the known market economies up to the present. This is an empirical fact. Hence there is something wrong with conventional profit theory (Desai, 2008). And, clearly, when the profit theory is wrong then distribution theory is also wrong (2014g). This is the main argument against Piketty.

Now for the constructive part.

First of all it is necessary to show how positive overall profit comes into existence and how it can be maintained over any stretch of time. The structural axiomatic paradigm achieves this in a formally rigorous way (2013b; 2011a). For total profit there exists a testable Profit Law.

Now, the second point is the distribution of total profit among the firms which constitute the economy. Here additional factors come into play. For example: firm A increases productivity, firm B slashes wages, firm C gets a big contract to build weapons etc. All these historical events effect a redistribution of total profit which is given by the Profit Law. It is quite clear that there is no such thing as a historical law of the distribution of profits among firms.

"That is why Descartes said that history was not a science – because there were no general laws which could be applied to history." (Berlin, 2002, p. 76)

How Ricardo or Bailey made their individual profits is a historically unique story that unfolds within the framework of structural axiomatic laws. How universal economic laws and unique historical events play together has been shown exemplarily in (2014h).

From the Law of Gravity does not follow how a feather flies. Likewise: it does not follows from the structural axiomatic Profit Law how Ricardo got rich. Vice versa: from the fact that Ricardo got rich does not follow that he understood the Law of Profit. In fact, he got it completely wrong (for details see the web page http://www.axec.org/#!profit-w/cmlw).

24 Throwing soap bubbles at time wasters Comment on 'Microfounded DSGE models – a total waste of time!'

URL http://rwer.wordpress.com/2014/10/21/microfounded-dsge-models-a-total-waste-of-time/

One defect is a bad thing, but countless defects are a good thing. This keeps the critics busy, the discussion lively, and the outcome forever inconclusive. Accordingly, Hahn was very happy with the critics of the neoclassical research program.

"The enemies, on the other hand, have proved curiously ineffective and they have very often aimed their arrows at the wrong targets." (Hahn, 1980, p. 127)

He even warned his colleagues of exuberance.

"For as I said at the outset, the citadel is not at all secure and the fact that it is safe from a bombardment of soap bubbles does not mean that it is safe." (Hahn, 1984, p. 78)

When homo oeconomicus was young and a simpleminded utility maximizer people laughed at him because of his unrealism. Poincaré, to be sure, choose his words.

"Walras approached Poincaré for his approval. ... But Poincaré was devoutly committed to applied mathematics and did not fail to notice that utility is a nonmeasurable magnitude. ... He also wondered about the premises of Walras's mathematics: It might be reasonable, as a first approximation, to regard men as completely selfinterested, but the assumption of perfect foreknowledge 'perhaps requires a certain reserve'." (Porter, 1994, p. 154)

What happened in the second approximation? Has nonsense been reduced since Walras? It has been multiplied by making it rigorous. This is what we actually have: 'an infinitely lived intertemporally optimizing representative household/consumer/producer, agents with homothetic and identical preferences, etc.' In the early days homo oeconomicus had only perfect foresight, now he has also eternal youth. Scientific progress is something different.

"The last thirty years seem to this observer to have been *downhill* almost all the way. So much of the literature ... I see as silly beyond all expectation and unscholarly beyond all endurance." (Leijonhufvud, 1998, p. 234)

Why have critics been so ineffective? Because they focus always on the most obvious weak link of the chain but do not understand the logic of the chain. J. S. Mill did, and he clearly stated the key question.

"What are the propositions which may reasonably be received without proof? That there must be some such propositions all are agreed, since there cannot be an infinite series of proof, a chain suspended from nothing. But to determine what these propositions are, is the *opus magnum* of the more recondite mental philosophy." (Mill, 2006a, p. 746)

The fault of an approach lies always in the first element of the chain: in the axiomatic foundations. Keynes knew this.

"For if orthodox economics is at fault, the error is to be found not in the superstructure, which has been erected with great care for logical consistency, but in a lack of clearness and of generality in the premises." (Keynes, 1973, p. xxi)

An effective critique does not waste time with the plain unrealism of some heroic assumption in the middle of the chain. An effective critique finds a new hook to hang an impeccable logical chain on, that is, an effective critique changes the axiomatic foundations (2014e; 2014i).

After more than a century, it is pointless to repeat Poincarés critique of homo oeconomicus. Homo emotionalis or homo sociologicus are not the solution. Simply

take *all* behavioral assumptions out of the formal foundations of economic theory. Second-guessing the agents is a waste of time.

"... there has been no progress in developing laws of human behavior for the last twenty-five hundred years." (Hausman, 1992, p. 320), (Rosenberg, 1980, pp. 2-3)

25 Balderdash or discourse? Comment on 'Lies that economics is built on'

URL http://larspsyll.wordpress.com/2014/10/18/lies-that-economics-is-built-on/

25.1 Moralizing as a substitute for thinking

Scientific communication is guided by the code true/false, moral communication by good/bad-evil, and social communication by like/dislike. Economists have traditionally some problems to keep these spheres apart. And this is the main reason why economics is still at the stage of a proto-science.

The title 'Lies that economics is built on' signals that the author commits a category mistake. The body of the text deals with the application of a statistical tool. Now, it is well known that tools may be inapplicable. This is often the case when they are transferred from one domain to another, say, from physics to economics. No doubt, economists, more often than not, apply statistical tools incorrectly. This, though, is a question of professional competence but not a moral problem. Who hammers his thumb is a botcher not a villain.

Moreover, what economics is actually built upon are behavioral axioms (Debreu, 1959; Arrow and Hahn, 1991; McKenzie, 2008). These foundational propositions may be false but they cannot be characterized as lies.

Lies belong to the social and political sphere. In scientific matters we take it for granted that the dialog partner thinks and acts within the framework of true/false, well knowing that we cannot be perfectly sure.

The argument that the other economist tells a lie is entirely misplaced in a discourse because it diverts the attention away from the question at hand. Researcher and detective are different occupations.

"Scientific economics inquires only into the How and Why, not into the Good or Bad, of what is. From the scientific point of view preoccupation with Good and Bad is worse than useless since it not only fails to illumine anything but keeps the lightbeam of inquiry from being turned in directions where answers to significant questions can be found." (Murad, 1953, p. 2)

Or, as Schumpeter put it:

"Remember: occasionally, it may be an interesting question to ask why a man says

what he says; but whatever the answer, it does not tell us anything about whether what he says is true or false." (1994, p. 11)

Standard economics is built on false premises. That is a perfectly acceptable statement – both in form and content. Let politicians excel in vituperation, science is content with refutation.

25.2 Where is Sam L. Savage at home?

"Remember that a model is not the truth. It is a lie to help you get your point across. And in the case of modeling economic risk, your model is a lie about others, who are probably lying themselves." (Sam L. Savage, source-link in the introductory post)

A model is a mental construct that touches reality at crucial points. It has correctly been pointed out that a model is like a map and that, trivially, the map is not the landscape.

While there is consensus that the map is different from the landscape, the question is to what degree.

"Can any model be true? I do not think so. Any model, whether in physics or in the social sciences, must be be an over-simplification. ... I think we have to admit that most successful scientific theories are lucky over-simplifications." (Popper, 1994b, pp. 172-173)

Physicists can be proud of many lucky over-simplifications that come reasonably close to the ideal of truth.

In economics things are different. Here we have first to discriminate between political economics and theoretical economics. In political economics it may happen quite often that a model "is a lie to help you get your point across." Theoretical economics, on the other hand, complies with scientific standards.

To recall, it were the ancient Greeks who first introduced the distinction between doxa and episteme, opinion and knowledge. And then they drew the line of demarcation between non-science and science. Any doubts where they would have situated political economics? And where they would have situated Sam L. Savage's rhetorical shell game?

26 One thing economists must desperately do: their homework Comment on Richard Parker's 'Seven things that economists could usefully do or call for over the next several years'

URL http://rwer.wordpress.com/2014/10/14/seven-things-that-economists-could-usefully-do-or-call-for-over-the-

Economists love to give advice. Time to face reality: economists had no solutions, they have no solutions, they are the problem.

"Late in life, moreover, he [Napoleon] claimed that he had always believed that if an empire were made of granite the ideas of economists, if listened to, would suffice to reduce it to dust." (Viner, 1963, p. 1)

There seems to be complete ignorance among both orthodox and heterodox economists that they have nothing to offer in the way of a scientifically founded advice.

"In order to tell the politicians and practitioners something about causes and best means, the economist needs the true theory or else he has not much more to offer than educated common sense or his personal opinion." (Stigum, 1991, p. 30)

What we currently have are the opinions of folks with political agendas but certainly with nothing resembling a true theory.

It is a unique fact of the history of economic thought that neither Classicals, nor Walrasians, nor Marshallians, nor Keynesians, nor Marxians, nor Institutionialists, nor Monetary Economists, nor Austrians, nor Sraffaians, nor Evolutionists, nor Game theorists, nor Econophysicists, nor New Keynesians, nor New Classicals ever came to grips with profit (Desai, 2008, p. 10). Hence, 'they fail to capture the essence of a capitalist market economy' (Obrinsky, 1981, p. 495), see also (2013b).

Economists do not understand the two most important phenomena in their universe: profit and income (2014i). This is like physics before the proper understanding of the elementary concepts force and mass.

An economist stepping forward and explaining how a crisis could be fixed or how to make the world a better place is in the state of severe self-delusion (2013a). And there is no remedy against this than doing one's scientific homework.

Stop talking, start thinking. This is a manageable agenda for the next several years.

27 Yes, orthodox economics is bad science, but can Heterodoxy raise hope? Comment on 'Modern macroeconomics and the perils of using 'Mickey Mouse' models'

URL http://rwer.wordpress.com/2014/10/15/modern-macroeconomics-and-the-perils-of-using-mickey-mouse-r

27.1 A non-starter

In 1898 the great heterodox economist Thorstein Veblen asked: "Why is Economics Not an Evolutionary Science?"

What Veblen pointed out was that the petty mechanical models of his neoclassical fellow economists were mistaken, useless, and misleading.

He famously ridiculed homo oeconomicus: "The hedonistic conception of man is that of a lightning calculator of pleasures and pains who oscillates like a homogeneous globule of desire of happiness under the impulse of stimuli that shift him about the area, but leave him intact."

Well said, indeed, and true until this day. Yet, then one has to ask back: why did Veblen spend much time on questioning and ridiculing Orthodoxy instead of developing an evolutionary economics? If he knew what was wrong, why did he not demonstrate how to do it properly? Why is the very personification of Mickey Mouse economics – homo oeconomicus – still busy with maximizing utility in our days?

Yes, Orthodoxy is a failure. Yes, the heterodox critique is fully justified. Yes, the emperor has no clothes. Yes, the textbooks are wrong. Yes, linear models are unsatisfactory. Yes, equilibrium is a nonentity and rational expectations are a physical impossibility.

We know all this since Veblen or even longer. Time enough, one would think, to develop something better.

Let all dreams come true and imagine for a moment that each orthodox economics professor is replaced by a heterodox professor. What could he teach? That there is something good and right with the Classics, with Marx, with Walras, with Keynes, with the Austrians, with Sraffa, Kalecki and Minsky, but that we do not know exactly what it is and how it fits together. Is the pluralism of partial or even falsified theories something that can be justified and taught as science?

The fact of the matter is: there is no heterodox alternative. To replace a paradigm means to replace obsolete axioms with new axioms. This effects a change of the whole theoretical superstructure and that is what a paradigm shift is all about. At the moment there exists no heterodox common ground in the form of a set of axioms and therefore nothing to consistently build upon.

Orthodoxy is unacceptable but its proponents have taken the pain to formulate its premises and conclusions in such a way that errors/mistakes can be identified with accepted scientific procedures. This is the minimum condition and this made it possible that General Equilibrium Theory could be refuted by its own proponents.

"The enemies, on the other hand, have proved curiously ineffective and they have very often aimed their arrows at the wrong targets. Indeed if it is the case that today General Equilibrium Theory is in some disarray, this is largely due to the work of General Equilibrium theorists, and not to any successful assault from outside." (Hahn, 1980, p. 127)

Yes, nobody needs the Mickey Mouse models of Orthodoxy. But this is no sufficient reason to jump to heterodox Donald Duck models.

The common error lies in the assumption that there must be something like behavioral laws or at least regularities. There is no such thing. No way leads from behavioral assumptions to an understanding of how the actual economy works. The problem is not with the econometricans, the problem is with economic theory. From the assumption of utility maximization follows no testable relationship. It is the same with other green cheese assumptions like rational expectations, perfect competition, supply and demand functions, twice differentiable production functions and all the rest (2013a). Nonentities are not testable and that is not a weakness of statistical methods with a well-defined field of application. Standard economics simply falls outside this field.

As long as Heterodoxy, or anybody else for that matter, cannot replace the obsolete set of foundational assumptions with a consistent alternative economics is caught in a cul-de-sac.

"Yet most economists neither seek alternative theories nor believe that they can be found." (Hausman, 1992, p. 248)

Or, as Mirowski put it: "The task of producing knowledge against the grain requires imagination." (2013, p. 4)

Seems to be a scarce resource in economics.

27.2 Yes, listen to the Econophysicists, but not too long

When Econophysicists take a look at theoretical economics from their distinct point of view the conclusions are always interesting. Take this one about the future of conventional economics.

"What is now taught as standard economic theory will eventually disappear, no trace of it will remain in the universities or boardrooms because it simply doesn't work: were it engineering, the bridge would collapse." (McCauley, 2006, p. 17)

Or this one about the art of model-building.

"There is little or nothing in existing micro- or macroeconomics texts that is of value for understanding real markets. Economists have not understood how to model markets mathematically in an empirically correct way." (McCauley, 2006, p. 16)

I think Heterodoxy can agree with all this. My main point with the Econophysicists is this: conventional economics is largely the product of old-school Econophysicists (see also 2013e). There is a lot of irony here.

Beginning with the Classicals economists have shaped economics in the image of physics. Mirowski has brilliantly retold the story (1995).

While it is legitimate to copy from physics one has to make sure that one gets the crucial point. In most cases the copying remained on the surface.

"Now there is simply no doubt that whatever was the source of inspiration for Jevons, Menger and Walras, all three invoked whatever physics they knew to lend prestige to their theoretical innovations. Unfortunately, with the exception of Jevons, that was the physics of Newton, not the physics of Helmholz, Joule and Maxwell; Adam Smith, Ricardo, James Mill and McCulloch had been just as eager in earlier days to invoke the name of Newton to legitimise their theoretical claims." (Blaug, 1989, p. 1226)

On the whole the copying amounts regularly to take the powerful tools that have been invented elsewhere (Darwinism is also popular) and to apply it to economics. It is a bit like Schwarzenegger grabbing the cruise missile and then going to wipe out the rather unpleasant guy next door.

In my mind, the best lesson physics has to offer is that you have to think for yourself and to create your own tools.

"The mathematical language used to formulate a theory is usually taken for granted. However, it should be recognized that most of mathematics used in physics was developed to meet the theoretical needs of physics. ... *The moral is that the symbolic calculus employed by a scientific theory should be tailored to the theory, not the other way round.*" (Wittgenstein, quoted in Schmiechen, 2009, p. 368)

The take-home message is: theory first!

So I have some qualms about whether the Affine Robust Measurement Feedback Non-linear H-infinity Control is the appropriate tool in economics. In any case it sounds good. But is this real progress compared to the old-school Econophysicists who messed the whole thing up in the first place?

28 Kalecki got it wrong, Allais got it right Comment on 'Kalecki and the loanable funds doctrine'

URL http://larspsyll.wordpress.com/2014/10/18/lies-that-economics-is-built-on/

It is not exactly a great performance. After more than two hundred years economists still have no clear idea of the fundamental concepts income and profit. As Schumpeter already observed: "At all times, including the present, in judging from the standpoint of the requirements of each period ... the performance of economic theory has been below reasonable expectation and open to valid criticism." (1994, p. 19)

The point to start with is the official acknowledgment of the New Palgrave Dictionary: "A satisfactory theory of profits is still elusive." (Desai, 2008, p. 10)

Because the profit theory is false, the income theory is false, by consequence the saving theory is false, and this results in a defective loanable funds theory. With

regard to the relationship of saving and investment Kalecki dug at the right site but not deep enough.

The correct relationship is given by:

 $Q_{re} = I - S$ (2011f, p. 8, eq. (13)) and (Allais, 1993, p. 69)

Legend: Q_{re} retained profit, S saving, I investment expenditure.

If it happens that household sector saving S is zero then, as a corollary, retained profit Q_{re} is equal to investment I and the business sector as a whole is in the position to finance investment entirely 'out of its own pocket'. However, the firms with retained profits may prefer to keep their money in the bank.

If it happens that household saving is equal to investment expenditure then, as a corollary, retained profit is zero and the household sector as a whole is in the position to fully finance the investment of the business sector. However, the households with new period savings may prefer to keep their money in the bank (instead of buying bonds from the business sector, for example).

Since household sector saving is never equal to business sector investment reality will be found between these two limiting cases.

The situation becomes a bit more complex when the fact is taken into account that the household sector may consist of savers and dissavers (2014b).

The build-up of financing relationships (credits, bonds, stocks, etc) within and between the sectors is in an intricate way related to the flow magnitudes saving and investment. However, what Kalecki got wrong in the first place was the relationship between profit, distributed profit, and retained profit.

It will be interesting to observe how long it takes economists to realize that the theoretical superstructure of Kalecki, Keynes, Walras, and their post-, new-, and neo-derivatives rests on a logically untenable conception of income and profit. No doubt, methodologists and the scholars of the history of economic thought will sooner than later have the unique chance to see a paradigm shift in real time. Two hundred years without a correct understanding of income and profit should be enough, even for economists.

29 No share of profit in income Comment on Jonathan Schlefer's 'Inequality and the culprit economists overlook — their own wage theory'

URL http://larspsyll.wordpress.com/2014/10/12/inequality-and-the-culprit-economists-overlook-their-own-wag

From Jonathan Schlefer's historical overview everybody gets the impression that neither orthodox nor heterodox economists have a clear idea of the fundamental economic concepts income and profit. As a matter of fact, what is known with certainty from the structural axiomatic analysis is that the conventional approaches are logically deficient (2014i).

An in-depth analysis shows that there is no such thing as "a share of profit in income" but there is "a share of distributed profit in income". Most economists do not realize that profit and distributed profit are fundamentally different economic entities. Profit is not a factor income and it cannot be functionally attributed to capital. Because of this, the distribution of the period output has nothing to do with any marginal product of labor or capital (2012b).

From the refutation of marginalism, though, does not follow that the alternative approaches of Keynes or Kalecki or Kaldor or Keen, for example, are substantially better. For Kalecki see:

http://larspsyll.wordpress.com/2014/10/03/kalecki-on-weg-led-growth/#comment-17026.

The correct Profit Law reads for the investment economy:

 $Q_m = Y_D + I - S_m$ (2014i, p. 8, eq. (18)),

Legend: Q_m monetary profit, Y_D distributed profit, S_m monetary saving, I investment expenditure.

The Profit Law, which is testable with an accuracy of two decimal places, gets a bit longer as soon as foreign trade and government is included. The crucial thing is that profit for the economy as a whole does not at all depend on capital and productivity and this makes the Cambridge Capital Controversy pointless. The productivity-profit nexus holds for a single firm and cannot be generalized for the economy as a whole. This is the fallacy of composition – the trademark of conventional economic thinking (2013a).

Changes of the valuation price of assets are captured by nonmonetary profit Q_n . This is a separate and lengthy issue to be dealt elsewhere (2011c).

The profit theory is false since Adam Smith. Without exception, the currently available distribution theories are hanging in the air.

This is the actual state of economics: a perfect scientific vacuum.

30 Shocking: methodology is a tricky business Comment on Peter Radford's 'Study the shocks'

URL http://rwer.wordpress.com/2014/10/03/study-the-shocks/

30.1 No clue

What is the core problem of economics? Bagehot made it clear back in 1885:

"It [Political Economy] is an abstract science which labours under a special hardship. Those who are conversant with its abstractions are usually without a true contact with its facts; those who are in contact with its facts have usually little sympathy with and little cognisance of its abstractions. Literary men who write about it are constantly using what a great teacher calls 'unreal words,' – that is, they are using expressions with which they have no complete vivid picture to correspond. They are like physiologists who have never dissected; like astronomers who have never seen the stars; and, is consequence, just when they seem to be reasoning at their best, their knowledge of the facts falls short. Their primitive picture fails them, and their deduction altogether misses the mark – sometimes, indeed, goes astray so far, that those who live and move among the facts boldly say that they cannot comprehend 'how any one can talk such nonsense.' Yet, on the other hand, these people who live and move among the facts often, or mostly, cannot of themselves put together any precise reasonings about them." (Bagehot, 1885, PE.13)

Take-home message: there are two types of economists but neither has a clue.

This, indeed, was not news then because J. S. Mill reported already in 1874 about the two classes of inquirers.

"It has been again and again demonstrated, that those who are accused of despising facts and disregarding experience build and profess to build wholly upon facts and experience; while those who disavow theory cannot make one step without theorizing. But, although both classes of inquirers do nothing but theorize, and both of them consult no other guide than experience, there is this difference between them, and a most important difference it is: that those who are called practical men require *specific* experience, and argue wholly *upwards* from particular facts to a general conclusion; while those who are called theorists aim at embracing a wider field of experience, and, having argued upwards from particular facts to a general principle including a much wider range than that of the question under discussion, then argue *downwards* from that general principle to a variety of specific conclusions." (Mill, 1874, V. 43)

Take-home message: there are two types of economists, the upwarders and downwarders, but neither is particularly successful.

Mill was confronted with a quite unsatisfactory situation. He was well aware of the "backward state" of the social sciences in general and of economics in particular. Being one of the finest methodologists of his time – and far beyond – he took sides.

"Since, therefore, it is vain to hope that truth can be arrived at, either in Political Economy or in any other department of the social science, while we look at the facts in the concrete, clothed in all the complexity with which nature has surrounded them, and endeavour to elicit a general law by a process of induction from a comparison of details; there remains no other method than the *à priori* one, or that of "abstract speculation"." (Mill, 1874, V.55)

Mill had the great triumph of the downwarders before his eyes and he certainly concurred with Galileo.

"I shall never be able to express strongly enough my admiration for the greatness of mind of these men who conceived this [heliocentric] hypothesis and held it to be true. In violent opposition to the evidence of their own senses and by sheer force of intellect, they preferred what reason told them to that which sense experience plainly showed them ..." (quoted in Popper, 1994a, p. 84)

In contrast, the defeat of the upwarders was evident and their good advice rung hollow.

"Bacon, the philosopher of science, was, quite consistently, an enemy of the Copernican hypothesis. Don't theorize, he said, but open your eyes and observe without prejudice, and you cannot doubt that the Sun moves and that the Earth is at rest." (Popper, 1994a, p. 84)

Take-home message: common sense and open eyes can be very misleading in scientific matters.

Or, as Marx put it: "That in their appearances things are often presented in an inverted way is something fairly familiar in every science, apart from political economy." (Marx, 1990, p. 677)

Mill knew quite well that methodology can point out errors, mistakes, nonentities, fallacies, and green cheese assumptionism but that it is beyond the means of the methodologist to tell researchers how to solve their scientific problems. And if any methodologist should ever think he knows how to do better there is a straightforward way to demonstrate it.

"Doubtless, the most effectual mode of showing how the sciences of Ethics and Politics may be constructed, would be to construct them ..." (Mill, 2006b, p. 834)

The downwarders of Orthodoxy have failed to explain how the actual economy works. This, however, does not prove that the methodology of the upwarders is superior. Heterodoxy cannot claim that it has performed better.

My good advice to Peter Radford could be: never give good advice in methodological matters, but this would be much like one of these logically shocking ancient Greek paradoxes.

30.2 Scrap the lot and start again (Joan Robinson)

Real theoretical progress neither comes from the lengthy elaboration of flaws nor from methodological prescriptions, but consists in developing a superior alternative. This is the point of my argument which goes back to Mill.

What does a promising strategy look like? If the conventional approach is unacceptable it has to be replaced and this is practically done by replacing the obsolete set of axioms by a new set. As Keynes put it: "For if orthodox economics is at fault, the error is to be found not in the superstructure, which has been erected with great care for logical consistency, but in a lack of clearness and of generality in the premises." (Keynes, 1973, p. xxi)

It is the specific weakness of Heterodoxy that it is habitually distracted by the superstructure.

"A method of obtaining accurate premises is needed because science can only be true if its premises are true." (Redman, 1997, p. 328)

In order to make serious progress I would like to substitute Peter Radford's appeal by: replace the axioms!

31 Economics and the roadrunner effect Comment on 'Piketty and the non-existence of economic science'

URL http://larspsyll.wordpress.com/2014/10/10/piketty-and-the-non-existence-of-economic-science/

"... suppose they [the economists] did reject all theories that were empirically falsified ... *Nothing would be left standing*; there would be no economics." (Hands, 2001, p. 404)

As a matter of fact, there is no economics.

But how does it come that the peer-reviewed journals nearly explode with accepted contributions to the official body of economic science?

Economists simply ignore refutation, that is, they violate the First and Fundamental Law of Science.

"In economics we should strive to proceed, wherever we can, exactly according to the standards of the other, more advanced, sciences, where it is not possible, once an issue has been decided, to continue to write about it as if nothing had happened." (Morgenstern, 1941, pp. 369-370)

Assessed according to the criteria of science, economics is already for a considerable time over the cliff. It keeps on running because of the overriding imperative: the show must go on – who stops is done.

"I think that the discipline is in need of a major overhaul." (Hausman, 1992, p. 263)

32 You have the data, here is the employment formula Comment on Marc Lavoie and Engelbert Stockhammer's 'Wageled growth'

URL http://larspsyll.wordpress.com/2014/10/02/wage-led-growth-2/

You write: "The most recent empirical studies show that the world economy overall is in a wage-led demand regime ..."

This is good news in several respects. I focus in the following on verification/falsification, i.e., on the relationship between facts and theory.

You write: "An increase in the wage share has several effects on demand and whether actual demand regimes are wage led or profit led is subject to an ongoing academic debate."

This debate can be quickly resolved. A positive relationship between wage rate, various demand components, and employment is exactly what the structural axiomatic employment function asserts (see 2014i, p. 9, eq. (22)).

I wrote on p. 10: "A general increase of the wage rate increases the factor cost ratio in eq. (22) and effects a *higher* employment. This systemic property follows in direct lineage from the axioms and the condition of product market clearing. It goes without saying that this rectified relationship between wage rate and employment is almost certainly beyond the comprehension of the marginalistic supply-demandequilibrium mindset. There is no need, though, to discuss much about contradicting assertions because eq. (22) is testable. Therefore, an *experimentum crucis* that settles the matter is possible in principle. There cannot be much doubt about the outcome."

The outcome is what the most recent empirical studies show. These studies have not yet come to my notice, yet I am quite certain that you can improve the results by applying the structural axiomatic employment function. And, best of all, you get the underlying theory in one package with the correct profit formula.

I am looking forward to a perfect empirical corroboration of the structural axiomatic employment function.

33 The man who missed it by a hair's breadth Comment on 'Kalecki on wage-led growth'

URL http://larspsyll.wordpress.com/2014/10/03/kalecki-on-weg-led-growth/

Kalecki addressed two important questions:

(i) the relationship between profit and employment,

(ii) and the difference between a partial wage rate change and an overall wage rate change.

To take the second point first: Kalecki was perfectly right in pointing out that even if it were true that a partial wage cut could increase employment in one firm it would be a fallacy of composition to maintain that this holds for the economy as a whole. For a consistent analysis of the partial-global interrelations see (2014j; 2014k). With regard to point (i) Kalecki has to be praised for being the first to take overall profit explicitly into the picture. However, he got the relationship between profit and distributed profit wrong (2011e; 2013c; 2011a).

This can be regarded as a trivial offense because Keynes did not get it right either.

"His *Collected Writings* show that he wrestled to solve the Profit Puzzle up till the semi-final versions of his *GT* but in the end he gave up and discarded the draft chapter dealing with it." (Tómasson and Bezemer, 2010, pp. 12-13, 16)

Or, to jump directly into the present, Keen did it not get right either (2013b).

Or, to to take the broader picture: neither Classicals, nor Walrasians, nor Marshallians, nor Keynesians, nor Marxians, nor Institutionialists, nor Monetary Economists, nor Austrians, nor Sraffaians, nor Evolutionists, nor Game theorists, nor Econophysicists ever came to grips with profit (cf. Desai, 2008).

To sum it up: the profit theory is false since Adam Smith.

Kalecki recognized that profit is the pivotal concept for the analysis of how the economy works. In marked contrast to his fellow economists, he did not take Walras's zero profit economy for one moment seriously. Yet he stumbled at the very last step: he did not get the formal foundations right. In this respect Orthodoxy and Heterodoxy is one big family.

34 The methodological Keynes Comment on Victoria Chick and Geoff Tily's 'Whose Keynes? Keynes's Keynes!'

URL http://larspsyll.wordpress.com/2014/10/03/whose-keynes-keyness-keynes/

It is trivial but worth repeating: political economics and theoretical economics are different things and have to be strictly kept apart. The core problem of economics as a science is, of course, that by its very nature it is closely entangled with politics. The biggest threat to theoretical economics is that it gets hijacked by those with a political agenda. It does not matter whether this agenda is good or bad in moral terms. Science is committed to its own criteria or it ceases to be science.

But are we not all inescapably involved in the struggle between good and evil? Politics, religion, and philosophy say so. But even if this were true, it is no justification to hijack science or to let it be hijacked. What has to be recognized and respected is that science is about true/false and not about good/evil. This distinction is part of the demarcation problem, which is the fundamental problem of methodology (Popper, 1980, p. 34).

Keynes had a political agenda and this was his first priority. Let us agree for the moment that his attempt to alleviate unemployment was good and right without any qualification. Hence we all can accept Keynes's agenda – except for one point: Keynes used theoretical economics for political purposes. This is unacceptable.

Having taken politics out of the way, the next question is about the scientific content of the *General Theory*. Here we can – in very general terms – side with Allais: "... mais son [Keynes's] insuffisance logique ne lui a pas permis de résoudre les problèmes que son intuition lui avait fait entrevoir." (1993, p. 70)

In more specific terms we can definitively declare that the formal foundations of Keynesianism are logically defective since the *General Theory* (2011f).

It is no contradiction to accept Victoria Chick and Geoff Tily's argument that Keynes was one of the good guys of political economics and not to accept the *General Theory* as a valid contribution to theoretical economics.

But good social intentions do not count for much in science, only material and formal consistency. So what is left?

Keynes lasting scientific contribution relates to methodology. He spoke it out loud, so that every fellow economist could hear it: throw over the classical axioms and put theoretical economics on new foundations. What else could Keynesian Revolution mean than a paradigm shift?

35 The axiomatic method is impeccable Comment on Alan Kirman's 'Debreu and the Bourbaki delusion of deductive-axiomatic economics'

URL http://larspsyll.wordpress.com/2014/08/09/debreu-and-the-bourbaki-delusion-of-deductive-axiomatic-ecc

Alan Kirman gives an excellent overview about how Debreu et al. led general equilibrium theory ad absurdum. I agree with all of it except for the somewhat implicit conclusion that the axiomatic-deductive method is inapplicable in economics, which is expressed in the title. It is logically incorrect to argue from the fact that someone has crashed an airplane into the ground that it is a delusion that airplanes can fly.

A minor point is that Bourbaki cannot be made accountable for the neoclassical structure-without-application: "..., it was the von Neumann perspective that shaped general equilibrium theory ..., and thus reconstituted economic theory." (Weintraub, 2002, p. 78). For a suggestive collection of statements about axiomatization see also my web pages URL http://www.axec.org/#!hilbert-bourbaki-mill/c241i and URL http://www.axec.org/#!axiomatization-w/cvx6.

The axiomatic-deductive method is impeccable. It is a sad fact that economists either cannot apply it correctly or do not understand what J. S. Mill, perhaps the greatest methodologist among them (Popper, 1980, p. 19), already clearly understood and taught.

Misapplication of the axiomatic method is ultimately responsible for the failure of Orthodoxy. But worse, lack of understanding is also the most important cause for the failure of Heterodoxy.

A paradigm shift consists in replacing the hitherto existing set of axioms by a better one. Keynes famously demanded to throw over the classical axioms (Keynes, 1973, p. 16). New axioms define a new paradigm. Heterodox economists were hitherto incapable of formulating an alternative set of axioms. It seems that they did not even understand that this is their constructive task. Only for lack of a convincing alternative the obsolete Arrow-Debreu-McKenzie axioms still stand.

To resume with Clower: "My opinion continues to be that axiomatics, like every other tool of science, is no better than its user, and not all users are skilled." (1995, p. 308)

After the neoclassical misapplication it is high time that the axiomatic-deductive method is skillfully and successfully put to work in economics.

36 Between the devil and the deep blue sea: on framing false alternatives Comment on Merijn Knibbe's 'The DSGE emperor has no clothes'

URL http://rwer.wordpress.com/2014/09/29/the-dsge-emperor-has-no-clothes-but-he-does-have-a-hat-and-a-ra-

Imagine for a moment that you drop into a discussion. Two experts talk about the respective merits and demerits of the A-car and the B-car. There is a lot of technical argument about acceleration, fuel consumption, operating distance, cylinder capacity, electronic injection, etcetera. Both debaters are engaged and obviously conversant with the technicalities. At the end the A-car proponent seems to have the better arguments. Good discussion, applause. Then you learn that the original question was: how can we get to the moon?

Much of the discussion about DSGE and WUMM is of this sort. The question was: after the recent spectacular failure of macroeconomics, how can we do better in the future? How to proceed theoretically and analytically and empirically? Is DSGE or WUMM more promising? This is false framing. The correct answer is, neither DSGE nor WUMM, both have to be abandoned.

Why? Because there is something like falsification.

"In economics we should strive to proceed, wherever we can, exactly according to the standards of the other, more advanced, sciences, where it is not possible, once an issue has been decided, to continue to write about it as if nothing had happened." (Morgenstern, 1941, pp. 369-370)

Of course, after a severe crisis, economists do not simply continue, they promise to to better in the future. Yes, and they have already an idea. More complexity, for example. Mea culpa, we failed in the past, but this time we fix it. Not much will come from this cosmetic surgery. Why?

To make a long argument short please accept for a moment the assertion: there is no such thing as a law of human behavior. From this follows trivially:

- historical correlations are unreliable for forecasting purposes, particularly in the case of an entirely new situation, e.g. a regime change,
- · demand and supply functions are nonentities,
- preferences change over time,
- parameters change over time,
- there is no equilibrium or steady state.

All these difficulties that make model testing such a challenging task have their root in the foundational assumption that there is such a thing as a behavioral law or at least a regularity. After all, that is what we are ultimately looking for. Because if there is no law nobody can make a prediction (except charlatans and doomsayers).

DSGE claims to be based on "deep structural parameters." This would be fine if it indeed were the case. Yet the whole microfoundations project is essentially about optimizing behavior. This crucial assumption is put squarely into the premises:

"Modern macro models have the five following properties:

• They specify budget constraints for households, technologies for firms, and resource constraints for the overall economy.

- They specify household preferences and firm objectives.
- They assume forward-looking behavior for firms and households.
- They include the shocks that firms and households face.
- They are models of the entire macroeconomy."

Two of the five premises are about human behavior and most people are aware that they are far off the mark. This, however, is the minor problem. The Iron Law of Economic Theory Design says: No way leads from the understanding of human motivations and behavior or from purely speculative behavioral assumptions to the understanding of how the economy works (for details see 2014h).

Hence, what is needed is not cosmetic surgery but a paradigm shift. The whole set of DSGE premises, which is in the main shared by WUMM, is methodologically mistaken and ultimately indefensible.

Therefore, the choice is not between DSGE or WUMM. The real choice is between the defunct subjective-behavioral approach and a new paradigm. This, though, is obvious since Keynes and the Great Depression. The real problem is not in statistical technicalities but in "... a failure of reason to find suitable alternatives which might be used to transcend an accidental intermediate stage of our knowledge." (Feyerabend, 2004, p. 72)

There are many popular and even good reasons to blame Orthodoxy for the latest crisis, but – to set the record straight – Heterodoxy, too, did not come up with a "suitable alternative" since Keynes proposed to "throw over" the classical axioms (Keynes, 1973, p. 16).

Heterodoxy has a mission: Don't waste time with blaming and false alternatives; dig deeper; there are economic laws, but there are certainly no behavioral laws.

37 Conclusion: economics on the Internet

The substitution of behavioral axioms by structural axioms constitutes a paradigm shift. Paradigms are incommensurable. The shift implies that conventional approaches have been refused because of their methodological defects. Empirical research that consists in the main of data collection and state-of-the-art statistical analysis is not affected by the paradigm shift; only the interpretation of results may be affected.

The AXEC Project starts anew, it does not join any conventional approach in the attempt to refine or correct the incorrigible. By its very nature, original research is found at first in one place only; it is, for instance, excluded from Wikipedia.

From AXEC's original research follows that the entry Profit in Wikipedia, and probably in other encyclopedias and similar publications, is unacceptable according to the criteria of logical and material consistency, which are the ultimate scientific criteria (see Profit and Essentials and Textbooks in AXECwiki http://www.axec.org/#!axecwiki/c3ow). According to Wikipedia and others the corpus of conventional economic literature is a reliable source, according to AXEC's original research it is not (see Profit http://www.axec.org/#!profit-w/cmlw).

What holds for pedagogic content on the Internet holds *a fortiori* for economics blogs.

It is the correct axiomatic foundation that makes an approach reliable in the first place. All other criteria are secondary and potentially misleading. Original research returns to the basics and is almost inevitably antithetic to the common sense of the day. However, critique or refutation is not an end in itself. The constructive originality of the structural axiom set consists in formal and material consistency.

What is communicated on the blogs as a result of original research is essentially:

- Orthodoxy is a failure.
- Heterodoxy is a failure.
- There is no alternative to the structural axiomatic paradigm.

References

- Allais, M. (1993). *Les Fondements Comptable de la Macro-Économie*. Paris: Presses Universitaires de France, 2nd edition.
- Arrow, K. J., and Hahn, F. H. (1991). General Competitive Analysis. Amsterdam, New York, NY, etc.: North-Holland.
- Bagehot, W. (1885). The Postulates of English Political Economy. Library of Economics and Liberty. URL http://www.econlib.org/library/Bagehot/bagPE1. html.
- Berlin, I. (2002). Freedom and Its Betrayal. London: Chatto Windus.
- Blatt, J. (1983). How Economists Misuse Mathematics. In A. S. Eichner (Ed.), *Why Economics is Not Yet a Science*, pages 166–186. Armonk, NY: M.E. Sharpe.
- Blaug, M. (1984). Review: Why Economics is not Yet a Science. *Economic Journal*, 94(376): 972–973. URL http://www.jstor.org/stable/2232317.
- Blaug, M. (1989). Review. *Economic Journal*, 99(398): 1225–1226. URL http://www.jstor.org/stable/2234120.
- Blaug, M. (1990). *Economic Theories, True or False?* Aldershot, Brookfield, VT: Edward Elgar.
- Blaug, M. (1998). *Economic Theory in Retrospect*. Cambridge: Cambridge University Press, 5th edition.
- Blaug, M. (2001). No History of Ideas, Please, We're Economists. Journal of Economic Perspectives, 15(1): 145–164.
- Boland, L. A. (1992). The Principles of Economics. Some Lies my Teacher Told Me. London, New York, NY: Routledge.
- Boland, L. A. (2003). The Foundations of Economic Method. A Popperian Perspective. London, New York, NY: Routledge, 2nd edition.
- Bouchaud, J. P. (2009). The (Unfortunate) Complexity of the Economy. *Econo-Physics Forum*, 0904.0805: 1–9. URL http://www.unifr.ch/econophysics/paper/show/id/0904.0805.
- Clower, R. W. (1995). Axiomatics in Economics. *Southern Economic Journal*, 62(2): 307–319. URL http://www.jstor.org/stable/1060684.
- Clower, R. W. (1999). Post-Keynes Monetary and Financial Theory. *Journal of Post Keynesian Economics*, 21(3): 399–414. URL http://www.jstor.org/stable/4538639.

- Cohen, I. B. (1994). Natural Images in Economic Thought, chapter Newton and the Social Sciences, With Special Reference to Economics, or, the Case of the Missing Paradigm, pages 55–90. Cambridge: Cambridge University Press.
- Davidson, P. (2002). *Financial Markets, Money and the Real World*. Cheltenham, Northampton, MA: Edward Elgar.
- Debreu, G. (1959). *Theory of Value. An Axiomatic Analysis of Economic Equilibrium.* New Haven, London: Yale University Press.
- Desai, M. (2008). Profit and Profit Theory. In S. N. Durlauf, and L. E. Blume (Eds.), *The New Palgrave Dictionary of Economics Online*, pages 1–11. Palgrave Macmillan, 2nd edition. URL http://www.dictionaryofeconomics.com/article?id=pde2008_P000213.
- Einstein, A. (1934). On the Method of Theoretical Physics. *Philosophy of Science*, 1(2): 163–169. URL http://www.jstor.org/stable/184387.
- Feyerabend, P. K. (2004). Problems of Empiricism. Cambridge: Cambridge University Press.
- Georgescu-Roegen, N. (1970). The Economics of Production. *American Economic Review, Papers and Proceedings*, 60(2): 1–9. URL http://www.jstor.org/stable/ 1815777.
- Georgescu-Roegen, N. (1971). *The Entropy Law and the Economic Process*. Cambridge, MA: Cambridge University Press.
- Haack, S. (1997). Science, Scientism, and Anti-Science in the Age of Preposterism. Skeptical Inquirer, 21(6): 1–7. URL http://www.csicop.org/si/show/science_ scientism_and_anti-science_in_the_age_of_preposterism.
- Hahn, F. H. (1980). General Equilibrium Theory. *Public Interest. Special Issue: The Crisis in Economic Theory*, pages 123–138.
- Hahn, F. H. (1984). *Equilibrium and Macroeconomics*. Cambridge, MA: MIT Press.
- Halévy, E. (1960). *The Growth of Philosophic Radicalism*. Boston, MA: Beacon Press.
- Hands, D. W. (2001). Reflection without Rules. Economic Methodology and Contemporary Science Theory. Cambridge, New York, NY, etc: Cambridge University Press.
- Hausman, D. M. (1992). The Inexact and Separate Science of Economics. Cambridge: Cambridge University Press.

- Hudík, M. (2011). Why Economics is Not a Science of Behaviour. Journal of Economic Methodology, 18(2): 147–162.
- Hutchison, T. W. (1937). Expectation and Rational Conduct. Zeitschrift f
 ür Nationalökonomie / Journal of Economics, 8(5): 636–653. URL http://www.jstor.org/ stable/41793308.
- Kakarot-Handtke, E. (2011a). The Emergence of Profit and Interest in the Monetary Circuit. SSRN Working Paper Series, 1973952: 1–23. URL http://ssrn.com/ abstract=1973952.
- Kakarot-Handtke, E. (2011b). Keynes's Missing Axioms. SSRN Working Paper Series, 1841408: 1–33. URL http://ssrn.com/abstract=1841408.
- Kakarot-Handtke, E. (2011c). Primary and Secondary Markets. SSRN Working Paper Series, 1917012: 1–26. URL http://ssrn.com/abstract=1917012.
- Kakarot-Handtke, E. (2011d). Schumpeter and the Essence of Profit. SSRN Working Paper Series, 1845771: 1–26. URL http://ssrn.com/abstract=1845771.
- Kakarot-Handtke, E. (2011e). What is Wrong With Heterodox Economics? Kalecki's Profit Theory as an Example. *SSRN Working Paper Series*, 1845803: 1–9. URL http://ssrn.com/abstract=1845803.
- Kakarot-Handtke, E. (2011f). Why Post Keynesianism is Not Yet a Science. SSRN Working Paper Series, 1966438: 1–15. URL http://ssrn.com/abstract=1966438.
- Kakarot-Handtke, E. (2012a). Crisis and Methodology: Some Heterodox Misunderstandings. SSRN Working Paper Series, 2083519: 1–22. URL http: //ssrn.com/abstract=2083519.
- Kakarot-Handtke, E. (2012b). Income Distribution, Profit, and Real Shares. SSRN Working Paper Series, 2012793: 1–13. URL http://ssrn.com/abstract=2012793.
- Kakarot-Handtke, E. (2013a). Confused Confusers: How to Stop Thinking Like an Economist and Start Thinking Like a Scientist. *SSRN Working Paper Series*, 2207598: 1–16. URL http://ssrn.com/abstract=2207598.
- Kakarot-Handtke, E. (2013b). Debunking Squared. SSRN Working Paper Series, 2357902: 1–5. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id= 2357902.
- Kakarot-Handtke, E. (2013c). The Emergence of Profit and Interest in the Monetary Circuit. World Economic Review, 2: 106–118. URL http://wer. worldeconomicsassociation.org/article/view/60.
- Kakarot-Handtke, E. (2013d). Redemption and Depression. SSRN Working Paper Series, 2343561: 1–28. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id= 2343561.

- Kakarot-Handtke, E. (2013e). Toolism! A Critique of Econophysics. SSRN Working Paper Series, 2257841: 1–13. URL http://papers.ssrn.com/sol3/papers.cfm? abstract_id=2257841.
- Kakarot-Handtke, E. (2013f). Why Post Keynesianism is Not Yet a Science. *Economic Analysis and Policy*, 43(1): 97–106. URL http://www.eap-journal.com/archive/v43_i1_06-Kakarot-Handtke.pdf.
- Kakarot-Handtke, E. (2014a). Economics for Economists. SSRN Working Paper Series, 2511741: 1–29. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id= 2517242.
- Kakarot-Handtke, E. (2014b). Loanable Funds vs. Endogenous Money: Krugman is Wrong, Keen is Right. SSRN Working Paper Series, 2389341: 1–17. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2389341.
- Kakarot-Handtke, E. (2014c). Mathematical Proof of the Breakdown of Capitalism. SSRN Working Paper Series, 2375578: 1–21. URL http://papers.ssrn.com/sol3/ papers.cfm?abstract_id=2375578.
- Kakarot-Handtke, E. (2014d). Mr. Keynes, Prof. Krugman, IS-LM, and the End of Economics as We Know It. *SSRN Working Paper Series*, 2392856: 1–19. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2392856.
- Kakarot-Handtke, E. (2014e). Objective Principles of Economics. SSRN Working Paper Series, 2418851: 1–19. URL http://papers.ssrn.com/sol3/papers.cfm? abstract_id=2418851.
- Kakarot-Handtke, E. (2014f). Profit for Marxists. SSRN Working Paper Series, 2414301: 1–25. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id= 2414301.
- Kakarot-Handtke, E. (2014g). The Profit Theory is False Since Adam Smith. What About the True Distribution Theory? *SSRN Working Paper Series*, 2511741: 1–23. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2511741.
- Kakarot-Handtke, E. (2014h). The Synthesis of Economic Law, Evolution, and History. *SSRN Working Paper Series*, 2500696: 1–22. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2500696.
- Kakarot-Handtke, E. (2014i). The Three Fatal Mistakes of Yesterday Economics: Profit, I=S, Employment. *SSRN Working Paper Series*, 2489792: 1–13. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2489792.
- Kakarot-Handtke, E. (2014j). Towards Full Employment Through Applied Algebra and Counter-Intuitive Behavior. *SSRN Working Paper Series*, 2456184: 1–25. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2456184.

- Kakarot-Handtke, E. (2014k). The Truly General Theory of Employment: How Keynes Could Have Succeeded. *SSRN Working Paper Series*, 2406891: 1–25. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2406891.
- Keen, S. (2010). Solving the Paradox of Monetary Profits. *Economics E-Journal*, 4(2010-31). URL http://dx.doi.org/10.5018/economics-ejournal.ja.2010-31.
- Keynes, J. M. (1973). The General Theory of Employment Interest and Money. The Collected Writings of John Maynard Keynes Vol. VII. London, Basingstoke: Macmillan. (1936).
- Klant, J. J. (1994). *The Nature of Economic Thought*. Aldershot, Brookfield, VT: Edward Elgar.
- Leijonhufvud, A. (1998). Discussion: Involuntary Unemployment One More Time. In R. E. Backhouse, D. M. Hausman, U. Mäki, and A. Salanti (Eds.), *Economics and Methodology. Crossing Boundaries.*, pages 225–235. Houndmills, Basingstoke, London: Palgrave.
- López, J., and Assous, M. (2010). *Michal Kalecki*. Houndmills, Basingstoke: Palgrave Macmillan.
- Marx, K. (1990). Capital, volume I. London: Penguin Classics. (1876).
- McCauley, J. L. (2006). Response to "Worrying Trends in Econophysics". *Econo-Physics Forum*, 0601001: 1–26. URL http://www.unifr.ch/econophysics/paper/show/id/doc_0601001.
- McKenzie, L. W. (2008). General Equilibrium. In S. N. Durlauf, and L. E. Blume (Eds.), *The New Palgrave Dictionary of Economics Online*, pages 1–18. Palgrave Macmillan, 2nd edition. URL http://www.dictionaryofeconomics.com/article?id=pde2008_G000023.
- Mill, J. S. (1874). Essays on Some Unsettled Questions of Political Economy. On the Definition of Political Economy; and on the Method of Investigation Proper To It. Library of Economics and Liberty. URL http://www.econlib.org/library/ Mill/mlUQP5.html#EssayV.OntheDefinitionofPoliticalEconomy.
- Mill, J. S. (2006a). Principles of Political Economy With Some of Their Applications to Social Philosophy, volume 3, Books III-V of Collected Works of John Stuart Mill. Indianapolis, IN: Liberty Fund. URL http://www.econlib.org/library/Mill/ mlP.html. (1866).
- Mill, J. S. (2006b). A System of Logic Ratiocinative and Inductive. Being a Connected View of the Principles of Evidence and the Methods of Scientific Investigation, volume 8 of Collected Works of John Stuart Mill. Indianapolis, IN: Liberty Fund. (1843).

- Mirowski, P. (1995). *More Heat than Light*. Cambridge: Cambridge University Press.
- Mirowski, P. (2013). *Never Let a Serious Crisis Go to Waste*. London, New York, NY: Verso.
- Morgenstern, O. (1941). Professor Hicks on Value and Capital. *Journal of Political Economy*, 49(3): 361–393. URL http://www.jstor.org/stable/1824735.
- Morishima, M. (1984). The Good and Bad Use of Mathematics. In P. Wiles, and G. Routh (Eds.), *Economics in Disarry*, pages 51–73. Oxford: Blackwell.
- Murad, A. (1953). Questions for Profit Theory. *American Journal of Economics* and Sociology, 13(1): 1–14. URL http://www.jstor.org/stable/3484955.
- Obrinsky, M. (1981). The Profit Prophets. *Journal of Post Keynesian Economics*, 3(4): 491–502. URL http://www.jstor.org/stable/4537615.
- Peirce, C. S. (1931). Collected Papers of Charles Sanders Peirce, volume I. Cambridge, MA: Harvard University Press. URL http://ssmith.no-ip.org/ebooks/_staging/pdf/Charles%20Pierce%20-% 20Collected%20Papers%20Vol.%201.pdf.
- Popper, K. R. (1980). *The Logic of Scientific Discovery*. London, Melbourne, Sydney: Hutchison, 10th edition.
- Popper, K. R. (1994a). The Myth of the Framework. In Defence of Science and Rationality., chapter Science: Problems, Aims, Responsibilities, pages 82–111. London, New York, NY: Routledge.
- Popper, K. R. (1994b). *The Myth of the Framework. In Defence of Science and Rationality.* London, New York, NY: Routledge.
- Porter, T. M. (1994). Rigor and Practicality: Rival Ideals of Quantification in Nineteenth-Century Economics. In P. Mirowski (Ed.), *Natural Images in Economic Thought*, pages 128–170. Cambridge: Cambridge University Press.
- Quiggin, J. (2010). Zombie Economics. How Dead Ideas Still Walk Among Us. Princeton, NJ, Oxford: Princeton University Press.
- Redman, D. A. (1997). *The Rise of Political Economy as Science. Methodology and the Classical Economists.* Cambridge, MA, London: MIT Press.
- Robbins, L. (1935). An Essay on the Nature and Significance of Economic Science. London, Bombay, etc.: Macmillan, 2nd edition.
- Rosenberg, A. (1980). *Sociobiology and the Preemption of Social Science*. Oxford: Blackwell.

- Rosenberg, A. (1992). Economics Mathematical Politics or Science of Diminishing Returns? Chicago, IL: University of Chicago Press.
- Rosenberg, A. (1994). What is the Cognitive Status of Economic Theory? In R. E. Backhouse (Ed.), *New Directions in Economic Methodology*, pages 216–235. London, New York, NY: Routledge.
- Schmiechen, M. (2009). *Newton's Principia and Related 'Principles' Revisited*, volume 1. Norderstedt: Books on Demand, 2nd edition. URL http://books.google.de/books?id=3bIkAQAAQBAJ&printsec=frontcover&hl= de&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false.
- Schumpeter, J. A. (1994). *History of Economic Analysis*. New York, NY: Oxford University Press.
- Solow, R. M. (1998). *Foreword*, volume William Breit and Roger L. Ranson: The Academic Scribblers. Princeton, NJ: Princeton University Press, 3rd edition.
- Stigum, B. P. (1991). Toward a Formal Science of Economics: The Axiomatic Method in Economics and Econometrics. Cambridge, MA: MIT Press.
- Tómasson, G., and Bezemer, D. J. (2010). What is the Source of Profit and Interest? A Classical Conundrum Reconsidered. *MPRA Paper*, 20557: 1–34. URL http://mpra.ub.uni-muenchen.de/20557/.
- Viner, J. (1963). The Economist in History. American Economic Review, 53(2): pp. 1–22. URL http://www.jstor.org/stable/1823845.
- von Bertalanffy, L. (1969). General Systems Theory. New York, NY: Braziller.
- Waldrop, M. M. (1993). Complexity. London: Viking.
- Wayne, J. J. (2014). Fundamental Equation of Economics. SSRN Working Paper Series, 2522492: 1–31. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id= 2522492.
- Weintraub, E. R. (1985). Joan Robinson's Critique of Equilibrium: An Appraisal. American Economic Review, Papers and Proceedings, 75(2): 146–149. URL http://www.jstor.org/stable/1805586.
- Weintraub, E. R. (2002). *How Economics Became a Mathematical Science*. Durham, NC, London: Duke University Press.
- Woodford, M. (1999). Revolution and Evolution in Twentieth-Century Macroeconomics. *Mimeo*, pages 1–32. URL http://www.columbia.edu/~mw2230/macro20C. pdf.
- Website: http://www.axec.org, see Terms of use; © 2014 Egmont Kakarot-Handtke