# ECONOMICS AND PLURALISM[1]

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## Abstract

The outburst of the 2008 global economic crisis sparked myriad criticisms on mainstream economic theory, held responsible for not even have considered the possibility of the kind of collapse that the subprime mortgage meltdown unleashed.

The time has come for the reconstruction of the economic theory. But to rebuild economic theory the first step is to ensure the existence of a level playing field where different theories compete with each other. Pluralism is called on to restore the academic principle of controversy within economics. This is the subject matter of this paper.

Pluralism is a workable solution to avoid the threat to economics posed by the near monopoly of an economic theory mostly divorced from reality and real-world problems.

Once physics became the *desideratum* for mainstream economists in search for a scientific approach, economics became a structure of mathematical reasoning erected on a set of axioms, trying to mimic physics as close as possible.

Mathematics is just a language but many verbal ideas cannot be translated into this particular language. The result is that the questions the mainstream economist chooses to answer are only those which are tractable with mathematical instruments.

It is reminded that, according to Kuhn, competing paradigms are incommensurable: they lack a common measure. They do not share -in Russell´s terms- the same 'universe of discourse'.

*A priori* beliefs play a decisive role in choosing what side of the divide the economist will be on and what tool kit she will resort to. Ultimately, the choice depends on whether they think that economics has to do with the efficient allocation of resources or with distributional issues; whether economic policy is meant to correct market failures or its main mission is to avoid government failures.

*Keywords*: pluralism, scientific method, mainstream economics, paradigm.

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## 1. Introduction

The outburst of the 2008 global economic crisis sparked myriad criticisms on mainstream economic theory, held responsible for not even have considered the possibility of the kind of collapse that the subprime mortgage meltdown unleashed.

For Colander et al. (2009: 2) the financial crisis revealed a ¨systemic failure of the economics profession¨ because the majority of economists ¨failed to warn policy makers about the threatening system crisis and ignored the work of those who did.¨

The financial crisis was preceded by a deregulation movement that took place during the 1980s and 1990s which was inspired by an almost religious belief in the power of market forces to solve any economic problem. Mainstream economics nourished that belief.

On the other hand, the measures taken to avoid a new Great Depression were far away from what the orthodoxy recommends. A massive bailout of banks and corporations saved them from collapse and saved lots of jobs in the American economy. Countercyclical fiscal policy played a key role in fighting recession. The level of State intervention in the economy reached unparalleled levels in the American history.

Once again, this story repeated itself during the Covid-19 pandemic. A huge monetary and fiscal intervention of Keynesian flavor took place all over the world.

The time has come for the reconstruction of the economic theory. But to rebuild economic theory the first step is to ensure the existence of a level playing field where different theories compete with each other. Pluralism is called on to restore the academic principle of controversy within economics. This is the subject matter of this paper.

Section 2 recalls how the intensive use of mathematics shaped mainstream economic theory; section 3 is devoted to summarize how institutional mechanisms favor endogamy in the profession; section 4 has to do with the effects of mainstream economic theory in economic policy; section 5 is devoted to the arguments in favor of pluralism in economics; section 6 warns against dogmatism in social sciences; the so-called demarcation problem is the subject of section 7; the problem of incommensurability of paradigms is addressed in section 8; in section 9 an alternative use of mainstream economics is suggested; section 10 argues that economic pathologies and how to cure them should become the hard core of economic research programs; section 11 concludes.

## 2. From Adam Smith to Arrow-Debreu

According to the founder of economics, Adam Smith, the original purpose of the discipline was an Inquiry into the Nature and Causes of the Wealth of Nations, as the title of his famous book proclaimed.

However, once physics became the *desideratum* for mainstream economists in search for a scientific approach, economics became a structure of mathematical reasoning erected on a set of axioms, trying to mimic physics as close as possible. This evolution culminated with the Arrow-Debreu general equilibrium model, which became the core body of mainstream economic theory.

It should not be surprising that a philosopher of science like Alexander Rosenberg (1992) has concluded that the mainstream version of economics is not an empirical science at all; instead –he maintains- it should be considered a branch of applied mathematics.

As Nobel Laurate Wassily Leontief (1982: 104) remarked, “page after page of professional economic journals are filled with mathematical formulas leading the reader from sets of more or less plausible but entirely arbitrary assumptions to precisely stated but irrelevant theoretical conclusions.”

The conditions for general equilibrium are so demanding that the Arrow-Debreu model is mostly useful as an explanation why the market´s “invisible hand” does not exist in the real world.

As Debreu (1991: 5) himself recognizes, “the very choice of the questions to which the economist tries to find answers is influenced by his mathematical background. Thus, the danger is ever present that the part of economics will become secondary, if not marginal, in that judgment.” The result is that the questions the mainstream economist chooses to answer are only those which are tractable with mathematical instruments.

Mathematics is a demanding master: it ceaselessly asks for weaker assumptions, for stronger conclusions, and for greater generality (Debreu 1991: 4). Mathematical models must be manageable and easy to handle. This requires drastic omissions and simplifications, often at the expense of the models’ ability to capture relevant phenomena.

Mathematics is just a tool to guarantee logical consistency. If logical consistency can be assured without mathematics, what is the point of using it apart from elegance? On the other hand, it should be used whenever it allows arriving at conclusions not reachable with only logical reasoning. For instance, for out-of-equilibrium analysis there is no alternative but to resort to dynamics models.

**The mathematization of economics**

Social sciences study the human society and social relationships. They emerged in the 19$^{th}$ century as an autonomous branch of knowledge differentiated from the natural sciences and the humanities.

Although economics is a social science it has developed following the model of the natural sciences, particularly of physics. Economists´ ambition has always been to attain the level of prestige and precision that physics has.

In Pareto´s words, “this general conception of economic aggregate finds an analogy in the conception which an astronomer has of the solar system when he has apprehended the general equations of mechanics” (Pareto 1897: 493). For Pareto, the economy was something equivalent to the solar system and the task of economists was to find out the laws that govern that system.

This trend gave a big leap forward with the advances in mathematics and computing that took place during the second half of the 20th century. Mathematization of economics was the direct result.

But the chosen track was not without cost. The questions to which the economists try to find answers are influenced by the mathematical instruments available to them. What economics can answer and what it cannot became increasingly dependent on the possibility of having a mathematical treatment.

Therefore, those questions which are not suitable for a mathematical treatment remain out of the economics perimeter, notwithstanding the importance they may have.

The academic rules of the game contribute to that result. Senior faculty mentors suggest their Ph.D. students to choose for their dissertations certain topics and the use of certain techniques with the aim of developing the skills necessary to produce articles on a regular basis for refereed economics journals. And this implies necessarily a mathematical treatment of the subject. If a paper does not include at least a dozen of equations, it will be rejected upfront by any of the top economic journals. As already mentioned in chapter 1, this mechanism favors endogamy in economics; in particular, the trend to transform economics into mathematical economics once the mathematical approach to a certain subject is interpreted as a quality mark.

This implies that mainly quantitative variables are taken into consideration in economics and that a phenomenon which cannot be quantified will not be considered a subject which deserves being considered in economic research.

It is true that mathematics is a language, as Samuelson reminded in his *Foundations*, quoting the motto of J. Willard Gibbs. The difficulty is that many verbal ideas cannot be translated into this particular language. Is this a sufficient reason to leave those ideas outside the economic theory perimeter without considering whether they are relevant or not to understand some aspect of the economic reality?

The labor economist Michael Piore tells a personal experience when carrying out a qualitative research. He chose a narrative form in spite of the hostility of his colleagues to this approach. "The research ´worked´ because it was problem-oriented; the problems were real and important, people were looking for solutions to them, and the prescriptions derived from conventional theory were not working" (Piore 2004:150). Should it be dismissed just because it is not based on a mathematical model?

### 3. Institutional mechanisms favor endogamy in economics

Heckman and Moktan, (2020) underline that a centralized power in the hands of a small group of editors and reliance on the so-called Top Five (T5) journals of economics that certify quality incentivizes professional incest and raises entry costs for new ideas and persons outside the orbits of the journals and their editors. As the authors remind, "decisions about promotions, recognitions, and even salaries are tied to publication counts in the T5" (Heckman and Moktan, 2020: 420). If you want to publish a paper in one of the T5s journals – and PhD students badly need to – you will write something within the perimeter of mainstream economics. "For many young economists, if a paper on any topic cannot be published in a T5 outlet, the topic is not worth pursuing" (ibid.: 420).

As Heckman and Moktan (ibid.: 422) remark, "authors, in an effort to increase their chances of publication, choose to conduct research that caters to the policy and/or methodology preferences of editors." In general, ingenuity in methods to solve ancient problems is better rewarded by publication than solving unexplored issues.

Moreover, Aistleitner et al. (2019) find a pronounced difference between economics and the other social sciences in the degree of discursive concentration measured as the share of journal self-citations plus the citation flow within top journals. Even in comparison with

physics journals there remains a substantial gap, showing that the relative high degree of concentration in economics also exceeds the degree of concentration measured within a sample of (multidisciplinary) physics journals.

The authors conclude that there is a strong concentration in terms of spatial distribution and personal as well as professional relations in economics in comparison with other academic disciplines.

Akerlof and Michaillat (2018) show how the lack of experimental evidence to test theories -as it usually happens in social sciences- may even lead to the persistence of false paradigms in the discipline. Their key assumption is that scientists have homophilous bias: in the decision to grant tenure, they favor scientists adhering to their paradigm and discriminate against those adhering to the rival paradigm. Their main result is that a small amount of homophilous bias makes a big difference regarding which paradigm prevails and, in some cases, science may converge to the worse paradigm if only few scientists initially believe in the better paradigm.

Homophily in the tenure process may favor worse-paradigm candidates, to the point that they may become more likely to receive tenure than better-paradigm candidates. Then, the number of tenured scientists believing in the worse paradigm grows faster than the number of tenured scientists believing in the better paradigm: science moves away from the truth (Akerlof and Michaillat 2018).

The authors remark that the fact that the physical sciences have made remarkable discoveries of high-power tests capable of distinguishing between true and false paradigms makes the difference with social sciences together with the fact that established scientists have been committed to admit into their ranks those whose work respects the findings of high-power tests.

Contrary to physics, in economics there is, broadly speaking, nothing like a crucial experiment. For example, given a certain econometric result, in many cases it is enough to just include another variable, or to slightly modify the model assumptions or the estimation method to get different, and even opposite, results. There are many examples in the economic literature in this respect. No matter how sophisticated the economic tools are and how detailed the set of data one deals with very few robust relationships can be obtained.

The aforementioned institutional mechanisms explain how orthodox economics can reproduce itself in quite an endogamic mode. Pluralism appears as the main solution to avoid the capture of a social science by a bad paradigm.

**4. From economic theory to economic policy**

Orthodox economic theory would be harmless if the conclusions and recommendations arrived at in its models were not used in policy design or in practical business.

For example, if we assume that lions are herbivorous, we will predict that any human being will be safe in the presence of a lion. Unfortunately, for the human beings in the real world, lions are carnivorous. That assumption may be very dangerous if used as a guide for human being action.

Something like this is what happens when the recommendations from mainstream economic models are implemented by governments or private agents forgetting that their predictions are only valid in the ideal world built by the scholars who developed them.

Paraphrasing Keynes, one could say that neoclassical economists resemble Euclidean geometers in a non-Euclidean world. For example, they did not even foresee the possibility of a financial crisis like the one the world witnessed in 2007/2009. Nobody should be surprised: in a world of price flexibility, unbounded rational expectations, no coordination failures, and so on, the mere possibility of a crisis is ruled out.

When choosing instruments from the mainstream economist´s tool kit it is very easy to forget the extremely –sometimes heroic– assumptions used in building a certain model. When implementing its results, it happens that the real world has very little to do with the theoretical one assumed by the model builder. The tragedy is that more often than not assumptions used to simplify the theoretical analysis are mistaken for the conditions of the real world with serious consequences for the people subject to the results of this confusion.

In the case of the 2007/2009 financial crisis, subprime mortgage securitization models relied on assumptions and historical data that turned out to be incorrect and therefore made incorrect valuations. Substantial lending to subprime borrowers was a recent phenomenon; historical data on the defaults and delinquencies of this sector of the mortgage market were scarce (Coval et al., 2009: 15). Some models were not even based on historical data because they referred to transactions for which there was no active trading market.

## 5. The need for pluralism

After the financial crisis exposed the shortcomings of mainstream economics, the need for pluralism in economics has become more acute. Pluralism is a workable solution to avoid the threat to economics posed by the near monopoly of an economic theory divorced from reality and real-world problems.

Pluralism in economics is necessary to allow the existence of different theories competing with each other so that scholars can compare them with “a mutual respect for the legitimacy of competing views” (Reardon, 2014). Just as carpenters choose the proper instrument from their toolbox according to their tasks, practitioners in economics must choose the appropriate tool from the collection of economic theories -our collective diversified intellectual portfolio.

Economics should be pluralist; it is the competition of ideas that makes science flourishing. A unique economic theory transmutes the discipline into a religion where economists compete to be more faithful to the economic Bible. It is rather striking that neoclassical advocacy of competition in the market to solve economic problems does not translate into competition between economic ideas.

Last but not least, according to Feyerabend (1981), pluralism is needed in science in general because theories are not confronted only with facts -as Popper maintained- but also against other theories. According to him, “we may explain our preference for it [a theory] by comparing it with other theories” (1975: 5) finding that it may be better than any other theory that is available at the time.

Following John Stuart Mill, Feyerabend defends the principle of proliferation: it is an “essential part of any rational inquiry concerning the nature of things” (Feyerabend 1981:

141). He quotes Mill when he said that only by the collision of adverse opinions truth has any chance of being supplied.

Feyerabend (1981: 140) provides a good description on how new theories evolve. When a new theory is first proposed "it faces a hostile audience; excellent reasons must be produced to gain for it an even moderately fair hearing. The reasons are often disregarded, or laughed out of court, and unhappiness is the fate of the bold inventors." Eventually, the theory is understood and accepted and becomes respectable to be represented at conferences and meetings. Finally, it enters the process of education itself and introductory texts are written and popularizations appear.

Pluralism is the guarantee against promising theories being prematurely aborted.

We are in the middle of a transition period. In this respect, Kuhn (2012, p. 85) asserted: "During the transition period there will be a large but never complete overlap between the problems that can be solved by the old and by the new paradigm. But there will also be a decisive difference in the modes of solution." The new paradigm has to show its ability to solve problems the old paradigm was incapable of solving, but also to show its aptitude to giving answers to the problems the old paradigm seemed to solve.

**6. In social sciences, truths are always relative**

Economics is a social science, not an exact science. Therefore, there have always been different schools of thought, which is inevitable in any social science for different reasons, not the least the influence of the personal or group´s *weltanschauungen*.

It is not only natural, it is healthy. For example, saltwater economists have pointed out different examples of market failures while freshwater economists have retorted with different cases of government failure. In many cases, both were right. In most cases, any assertion contains at least a grain of truth. Markets do fail: financial crises are an irrefutable illustration. Governments also do fail: the Soviet Union provided a myriad of examples in this respect.

Neoclassical economists are wrong in thinking that markets cannot fail as heterodox economists are if they ignore that governments can also fail.

The problem is with dogmatism: it occurs when some assertion is transformed into an absolute truth with the argument that it is what science says.

A typical mainstream argument is the one given by Lazear (1999: 5): "The power of economics lies in its rigor. Economics is scientific; it follows the scientific method of stating a formal refutable theory, testing the theory, and revising the theory based on the evidence."

The main difficulty with this assertion is that it is not true. Hausman (1992: 222) had long ago pointed out that the practice of economists has nothing to do with this description. Most tests in economics are inconclusive; it is quite unusual to see a theory discarded because of an apparent disconfirmation. In the same sense, Blaug (1992: 243) asserted: "mainstream neoclassical economists ... preach the importance of submitting theories to empirical tests, but they rarely live up to their declared methodological canons."

In social sciences, truths are always relative. This is the first thing to teach to economics students.

We must also teach students that "we are providing them with a set of tools to apply to real world problems, and the tools need to be selected according to the particular set of circumstances" (Ormerod, 2014).

Pluralism is called on to restore the lost academic principle of controversy within economics. It recognizes that both the effective development of theory and its valid application depend on debate between contrasting and opposed ideas (Freeman, 2009).

On the other hand, the coexistence of different schools of thought contributes to strengthen the discipline as a whole. Heterodox approaches have proved to be better equipped than the orthodox one to elucidate on what happens in turbulent times of crisis as well as on providing powerful insights towards what policies to follow then. They have been the life jacket that saved the economic system in 2007/09.

Any monism fosters sectarianism and exclusion of other schools from the economics discipline as well as intolerance of dissenters.

This is not just a theoretical possibility. The experience of the Soviet Union is an example to be taken into consideration. Economic education in the former Soviet Union was based on Marxist political economy. Worst of all, it was vulgar Marxism, that is to say the Stalinist interpretation of Marx. No other school of thought was neither taught nor allowed to be taught. There were no alternative ideas on the field to compete with the monolithic official curriculum.

Official economics was considered an absolute truth; therefore, there was no need for any alternative point of view. Studying any other economic thought was considered just a waste of time in a specular image of how Western mainstream economics consider the study of Marxist economics.

This also happened in the case of natural sciences as illustrated by the fate of genetics under Lysenkoism in the former Soviet Union.

The experience in other sciences illustrates that different theories pertaining to the same area are not necessarily antagonistic. Moreover, as Dow (2019) points out, considering a problem simultaneously from the point of view of different theories enhances understanding. She remarks that, even in the case mainstream economics were to dominate in a pluralist environment it would be a better situation than the current one in which its dominance is due to its monopoly power.

Beckenbach (2019: 18) distinguishes between complementary and competitive pluralism. The first has to do with the consideration the contributions that psychology, sociology and political science could offer for solving problems in economics or at least to broaden the perspective of economic analysis.

Competitive pluralism consists of analyzing the same subject matter as mainstream economics but within a different theory.

Both should be encouraged to help surmount the present crisis that mainstream economics has brought to the discipline.

## 7. The demarcation problem

One of the arguments against pluralism is that it would allow an unlimited proliferation of theories. Which is the demarcation criterion to differentiate what is acceptable from what is not?

Given the differences between natural and social sciences, what are the criteria to consider a social discipline as scientific?

To answer this question let us start with a previous one: what makes the difference between science and non-science? Is there something like a litmus test that allows us to distinguish science from what is not? Why chemistry, astronomy and evolutionary theory are sciences while alchemy, astrology and creationism are not?

For Popper a theory is scientific if it is falsifiable. This is a condition that has to do with the logical structure of sentences. Scientific theories make claims about the world which might be true or false. To be scientific, a theory should be falsifiable even though it is not in practice possible to falsify it. Non-sciences do not provide falsifiable statements: there is no possible observation that could serve to falsify their theories.

From the Kuhnian point of view, a science exists as far as there is a paradigm shared by most of its practitioners, as Canterbery and Burkhardt (1983) point out. According to this view, science is what scientists who are recognized as such by their colleagues, hold it to be. For Kuhn, science is a puzzle-solving activity. If a prediction fails, this is a puzzle that the scientist will try to solve with new measurements or with adjustments of the theory. This puzzle-solving activity is what differentiates science from non-science. If a prediction fails in astrology there are no new measurements or any theory adjustment that can solve the problem.

According to Lakatos (1978), in every science there is a competition between rival research programs. Progressive research programs allow discovering new and until then unknown facts. For this reason, progressive research programs gain the minds of most practitioners of the discipline. For Lakatos, the demarcation criterion should not be applied to an isolated hypothesis or theory but rather to a whole research program. A research program is scientific if it satisfies the minimum requirement that each new theory that is developed in the program has a larger empirical content than its predecessor. If a research program does not satisfy this requirement it is a degenerating program and should not be considered scientific.

Rhetoric is the art of persuading others –fellow scholars and academics, politicians and decision makers, students and followers– to accept some claims and dismiss others. Science is what scientists who are recognized as such by their colleagues hold it to be and rhetoric plays a key role in the competition between research programs. As McCloskey (1998) put it, science is an attempt to persuade other scientists. The scientist uses different devices to convince her colleagues. Be sophisticated statistical tests, complex mathematical models, thought experiments, controlled or not controlled experiments, and so on, they are just rhetorical devices to persuade the scientific community (McCloskey 1998: 24/27)).

However, there is a deep difference between arguing in favor of the laws of physics mentioning as evidence, for example, the fact that a spacecraft has traveled from Earth and successfully reached the International Space Station and the much weaker evidence that can

be alleged in most cases in defense of any regularity found in the social sciences. So, at least we must distinguish between strong arguments (usually present in natural sciences) and weak arguments (in most of the cases in social sciences).

Anyway, a demarcation criterion is necessary to avoid that "anything goes" as science. Every discipline at every point of time has certain patterns to delimit what is science and what is not, what is genuine knowledge and what is nonsense. Of course, these patterns are set by what at that time is considered "normal" science, using Kuhnian parlance.

The drawback is that, under certain circumstances, this may lead to the persistence of false paradigms in the discipline as the example given by Akerlof and Michaillat (2018) that has been mentioned above illustrates. But this is the price to pay in order to preserve science from charlatanism and other infections of the kind.

For this reason, it may even happen that a discipline sticks to a degenerating program as long as there is no alternative candidate to replace it or even after, as Lakatos admits.

What is the guarantee that a contemporary Galileo would not be punished for his new ideas and methods in the name of the accepted science? Pluralism. This is a necessary precondition in science to allow the existence of a level playing field where different theories compete with each other. The development of science requires avoiding both monopoly of a given theory as well as anarchism where no distinction is made between true knowledge and mere garbage.

## 8. Incommensurability of paradigms and the economics divide

The need for new modes of thought is a pervasive feature in the development of human knowledge (Brown 2001: 124). Incommensurability appears in scientific thought when a new approach requires ways of thinking that are significantly different from established ways of thinking (Brown 2001: 123).

According to Kuhn (2012), competing paradigms fail to make complete contact with each other's views. Competing paradigms use different concepts and methods and address different problems, limiting communication across the dividing line. For example, they cannot be compared because they are so alien that the meanings of the concepts of the one cannot clearly be translated into the concepts of the other. For this reason, competing paradigms are incommensurable: they lack a common measure. They do not share -in Bertrand Russell´s terms- the same 'universe of discourse'. Consequently, there are no external or neutral standards for a comparative evaluation of competing theories. According to Kuhn, "the proponents of competing paradigms practice their trades in different worlds" (2012: 149).

If this may be true in general for science, it is for sure true for social sciences. You would not expect a Keynesian to convince a neoclassical economist or vice versa because there is no common ground for the discussion. Economic goals, methods, concepts and problems are different. As a logical consequence, they have different proposals for economic policy.

As there is no crucial experiment to discern between both theories, they coexist side by side, available to be employed by the followers of each school of thought according to their respective affiliation.

What help do scholars have in choosing among competing economic theories? From time to time there takes place what I have called “big social experiments” (Beker 2005: 8) which discredit extant ideas and replace them with new ones. The Great Depression in the 1930s, for instance, discredited the idea that full employment of resources could be automatically reached. This did not mean that neoclassical thought totally disappeared but it took 40 years for it to recover and come back packed in the new Friedman-Lucas bottles.

The Keynesian paradigm is organized around the employment issue while the neo and new classical ones are organized around the monetary stability issue. Keynesians focus attention on the economic aggregates (income, consumption, investment, savings, etc.) while neo and new classical economists emphasize price interactions. For the latter, all adjustments are carried out via fully flexible prices while the former underlines the role of quantity constraints.

In the Keynesian toolbox the practitioner will find tools to deal with questions which have to do with unemployment and recession while the neo-new classical tool kit provides instruments meant to attain macroeconomic stability.

Both schools of thought can show success stories when their ideas were applied to the economic reality. Many of the policies followed to fight the consequences of the 2007/2009 financial crisis were manufactured in Keynesian laboratories. They prevented the Great Recession to become another Great Depression. The same applies to the recovery from the Covid-19 crisis. The rival school can show as success stories some of the IMF stabilization programs which restored macroeconomic equilibrium in several countries, in spite of the criticisms they received in terms of damaging growth and increasing poverty and inequality. The creation of market economies in Eastern Europe is usually included in this list.

Definitely, *a priori* beliefs play a decisive role in choosing what side of the divide the economist will be on and what tool kit she will resort to. Ultimately, the choice will depend on whether they think that economics has to do with the efficient allocation of resources or with distributional issues; whether economic policy is meant to correct market failures or its main mission is to avoid government failures.

**9. An alternative use of neoclassical economics**

Is there any possibility of using for some useful purpose the huge social investment made in building neoclassical economics?

Neoclassical economics main interest has been to show that the economic system converges to a stable equilibrium. Economic fluctuations appear as a sole product of exogenous shocks. In the absence of such shocks, the system tends to a steady state, as different versions of the neoclassical model of optimal growth predict. "Everything is for the best in the best of all possible worlds" is the Panglossian neoclassical conclusion.

But this conclusion is the result of very heroic assumptions that have little to do with the real world.

As stated above, the conditions for general equilibrium are so demanding that the Arrow-Debreu model is mostly useful as an explanation why the market´s “invisible hand” does not exist in the real world.

Investigating what happens when we relax these assumptions is the real work economics has to do.

For example, neoclassical theory concludes that full employment is an equilibrium outcome. A key assumption to arrive at that result is that prices and wages are downward flexible. If we assume that nominal prices and wages are downward sticky the conclusion is that unemployment may be an equilibrium outcome as posited by Keynes.

Another example is the usual assumption that information is complete, perfect and symmetric. But In the real world, information is in most cases incomplete, imperfect and asymmetric.

Therefore, the first necessary step in order to apply a neoclassical model to a real-world situation is to analyze the consequences of relaxing these assumptions. This would allow us to have a catalogue of possible diseases the economy may face.

**10. Economic crisis and other pathologies**

Since the appearance of the *General Theory* in 1936 the great divide in economics has been between those who think that government policies are necessary to stimulate aggregate demand and those who hold that the government is essentially incapable of affecting the level of economic activity.

Accordingly, we have had two different kinds of research programs inspired in one or the other perspective.

The so-called saltwater economists attribute fluctuations to shifts in demand and they argue that public policy can offset them while freshwater economists maintain that fluctuations are the result of supply shifts which the government cannot thwart.

In particular, the discussion had centered on the efficacy of monetary policy in moderating fluctuations, i.e. if money is or is not neutral.

Friedman, Lucas, Prescott and Kydland made every possible effort to demonstrate money neutrality. The New Keynesians strived in the opposite direction.

Meanwhile, the worst financial crisis ever was taking momentum to finally burst in 2007/2008.

This event took by surprise most economists both saltwater and freshwater ones. In both fields there was a common belief that crises were something of the past. However, as Reinhart and Rogoff (2009) had exhaustively showed, financial crises and sovereign debt defaults are far from being strange events in economic history. In both less developed as well as developed countries they are a recurrent phenomenon. “The very things that give capitalism its vitality –its power of innovation and its tolerance for risk– can also set the stage for asset and credit bubbles and eventually catastrophic meltdowns whose ill effects reverberate long afterward” (Roubini and Mihm 2011: 4).

The problem is that this goes against mainstream economics which, particularly after Lucas, was assuming that the economy is always in equilibrium and that any disruption has to be interpreted as an equilibrium phenomenon. This explains why most economists were totally unprepared to deal with the financial meltdown.

This is how Professor Mankiw (2010: 21) describes how the profession stood in front of the outburst of the financial crisis: the patient (the US economy) presented herself in terrible shape; the physician (economists) had never treated a condition with symptoms quite like hers before; and the causes of the ailments were unclear.

In fact, mainstream economists had never even considered the possibility of a financial crisis of that magnitude; therefore, they were very ill equipped to deal with it.

Professor Nouriel Roubini was one of the few economists who foresaw the crisis but his concerns were greeted with serious skepticism by most colleagues and decision-makers. After the crisis, he wrote a book with his colleague Stephen Mihm entitled Crisis Economics devoted to explain the causes of the financial crisis and lectured on it all around the world.

Given the fact that economic history tells us that crises are a persistent phenomenon which disrupts the functioning of the economic system once and again, we have to turn upside down the conventional equilibrium approach to the discipline and assume that most of the time the economy is out of equilibrium.

As I have argued elsewhere "studying economic pathologies and how to cure them should be more encouraged, while fewer resources should be devoted to merely showing why an economy is in good health" (Beker 2016: 195).

Economic pathologies and how to cure them should become the hard core of economic research programs. This has been the point of view of the great thinkers in economics. Right or wrong, Ricardo and Marx pointed to income distribution, Malthus to overpopulation, Jevons and Schumpeter to economic fluctuations, Keynes to unemployment.

Economics went astray when, instead of trying to study economic problems and how to solve them, economists considered that their mission was to demonstrate their non-existence because markets spontaneously solve all of them.

Economic fluctuations, financial crises and financial regulation, poverty, unemployment, climate and energy security, food and nutrition security, sustainable growth, are just examples of the agenda present and future generations of economists should address if they want to make a positive contribution to human well-being.

Once the research agenda is agreed, then comes the choice of the appropriate methodology, not the other way around.

## 11. Conclusions

After the Great Financial Crisis exposed the failures of mainstream economics, the need for rebuilding economic theory has become an urgent task.

A necessary precondition for that is the existence of a level playing field where different theories compete with each other. Pluralism is the guarantee against promising theories being prematurely aborted.

Pluralism does not mean that "anything goes" Every discipline at every point of time has certain patterns to delimit what is science and what is not, what is genuine knowledge and what is nonsense.

Subjects like economic fluctuations, financial crises and financial regulation, poverty, unemployment, climate and energy security, food and nutrition security, sustainable growth, are just examples of the agenda present and future generations of economists should address if they want to make a positive contribution to human well-being.

Once the research agenda is agreed, then comes the choice of the appropriate methodology, not the other way around.

**References**


Aistleitner, M., Kapeller, J., & Steinerberger, S. (2019). Citation patterns in economics and beyond. *Science in Context*, *32*(4), 361–380. https://doi.org/10.1017/s0269889720000022

Akerlof, G. A. and Michaillat, P. (2018). Persistence of false paradigms in low-power sciences. PNAS. rea

Beckenbach, F. (2019). Monism in modern science: The case of (micro-)economics. Cusanus Hochschule Working Paper. https://www.researchgate.net/publication/344417861_Monism_in_modern_science_The_case_of_micro-economics

Beker, V. A. (2005). Is Economics a Science? A Discussion of Some Methodological Issues (July). https://ssrn.com/abstract=839307 or http://dx.doi.org/10.2139/ssrn.839307

Beker, V. A. (2016), From the Economic Crisis to the Crisis of Economics. In Moro, B. and Beker, V. A. *Modern Financial Crises*. Springer, Heidelberg.

Blaug, M. (1992). *The Methodology of Economics*. Cambridge University Press, New York.

Brown, H. I. (2001). Incommensurability and Reality. In Hoyningen-Huene, P., and Sankey**,** H. (Eds.), *Incommensurability and Related Matters*. Kluwer Academic Publishers, pp. 123-142. .

Canterbery, E. R. and Burkhardt, R. J. (1983). What Do We Mean by Asking Whether Economics Is a Science? In Eichner, A. S. (ed.), Why Economics is Not Yet a Science. Routledge. London.

Colander, D., Föllmer, H., Haas, A., Goldberg, M., Juselius, K., Kirmen, A., Lux, T., & Slot, B. (2009). The financial crisis and the systematic failure of Academic economics. Working paper No. 1489, February 2009, Kiel Institute for the World Economy. URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1355882

Coval, J., Jurek, J., and Stafford E. (2009). The Economics of Structured Finance. *Journal of Economic Perspectives*, Vol. 23, Number 1, Winter, pp. 3-25.

Debreu, G. (1991). "The Mathematization of Economic Theory". *American Economic Review*, March. Vol. 81, Issue 1, pp. 1-7.

Dow, S. (2019). Pluralist economics. Is it scientific? In Samuel Decker, Wolfram Elsner, Svenja Flechtner (eds.), Advancing Pluralism in Teaching Economics: International Perspectives on a Textbook Science. Routledge, Abingdon, UK.

Feyerabend, P. K. (1981). Realism, Rationalism and Scientific Method. *Philosophical Papers*. Vol. I. Cambridge University Press. Cambridge, UK.

Freeman, A. (2009) 'The Economists of Tomorrow: the Case for a Pluralist Subject Benchmark Statement for Economics,' *International Review of Economics Education.* Vol. 8, no. 2, pp. 23-40.

Hausman, D.M. (1992). The inexact and separate science of economics. Cambridge University Press, Cambridge.

Heckman, J.J. and Moktan, s. (2020). Publishing and Promotion in Economics: The Tyranny of the Top Five. *Journal of Economic Literature*, 58(2), pp. 419–470.

Kuhn, T.S. (2012). *The Structure of Scientific Revolutions.* 4th Edition, University of Chicago Press, Chicago.

Lakatos, I. (1978). The methodology of scientific research programmes. *Philosophical Papers*, Volume I. Cambridge University Press. Cambridge, UK.

Lazear, E. P. (1999). Economic Imperialism. NBER Working Paper 7300. http://Www.Nber.Org/Papers/W7300

Leontief, W. (1982). Letter to the editor. Science, Issue 217.

Mankiw, N. G. (2010). Crisis Economics. *National Affairs*. Summer. https://scholar.harvard.edu/files/mankiw/files/crisis_economics.pdf

McCloskey (1998). *The Rhetoric of Economics*. University of Wisconsin Press, Madison.

Ormerod, P. (2014) 'Notes on a Real World Economics Curriculum,' In M. A. Madi and J. Reardon (Eds..) *The Economics Curriculum: Towards a radical reformulation,* WEA/College Publications, Bristol.

Pareto V., (1897). The New Theories of Economics. *Journal of Political Economy*, 5, pp.485-502.

Piore, M. J. (2006). Qualitative Research: Does it fit in economics? In Ellen Perecman and Sara R. Curran (eds.) *A Handbook for Social Science Field Research: Essays & Bibliographic Sources on Research Designs and Methods.* SAGE Publications, Thousand Oaks, California, pp.143-157.

Reardon, J. (2014) 'A radical reformation of economics education,' In M. A. Madi and J. Reardon (Eds.) *The Economics Curriculum: Towards a radical reformulation*. Chapter 12. WEA/College Publications, Bristol.

Reinhart, C. M. and Rogoff, K. S. (2009). *This Time Is Different: Eight Centuries of Financial Folly.* Princeton University Press. Princeton.

Rosenberg, A. (1992). *Economics. Mathematical Politics or Science of Diminishing Returns?* The University of Chicago Press. Chicago.

Roubini, N. and Mihm, S. (2011). *Crisis Economics*. Penguin Books, London.