Research Article

WHITHER MACROECONOMICS? THE EVOLUTION OF MACROECONOMIC THOUGHT SINCE KEYNES

Sinem KUTLU
Assist. Prof. Dr., İstanbul University, sinemkut@istanbul.edu.tr
ORCID Number: 0000-0001-9392-2458

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ABSTRACT

Macroeconomics is mainly a twentieth-century development and has gone through a gradual change since its rise. Historical events that challenged existing theories and resulted in empirical failures led to the evolution of new ideas, which in turn, gave rise to revolutions and counter-revolutions in macroeconomics. The purpose of this study is to provide insight into the way macroeconomics has evolved. The study aims to shed light on the evolutionary process it has experienced and to point out that major developments in macroeconomic thought can not be addressed independently of the historical context. In this regard, it demonstrates a brief discussion of the history of macroeconomics since Keynes's General Theory. In the last part, it asserts that macroeconomics will certainly continue to change and progress by a process of evolution just as much as it has done in the past.

Keywords: History of economic thought, macroeconomics, J. M. Keynes.

INTRODUCTION

Following its rise as a twentieth-century development, macroeconomics has gone through an evolutionary process. When discussing the history of macroeconomics, to make frequent use of terminology such as 'revolution' and 'counter-revolution' is, thus, common practice among economists. Given the complexity of the real world, macroeconomic theories simplify reality and convert it into abstract reasoning. However, the evolution of economists' thinking on macroeconomic reality is far from smooth. Prolonged disagreements and controversies were the prominent feature of the twentieth-century macroeconomic thought.

The evolution of macroeconomics is best understood in a historical context. The progress of events provides a better understanding of the driving forces behind the rise and fall of ideas and theories in the conventional macroeconomic wisdom. Theoretical ideas can help us understand historical events, but the reverse is also true: "the outcome of historical events often challenges theorists and overturns theories, leading to the evolution of new theories" (Gordon, 2000: 580). The Great Depression was a milestone for Keynes's General Theory and gave birth to modern macroeconomics. Similarly, accelerating inflation in the late 1960s and early 1970s paved the way for the Monetarist counter-revolution.

There isn't any doubt that major developments in macroeconomic theory have never been independent of the background against which they have emerged (O'Brien, 2004: 164). On the other hand, these developments and new ideas have had a cumulative effect on the field by leading a wider and deeper knowledge base. But at the same time they lay the groundwork for fundamental disagreements among macroeconomists. The debate about the scientific status of macroeconomics is mainly a result of these disagreements and predictive failures of economists. However, scientific progress is achieved by creating new knowledge, which automatically entails pushing research into new and hence necessarily controversial territory. Therefore, controversies and comparative interplay of ideas have been, and will continue to be, a driving force for the progress of macroeconomics.

The purpose of this study is to provide insight into the way macroeconomics has evolved. In this regard, the main target here is to shed light on the evolutionary process it has experienced and to point out that major developments in macroeconomic thought can not be addressed independently of the historical context. Accordingly, the study begins with a review of the evolution of macroeconomics in the 20th century. The second part includes an analysis of New Neoclassical Synthesis of the 1990s. The third part examines the impact of 2008 financial crises on macroeconomics. The fourth part presents a discussion of the current state of macroeconomics. The last part proceeds to conclusion with some final thoughts regarding the future of macroeconomics.

The Evolution of Macroeconomics in the 20th Century

The birth of modern macroeconomics is traced back to Keynes's The General Theory of Employment, Interest and Money (1936), which is usually accepted as the cornerstone of macroeconomic wisdom. Although neoclassical economics is primarily based on microeconomics, economists before Keynes certainly had macroeconomic concerns and analyzed the subject matter of macroeconomics. However, Keynes's General Theory had a profound intellectual impact and laid the foundations for the emergence of modern macroeconomics as a coherent and systematic approach.

Macroeconomics is inherently a twentieth-century development. It is usually the course of historical events which paves the way for the evolution of new ideas and theoretical advances. The Great Depression, of course, was the main driving force behind the Keynesian revolution. De Vroey and Malgrange (2011) said that without the Great Depression, Keynes's General Theory would not have seen the light of the day. It was not only the most severe and widespread economic crises that the capitalist system has ever faced. But it also had a striking effect upon thought about macroeconomic matters. One of the most important consequences of the Great Depression was the paradigm shift in economics. Dominant paradigm in economics until the Great Depression was the neoclassical laissez-faire doctrine. According to the neoclassical doctrine, which presupposes that the real-world markets incorporate conditions of perfect competition, rational agent-based economic system is guided by an invisible hand. All prices are regarded as perfectly flexible and imbalances in the markets are eliminated automatically without any need for government intervention. As a result, the economy is assumed to be always at full-employment. In these circumstances, the neoclassical doctrine rules out government intervention in the economy. However, the Great Depression deeply impaired its prestige because neoclassical economics couldn't explain the mass unemployment that occurred during the Great Depression.

The decline of neoclassical economics is followed by the rise of Keynes who offered a theory of depression economics. According to Keynes, involuntary unemployment is an apparent characteristic of equilibrium in a laissez-faire capitalist economy. The reason behind involuntary unemployment is a deficiency in aggregate demand. The level of aggregate demand is the foremost determinant of total output and needs government regulation. In this context, Keynes's policy advice was in favor of active government intervention in order to maintain an ideal level of aggregate output and employment (Snowdon and Vane, 2005: 8). As Keynes's policy prescriptions played an important role for economic recovery in the Great Depression, Keynesian economics became the dominant paradigm in macroeconomics until the 1970s.

The General Theory was path-breaking not only in changing mainstream economic views but also in revolutionizing the way economists think about economics. Thus, the Keynesian revolution was "a revolution in method" (Lucas and Sargent, 1979: 2). The fact is that most of the features of Keynes's theory cannot be justified unless the revolution is held in this way. "The development of explicit statistical descriptions of economic behavior" and "the introduction of the use of mathematical control theory to manage an economy" are among the most prominent ones that triggered "the evolution of macroeconomics into a quantitative,

scientific discipline". Lucas and Sargent added that "Keynesian theory lent itself so readily to the formulation of explicit econometric models which accounts for the dominant scientific position it attained by the 1960s" (Lucas and Sargent, 1979: 2).

The rise of Keynesian economics was central to the development of modern macroeconomics on several counts. First and foremost, Keynesian revolution consequently initiated or consolidated a division between micro and macro as the two main branches of economic theory. Keynes's theorizing emphasized a coherent dynamic model, which in turn emphasized the simultaneous determination of a set of key variables in the economy (Woodford, 1999: 5-6). So his setting was based on an aggregative model of the economy as a whole, which allowed of relations of simultaneous causation. From this point of view Keynes's method was "holistic" and "organicist" as opposed to individualistic and atomistic methodology of neoclassical economics. Keynes also introduced the concept of uncertainty, which was the most striking novelty leading a distinct theoretical construction from classical theory (Milonakis and Fine, 2009: 272-73).

The emergence of Keynesian economics was, on the other hand, a radical challenge to conventional economic theory and led many controversies among traditionalist economists and Keynes's adherents. Although some stressed the incompatibility between Keynesian and neoclassical economics, others attempted to reconcile these two strands of economics into a synthesis. The synthesis of the ideas of the neoclassical economists with those of Keynes was developed mainly by John R. Hicks (1937), who presented the IS-LM model in his article and Paul A. Samuelson (1955), who coined the term "neoclassical synthesis" into the literature with his influential textbook, Economics. In fact, this consensus view of macroeconomics relied heavily on the interpretation of the General Theory provided by Hicks (1937) and modified by the contributions of Modigliani (1944), Patinkin (1956), Tobin (1958) and Samuelson (1955). Neoclassical synthesis became the standard textbook approach to macroeconomic analysis and remained the dominant paradigm in mainstream economics until the early 1970s (Snowdon and Vane, 2205: 22).

However, the consensus in macroeconomics faltered as the neoclassical synthesis lost its mainstream position. The flaws behind its failure were both theoretical and empirical. In empirical context, neoclassical synthesis could not deal successfully with the rising rates of inflation and unemployment experienced during the 1970s. In theoretical context, it left a massive gap between microeconomic principles and macroeconomic practice which made it intellectually unsatisfying (Mankiw, 1990: 1647). Most importantly, the breakdown of the consensus view was also a signal of the beginning of a period when the dominance of Keynesian macroeconomics came to an end. There was a sustained increase in the rate of inflation in many developed economies beginning in the late 1960s. This was in part due to the fact that Keynesian views were highly influential not only within the academy but among policymakers as well. But the problem is that oversimplified Keynesian model relatively neglected the effect of demand boost upon the general level of prices. Keynesian policymakers argued that public polices to increase aggregate demand should not lead to inflation as long as output remained below its full-employment level. This generated an inflationary bias to policy during most of

the period and this failure was in part attributed to a flaw in Keynes's conceptual framework (Woodford, 1999: 12-13).

During the 1970s Keynesian approach was subjected to severe waves of criticisms and increasingly came under attack by "counter-revolutionary" approaches in macroeconomic thought. One of the most fundamental of them was the Monetarist school, associated in particular with Milton Friedman. Friedman was critical of the central policy tenets of Keynesianism, especially the prevailing Keynesian view of the Phillips curve. The view about the existence of a trade-off between inflation and unemployment was the basis for the policy idea that the government can reduce unemployment by increasing the money supply. But, the sustainability of this policy refers to such a trade-off which requires a stable Phillips curve. Friedman claims that expansionary monetary policy has real effects only in the short run and that these real effects occur only if the changes in money supply are unanticipated. Behind his claim lies the assumption that economic agents revise their expectations following a change in money supply. In this context, the short run Phillips curve is downward sloping, while, in the long run, it is vertical at a certain level of unemployment, namely, "the natural rate of unemployment" coined by Friedman (See: Figure 1). Two Monetarist economists, Friedman (1968) and Phelps (1968) famously predicted that the Phillips curve would shift. Their predictions profoundly came true in the 1970s and one of the pillars of Keynesian macroeconomics, the Phillips relation, inevitably faltered.

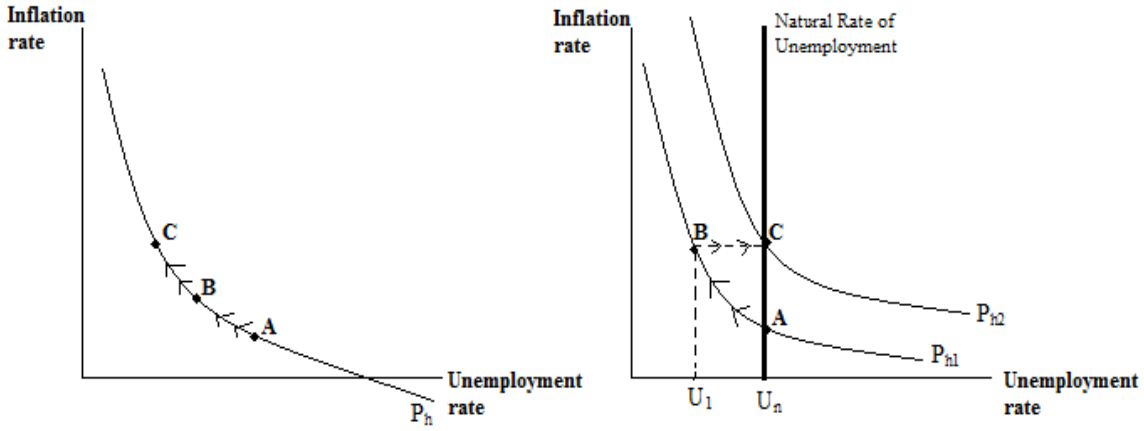

Figure 1. Monetarist vs. Keynesian View of the Phillips Curve

In line with the Monetarist view, the other approach which is underpinned by the belief that there is no need for active stabilization policies was the New Classical school. This second wave of attack was directed at the role of expectations as a crucial element in macroeconomic models and provided even much more damaging critique of Keynesian macroeconomics. Their main argument against Keynesian approach was that they had failed to explore the full implications of endogenously formed expectations on the behaviour of economic agents (Snowdon and Vane, 2005: 219). New Classicals believed that the decisions that determine most macroeconomic variables, such as consumption and investment, depend crucially on expectations of the future course of the economy. This way of modeling expectations was originally proposed by John F. Muth (1961) and later became influential when it was used by Robert Lucas, Jr. (1972) and Thomas J. Sargent and Neil Wallace

(1975). Lucas, who is widely seen as the central figure in the development of the New Classical approach to macroeconomics, points out that most policy interventions change the way individuals form expectations about the future. Given that the structure of econometric models consist of optimal decision rules of economic agents, and that optimal decision rules vary systematically with changes in the structure of series relevant to the decision maker, any change in policy will systematically alter the structure of econometric models (Lucas, 1976: 41). Therefore, Lucas argues that these Keynesian-style macroeconometric models are not capable of evaluating the impact of alternative policies. The argument known as the Lucas critique, together with the rational expectations hypothesis, became the basic tenets of New Classical approach and brought it to the centre of macroeconomic discourse.

In 1980s, a new wave of attack on Keynesian macroeconomics, namely the Real Business Cycle (RBC) theory, was launched by a group of economists in the neoclassical tradition. RBC theory was in fact associated with the New Classical paradigm which went through an inner evolution and led to the development of RBC theory under Finn E. Kydland and Edward C. Prescott's (1982) lead. RBC theorists rejects Keynesian economics and the real effectiveness of monetary policy in the sense that business-cycle fluctuations can be explained to a large extent by persistent real (supply-side) shocks, in contrast to unanticipated monetary (demand-side) shocks. These real shocks mainly center on large random fluctuations in the rate of technological progress that engenders fluctuations in relative prices, which in turn, stimulates rational economic agents to react optimally by changing their supply of labor and consumption. According to RBC models, monetary policy does not imply any effect upon the economy and thus, the "classical dichotomy" of nineteenth-century monetary theory holds even in the short run (Woodford, 1999: 25).

Potentially damaging attacks, mainly those of New Classicals caused a radical challenge to Keynesian theory. Two main policy implications of New Classicals (the policy ineffectiveness proposition and the Lucas critique of econometric policy evaluation) were distinctly against the Keynesian thoughts and had a revolutionary effect on modern macroeconomics. Soon after the severe criticisms directed against Keynesian view, the so-called Keynesian economists reacted in several ways to rejuvenate Keynesian ideas. Some of them admitted that many of Lucas's criticisms were well-grounded and could not be rejected. This was the viewpoint of "New Keynesian" economists who wanted to rehabilitate Keynes's thoughts while accepting the central tenets of New Classical economics. This endeavour involved a deeper adherence to basic neoclassical principles at the expense of abandoning many traditional Keynesian notions (De Vroey and Malgrange, 2011: 14). Keynesian models were modified so as to take into account both the influence of inflationary expectations and the impact of supply shocks. In this context, New Keynesian models incorporated the rational expectations hypothesis, the assumption that markets may fail to clear due to wage and price stickiness and Friedman's natural rate hypothesis.

The New Consensus: "New Neoclassical Synthesis" of the 1990s

Towards the end of the 1980s, macroeconomics portrayed as a field in intellectual disarray, due to the struggles between competing schools of thoughts, and persistent disagreements about methodological, theoretical and political issues. As in 1960s, there were two camps in general: one attached to neoclassical principles and the other that follows Keynes's insights. New Classical macroeconomics and RBC theory which are in the first camp depend on flexible price models in which monetary policy is essentially unimportant for real economic activity. On the contrary, New Keynesian economics in the second camp relies on sticky-price models in which monetary policy is viewed as central to the evolution of real economic activity. However, by the mid-1990s this intellectual disarray began to evolve into a new consensus between New Classical/RBC theory and New Keynesian economics. This was in part due to the challenges facing the policymakers and economists in employing recent and ongoing developments in macroeconomics. The new consensus on the practice of macroeconomics, the so-called "New Neoclassical Synthesis" (Goodfriend and King, 1997), provides the theoretical foundation for much of contemporary mainstream economics.

In methodological sense, New Neoclassical Synthesis integrates Keynesian and Classical aspects. According to Goodfriend and King, the central elements of the synthesis are two-fold. The first one is built on New Classical macroeconomics and RBC analysis and incorporates intertemporal optimization and rational expectations into dynamic macroeconomic models. The second one is built on New Keynesian economics and incorporates imperfect competition and costly price adjustment. They also assert that the new synthesis seeks to develop quantitative models of economic fluctuations like the RBC program (Goodfriend and King, 1997: 255).

According to Woodford (2008), methodological struggle within macroeconomics almost came to an end with the development of the new synthesis that combines critical elements of each of the seemingly conflicting traditions of macroeconomic thought. Woodford also outlines five elements to describe the fundamentals of the new synthesis (Woodford, 2008: 3-13). The first is that the new synthesis uses the tools of general equilibrium theory to model Keynesian insights and, by doing so, aims to bridge the methodological gap between micro- and macroeconomics. In contemporary literature, this refers to using intertemporal general equilibrium foundations to model the complete dynamics of the macro economy. This type of analysis allows examining both short-run and long-run fluctuations in a single framework. The second is that the new synthesis puts emphasis on quantitative policy analysis with structural econometric models. This framework allows consideration of models' ability to explain statistical properties of observed aggregate time series. The third is that the new synthesis models expectations as endogenous and accepts the methodological principles of the rational expectations hypothesis, and it also addresses the Lucas critique in policy analysis. Yet, it does not view stabilization policies as necessarily ineffective, as earlier proponents assumed. Within modern general equilibrium models with sticky prices and rigidities, the new synthesis does not ignore the effects of policies in terms of the consequences of the tradeoff between inflation and real activity. The fourth is that the new synthesis accepts real disturbances as an important source of economic fluctuations. The view that short-run

variations in economic activity may be attributed to real disturbances is in contrast with the views of Monetarists and New Classicals who attributed economic fluctuations primarily to exogenous random variations in monetary policy. Finally, the new synthesis embraces monetary policy, especially as an effective means of inflation control. The role of central banks in implementing disinflationary policies is widely recognized.

The development of New Neoclassical Synthesis paved the way for a new consensus with regard to monetary policy. Some guiding principles for the practice of monetary policy were set forth by the new synthesists. Goodfriend and King (1997) underline a set of major conclusions about the role of monetary policy within New Neoclassical Synthesis models. First, monetary policy can substantially affect real economic activity, but since prices are adjusted gradually, these effects may persist over several years. Second, even price adjustment is assumed to be costly, the long run trade-off between inflation and real activity is suggested as limited. Third, elimination of inflation can yield considerable gains by increasing transactions efficiency and reducing relative price distortions. Fourth, the models put emphasis on credibility in that it plays a significant role in recognizing the impacts of monetary policy (Goodfriend and King, 1997: 232). These ideas are in fact consistent with the acknowledgments of various countries' central banks around the world.

The Impact of 2008 Financial Crisis on Macroeconomics

From the beginning of the 20th century until today, each economic crisis faced by world economies has brought macroeconomics into the center of criticisms throughout the history. These crises, which usually break out in financial markets and spread rapidly over real markets, turn into world-wide economic crises in a short span of time due to their extensive impacts and the global nature of markets. The 2008 financial crisis that began in the U.S. and took hold of many economies around the world is undoubtedly the most destructive global economic crisis of the recent history. The financial crisis of 2008, which was triggered in the U.S. subprime mortgage market and accelerated by the collapse of a number of giant financial institutions, had devastating consequences for the global financial system. As the financial crisis penetrated the real sector, the global economic system experienced an ever-deepening recession. In the first quarter of 2009 the economic activity declined significantly and unemployment rose rapidly in many other countries besides the U.S. Consequently, the crisis of 2008 went down in history as the most disastrous global economic crisis since the Great Depression (Allen and Carletti, 2010: 2).

It was indeed the deregulation of U.S. financial markets in the 1970s and 1980s which paved the way for the financial crisis. Policymakers' failure in implementing effective regulatory policies for financial firms led these institutions take highly leveraged risky positions, which culminated in massive increase in house prices. In fact, the currency crises of the late 1990s should have been an indicator and early warning of the possible danger. Unfortunately, it wasn't and the policymakers of the 2000s had to pay for the sins of their ancestors (Eichenbaum, 2010).

What about economists? As in the previous ones, economists who were unable to foresee the crisis were target of the criticisms again. However, in this case, economists' ignorance to see the highly probable destructive failures of the market economy, but not the predictive failure was at the forefront. Inherent stability of the markets was the conventional wisdom among financial economists and led them to believe that the assets were traded at the right prices. In such circumstances, the predominant models could not forecast the coming of the collapse of this kind.

The economics profession's rigid adherence to capitalist market economy seemingly kept them from seeing the truth. Neoclassical economics assumes that the real world markets have the characteristic of capitalism which is a perfectly competitive system. Agents are assumed to be rational and formal mathematical modelling is commonly used. Economists aim to develop economic models in order to explain causal relationships between economic variables. Because, if economic theory is to be a useful tool for policymaking, it must be quantifiable (Ouliaris, 2012). Undoubtedly, these unrealistic assumptions and extensive use of mathematics are among the methodological fallacies behind macroeconomics' failure. Economists' strong dependence on formalism offered them idealized vision of an economy while providing an intellectually elegant approach. However, this vision led them to neglect all the things that can go astray: limitations of human rationality, institutional problems, market imperfections and regulation. The ignorance towards all these things eventually results in sudden severe downturns which prevents an economic system from performing its functions (Krugman, 2009).

The hegemony of formalism in economics is one of the reasons behind its failure to deal with real world issues. Given the complexity of the real world, macroeconomic models simplify reality and convert it into abstract reasoning. Thus, the intellectual problem for economists is how to capture the complicated behaviour of interacting individuals engaged in economic activity (Snowdon and Vane, 2005: 4). The 2008 financial crisis revealed once more that modern macroeconomic models could not implicitly regard markets as inherently stable. Another blind spot was the limited attention that had been given to the financial sector in these models. Following the crisis, there has occurred a widespread admission that the realities of finance will have to be firmly incorporated into macroeconomics. De Vroey and Malgrange (2011) suggest that the 2008 crises will certainly have an impact on the course of macroeconomics and the subsequent surge of work aiming to fill this gap will be the clearest sign of it.

So, the crisis had its impacts on three central areas of macroeconomics, namely methodology, theory and economic policy. Most importantly, the economics profession has acknowledged the importance of irrational and unpredictable behavior of individuals and inherent imperfections of markets and also admitted that the elegant economic theorization of everything is far from reaching (Krugman, 2009). In practical terms, this evokes more cautious policy advice and more deliberate action instead of absolute faith in the markets as the solution to all economic problems. In this context, Krugman (2009) states that Keynesian economics remains the best framework for making sense of recessions and depressions.

The Current State of Macroeconomics

If you ask people, both inside and outside of the academy, what the current state of macroeconomic science is, most of them will say that it is "not good". It's true that the economic crises and economists' failure to see them coming have played a significant role for these views. However, setting aside predictive failures and the other issues related to crises, the current state of macroeconomics can be seen more clearly just by looking at its evolution as a science. Thus, it is necessary to look at the theoretical, methodological and political developments in the field in order to do a sound evaluation for the current state of it.

Macroeconomics is a dynamic discipline. The working of the economy has improved over the years and is still emerging. Accordingly, our understanding of the principles of macroeconomics has advanced. New ideas and developments followed by each other have subsequently led to an ever-expanding and deeper base of knowledge in the field. In the scientific sense this expansion and competition of ideas has not inevitably produced truth, however, they have generated a widely accepted body of fundamental principles of macroeconomics. Undoubtedly, such principles are still emerging in the field.

The development of macroeconomics can be explained partly by the current economic events and partly by increased professionalism among economists. In some cases, the critical issues of the day have stimulated new developments in macroeconomic theory. In other cases, current events and problems have reawakened the theories that were already developed. A striking example is the 2008 financial crisis which has renewed the profession's and the public's attention and brought the business cycle theory back into relevance. In yet other cases, advancement of new theories have taken place independently of the current issues. Besides increased professionalism among economists, greater interest in understanding the unsolved problems and improving existing theories has been a key factor for the advancement of the discipline. The development of general equilibrium theory is one of the prominent examples (Brue and Grant, 2013: 557).

On the other hand, though the problems of the field have hardly all been resolved, there are currently fewer fundamental disagreements among macroeconomists than in past decades. In the 1960s, 1970s and 1980s, macroeconomists were divided by controversies that even related to basic questions of method, such as the kinds of models that could reasonably be employed in macroeconomic analysis, the kinds of empirical work that could prove anything and the kinds of questions that could be answered about the real world. Even if there remains a wide range of ideas on many issues, there has seemingly been a convergence of views in macroeconomics in the context of its history. According to Woodford, the cessation of methodological struggle within macroeconomics is largely due to the development of New Neoclassical Synthesis (Woodford, 2008: 3). This new synthesis, which incorporates important elements of each of the apparently irreconcilable traditions of macroeconomic thought, is in fact an emerging consensus from an ever-evolving debate within macroeconomics.

In fact, the methods currently used in macroeconomics are very tight and they don't allow much scope for disagreement. The economics profession is increasingly using similar tools and models. The essence of the real business cycle analysis and the essence of the rational expectations models have seemingly been absorbed by everyone. Macroeconomic frameworks are flexible enough to articulate a great variety of views, not just the views emerging from macroeconomic models of the 1970s. Therefore, there is a growing convergence, in the sense of using a similar set of tools (Ibáñez, 1999: 88). In the sense of macroeconomic thinking, new ideas do not necessitate the total abandonment of the existing legacy. New knowledge in macroeconomics is usually connected to a previous body of thought and even if it may alter or transform the older tradition, it rarely replaces it. For instance, Keynes took his inspiration largely from the neoclassical doctrine and methodology. Despite being revolutionary, Keynesian ideas did not supersede completely the neoclassical tradition. As being a student of Marshall, Keynes did not have a great dispute with the main body of Marshall's microeconomic theory (Brue and Grant, 2013: 560).

So, in this framework, are these classifications still useful today? Although the approaches are becoming more and more similar in their substance, there is still separation in the people of the different groups. Therefore, it may be helpful to identify "schools of thought". However, is it possible to draw a sharp frontier between different schools of thought? There is certainly an interaction; it's a whole branch of people who are engaged in a partly competitive and partly cooperative effort to understand the phenomenon as best as they can. There's a great deal of communication and competition. Therefore, it's a much more complicated evolutionary competitive situation than just that competition among schools (Ibáñez, 1999: 188, 252).

In methodological sense, it is true that the level of sophistication of macroeconomics has grown dramatically and the field now attracts more mathematically oriented economists. The striking transformation of macroeconomics during the past decades has revealed the adoption of more scientific methodology. Historically, microeconomics was mainly seen as the domain of scientific methodology in economics. However, during the past decades, macroeconomics has absorbed many of the most sophisticated methods of general equilibrium theory, dynamic programming, optimal control theory, stochastic choice theory, and game theory (Barnett, 2015: 593-94). Macroeconomics is now a field where a large percentage of the mathematical economists and econometricians choose to work in.

On the other had, theoretical advances in macroeconomics made during the past several decades have had a significant influence on the practical analysis of macroeconomic policy. Taking a long-term perspective on policymaking could provide an insight into how theory has shaped policy. Chari and Kehoe (2006) maintain that a variety of policy changes (such as increased interest in the independence of central banks, inflation targeting strategy and other rules in the conduct of monetary policy, governments incentives to shift away from capital income taxation and recognition of the costs of policies that distort labor markets) are the results of major theoretical developments in macroeconomics. Although the fact is that there exists bilateral causality between theory and policy, current developments in macroeconomic policy show that they were strongly influenced by

the developments in macroeconomic theory. Moreover, macroeconomic theory has had a profound and far-reaching effect, especially on the institutions and practices that govern monetary policy. Central banks, which have begun to concentrate on price stability and inflation control as their main objectives, have emphasized the problems of credibility, transparency, and accountability and changed their methods toward the rule-based monetary policymaking. The most straightforward explanation for these changes is that they are due to the identification of the time inconsistency problem by macroeconomic theorists. Chari and Kehoe take these dramatic changes in policy as the rapidly growing "marginal social product of macroeconomic science" (Chari and Kehoe, 2006: 26).

CONCLUSION: WHAT DOES THE FUTURE LOOK LIKE?

Macroeconomics is a twentieth-century development and has gone through an evolutionary process since Keynes' General Theory in 1936. In this study, we adopt a historical presentation of major developments in macroeconomics by focusing on theoretical revolutions and counter-revolutions. We provide a brief overview of the main schools of thought in macroeconomics from Keynesians to the neoclassical synthesists, Monetarists, New Classicals, Real Business Cycle theorists and New Neoclassical Synthesists of the 1990s. A summary of the impact of 2008 financial crisis on macroeconomics is also presented and recent developments are addressed in order to highlight the current state of macroeconomics.

From the discussions taking place in recent years, we just made some inferences on the basis of macroeconomics' current state. What about the future? Actually, the discussions held in this study are surely not exhaustive but they try to provide insight into the way macroeconomics has evolved. Compared to several disciplines such as physics and chemistry, macroeconomics is still a very young science. Its origin traced back to the concept of aggregate demand when Keynes wrote The General Theory in 1936. Thus, it can be said that, as a very young science, it has achieved only limited coverage of the broad range of economic phenomena. Moreover, predictive failures and most economists' inability to see the coming crises have been taken as an obvious fact that amply demonstrate the profession's immaturity (Koo, 2016: 44).

Undoubtedly, it is difficult to predict with certainty the future developments in economics and the economy. Uncertainties and changing economic circumstances make it hard to foresee the course of subsequent events and developments both in economics and in the economy. But even so, the future direction of macroeconomics is bright for prospective developments. Controversies and comparative interplay of ideas have been, and will continue to be, a driving force for the accumulation of new knowledge and progress in economics. Advances in science are achieved by creating new knowledge, which in turn entails pushing research into new and hence necessarily controversial territory. In this respect, the coexistence of alternative views is a sign of strength rather than weakness with regard to contemporary macroeconomic thought because it allows for mutual gains from intellectual trade and promotes a better understanding. Consensus on macroeconomic issues, on the other hand, is not unattainable. Economists can reach considerable agreement

on a range of issues, but consensus for the whole research area inevitably leads to stagnation (Snowdon and Vane, 2005: 5-6).

On the other hand, we must be aware of the fact that the dominance of one view today does not necessarily mean that the other views are permanently on the wane. During the past decades, some mainstream economists have had a tendency to adopt a "short-run Keynesian, long-run Neoclassical" approach, drawing from two traditions in an effort to create a more unified and complete macroeconomic theory. Furthermore, several groups of economists who are dissatisfied with the current orthodoxy are very active today and well may dominate macroeconomics in the future. These include the Neo-Austrians, Post-Keynesians, supply-side economists, institutionalists and socialists groups. We simply cannot predict which, if any, of these groups will result in scholarship of sufficient importance to dominate the next chapter of the history of the macroeconomic thought (Brue and Grant, 2013: 563).

To sum up, macroeconomics is about the real world and there are undoubtedly conflicts of opinion and even theory between different intellectual traditions in macroeconomics. But there are also significant areas of agreement that different groups continually evolve new areas of consensus through discussion and research. All of these enable the development of a growing body of macroeconomic literature which has now reached a level of rigor and sophistication comparable to that which characterizes macroeconomics of the early 20th century. So our historical experience demonstrates clearly that new developments in economic science will occur. Thus, macroeconomics will certainly continue to change and progress by a process of evolution just as much as it has done in the past. Competition among contending approaches will almost inevitably be part of the process through which such progress can occur.

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