FOLHA DE ROSTO

**The Establishment of Robert E. Lucas Jr.’s Macroeconomics of Equilibrium in the 1970’s**

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**RESUMO**

Este artigo apresenta uma narrativa sobre a evolução da macroeconomia nos anos 1970 através da análise do trabalho de Robert E. Lucas Jr.. A abordagem macroeconômica de equilíbrio proposta por Lucas, caracterizada por um modelo de equilíbrio geral com expectativas racionais, lançou uma nova agenda de pesquisa na área, que ganhou seguidores e críticos, especialmente no que se refere ao uso da hipótese das expectativas racionais. O lançamento dessa nova agenda de pesquisa implicou um ataque ao paradigma keynesiano vigente e teve consequências políticas e teóricas que duram até os dias de hoje. Sendo assim, eu pretendo reconstruir a trajetória do trabalho de Lucas nos anos 1970 através da análise de sua produção teórica, de suas relações pessoais e profissionais, dos diferentes usos e justificativas dadas à hipótese das expectativas racionais e das implicações de sua abordagem de equilíbrio para a condução de política econômica. O trabalho de Lucas durante a década de 1970 apresenta diferentes dimensões a serem analisadas. Nos primeiros anos, a tarefa principal de Lucas foi convencer seus pares da relevância da hipótese das expectativas racionais para a construção, estimação e testes de modelos de equilíbrio. Os anos seguintes testemunharam uma importante mudança na atitude de Lucas. Ele abandonou sua posição de crítico interno do paradigma keynesiano para se tornar um crítico externo, criando sua própria agenda de pesquisa e um novo paradigma na macroeconomia. Nesse processo, Lucas teve que escrever a sua própria história da macroeconomia e se colocar na tradição do ciclo de negócios.

**ABSTRACT**

This paper builds a narrative on the evolution of macroeconomics in the 1970’s through the work of Robert E. Lucas Jr.. The macroeconomics of equilibrium approach proposed by Lucas, characterized by a general equilibrium with rational expectations model, launched a new research agenda in the field, which gained adherents and critics, especially regarding the use of rational expectations hypothesis. The launch of this new research agenda implied an attack on the effective Keynesian paradigm, and had theoretical and economic policy consequences that last until today. Therefore, I intend to reconstruct the trajectory of Lucas’s work in the 1970’s by analyzing his theoretical work, his personal and professional relationships, his different uses and justifications to the rational expectations hypothesis and the implication of his equilibrium approach to economic policy. Lucas’s work during that decade presents different dimensions to be analyzed. In the first years, Lucas’s main task was to convince his pairs of the relevance of the rational expectations hypothesis in order to build, to estimate and to test equilibrium models. The following years witnessed an important change in Lucas’s attitude. He left his position as a critic from within the Keynesian paradigm to become an outsider creating its own research agenda and a new paradigm in macroeconomics. In this process, Lucas had to write his own version of the history of macroeconomics and put himself in the business cycles tradition.

**Palavras-chave**: Macroeconomia, Equilíbrio, Robert Lucas, novos clássicos, keynesianismo.

**Key words**: Macroeconomics, Equilibrium, Robert Lucas, new classicals, Keynesianism.

**Classificação JEL**: B22

**The Establishment of Robert E. Lucas Jr.’s Macroeconomics of Equilibrium in the 1970’s**

**1. Introduction**

This paper builds a narrative on the establishment of Robert Lucas’s macroeconomics of equilibrium in the 1970’s, focusing on his contentions against Keynesian macroeconomics. By establishment I mean the transformation of an incipient research agenda into an acknowledged and fruitful one. By contentions I mean the presentation of challenging papers during the decade in which Lucas criticized current mainstream Keynesian macroeconomics – theoretically and econometrically - and its policy implications. Macroeconomics of equilibrium, for its turn, is just a different name for the more famous new classical macroeconomics, but suits better to describe Lucas’s research agenda in that period. Needless to say that Lucas was not alone in the endeavor of establishing macroeconomics of equilibrium in the 1970’s, being accompanied by other economists such as Thomas Sargent, Neil Wallace, Edward Prescott and Robert Barro. This paper will focus, though, specifically on Lucas’s efforts to establish his research agenda in the economics profession. I will argue that Lucas’s contentions against mainstream Keynesian macroeconomics were based on a new modeling technique for equilibrium macroeconomics that contained a liberal ideology and had implications to econometric tests and estimations as well as to economic policy. I will also show what the mainstream Keynesian macroeconomics that Lucas criticized consisted of and what were its reactions to his criticism at the time.

In the beginning of the 1970’s, Lucas’s main concern was to explain and to convince his peers of the relevance of the rational expectations hypothesis in order to build, to estimate and to test equilibrium models. This task was notably performed by Lucas with the presentation of his “Econometric Testing of the Natural Rate Hypothesis” (Lucas, 1972b) at the Federal Reserve Board conference “The Econometrics of Price Determination”, in Washington, D.C., in October of 1970. On the one hand, Lucas criticized the standard tests on the natural rate of unemployment hypothesis that relied on adaptive expectations. On the other hand, he showed how to correctly test the same natural rate hypothesis in an equilibrium model with rational expectations.

Few years later, in April of 1973, Lucas presented a more substantial and general criticism to the econometric models that intended to evaluate the impact of alternative economic policies. The paper “Econometric Policy Evaluation: a Critique” (Lucas, 1976a) was presented at the first Carnegie-Rochester Conference Series on Public Policy. There we can find a more elaborated version of the same theoretical criticism made in his previous paper: standard tests ignore the shift in the parameters of a model under different policies. The difference was that in the new paper Lucas is more emphatic about policy rules being the only scientific way to conduct economic policy, noting that it would also be the democratic way of doing it and, thus, exposing the intrinsic relationship between his theory and his political ideology.

The following years witnessed an important change in Lucas’s attitude. He became not only a severe critic of mainstream macroeconomics but also, and even more, a preacher of his macroeconomics of equilibrium research agenda. This change was the result of: i) the maturity of his own theoretical work on equilibrium business cycles, with the publication of “Equilibrium Model of the Business Cycle” (Lucas, 1975); ii) the development of the theoretical work of his colleagues – Thomas Sargent, Neil Wallace and Edward Prescott, among others -; iii) his move to the University of Chicago; iv) the stagflation of the American economy and v) the disappointment of American citizens with the government – not only with the economy, but also with the Vietnam War and the Watergate scandal.

In November of 1976, Lucas presented his paper “Understanding Business Cycles” (Lucas, 1977) at the Carnegie Rochester Conference Series on Public Policy. There we can find the same econometric criticism to what Lucas effectively started to call as Keynesian macroeconomics. But in this new paper the criticism was put in historical perspective, as an episode on the evolution of macroeconomics, backed up by the recent episode of stagflation in American economy. His equilibrium business cycle theory was proclaimed to be the substitute of the faulty Keynesian macroeconomics. Lucas (1977) is explicit about the proper method of building equilibrium business cycles models and about the political consequence of non-intervention of his theory.

Two years later, in June of 1978, Lucas’s historical interpretation of the evolution of macroeconomics gained a provocative format in his paper with Sargent “After Keynesian Macroeconomics” (Lucas and Sargent, 1978a). The paper was presented in Edgartown, Massachusetts, in the conference sponsored by The Federal Reserve Bank of Boston “After the Phillips Curve: Persistence of High Inflation and High Unemployment”; that is to say, in the adversary’s field. The paper is more explicit than “Understanding Business Cycles” (Lucas, 1977) in showing the irremediable problems of Keynesian macroeconomics and less explicit about the process of building a business cycle model. It also relies more on econometric arguments, due to Sargent’s contribution. However, what is most striking in the paper is its triumphant tone.

According to Lucas (2004: 295), the actual triumph of new classical macroeconomics over Keynesian macroeconomics was only achieved few months later, in October of 1978, at the “Rational Expectations and Economic Policy” conference, held at the Bald Peak Colony Club, at New Hampshire. There he realized the influence his work had on both Keynesians and new classical economists and how most of them agreed with his ideas. Lucas presented his paper “Rules, Discretion and the Role of the Economic Advisor” (Lucas, 1980a), where he defended, once again, the adoption of rules rather than discretion in the conducting of monetary policy, based on his theoretical framework of macroeconomics of equilibrium. Lucas’s research agenda had gained important followers, and was, indeed, established in mainstream macroeconomics.

**2. Rational Expectations and the Econometric Testing of the Natural Rate of Unemployment**

During the summer of 1970, Lucas prepared a paper in which he exposed the implications of the rational expectations to the modeling and testing of the natural rate of unemployment hypothesis. The paper was written for a conference that Lucas was invited to participate as an advocate of the natural rate hypothesis. It was the first time Lucas wrote a paper especially for a conference and it was his first deliberate effort in establishing his macroeconomics of equilibrium in the economics profession. The paper was called “Econometric Testing of the Natural Rate Hypothesis” (Lucas, 1972b) and was presented at the Federal Reserve Board conference “The Econometrics of Price Determination”, in Washington, D.C., in October of the same year. Some years later, Lucas (1984) said he knew that James Tobin would be present at the conference and, so, he imposed himself the task of explaining to him the implications of the rational expectations to the modeling and testing of the natural rate hypothesis in a way that he could comprehend. He also wanted to explain to Tobin, as a consequence, why standard tests of the natural rate of unemployment that did not adopt rational expectations were misleading. Lucas’s choice of Tobin as his interlocutor was not random. Despite being responsible for summarizing the papers of the conference, Tobin was considered a leading macroeconomist and an “honest” person by Lucas (1984); someone that he could actually discuss his ideas with. In another occasion, Lucas (2004: 290) said that the paper was written with the intention of reaching a broad audience, which was not necessarily familiar with his theoretical and more complicated paper “Expectations and the Neutrality of Money” (Lucas, 1972a)..

“Expectations and the Neutrality of Money” (Lucas, 1972a) is the first paper in which Lucas actually builds a general equilibrium model with rational expectations. It can be considered the culmination of his research agendas in the 1960’s and the starting point of his research agenda in the 1970’s. The paper was first submitted to the *American Economic Review* on January 30th, 1970, but it was rejected. As shown by Gans and Shepherd (1994: 172), the editor of the journal – George H. Borts - found the paper too much formal, objecting to its technical style. An anonymous referee had the same opinion. The paper was then submitted to the *Journal of Economic Theory* few months later, being published only in 1972. So, when Lucas wrote “Econometric Testing of the Natural Rate hypothesis” (Lucas, 1972b), during the summer of 1970, he not only already had his equilibrium framework in mind, but he was also aware of the likely repulse it could cause to current mainstream Keynesian macroeconomists and, thus, was concerned with making it as clear as possible to them.

Lucas (1972b) presents the natural rate of unemployment hypothesis in a model in which prices and quantities are market clearing outcomes and prices expectations are rational, in the sense that the expectation of the difference between actual and expected prices equals zero. The model is composed by an aggregate supply equation, an aggregate demand equation, a policy rule equation and a rational expectations’ equation for future prices. The rational expectations’ equation for future prices applied to the aggregate supply equation constitutes the natural rate of unemployment hypothesis itself.

Lucas (1972b: 94) says that, on the other hand, an alternative adaptive expectations equation for future prices applied to the same aggregate supply equation would not constitute the natural rate of unemployment hypothesis, since it would allow the existence of both short and long run Phillips curves. Lucas (1972b: 94) cites the work of Jorgenson (1966) as an example of this alternative kind of modeling, which would lead to the (wrong) “standard” test of the natural rate hypothesis. This kind of (wrong) “standard” test - which imply a test on the magnitude of the parameter of the Phillips curve in a model with adaptive expectations - had been performed by Lucas and Rapping (1969b) inclusively, and also by Cagan (1968) and Gordon (1970). The last two had been endorsed by Tobin (1968) and Solow (1970), respectively, the economists that Lucas elected as references for this kind of macroeconomic framework.

The solution of Lucas’s (1972b) system of four equations – with rational expectations – implies that real output depends on the Phillips curve parameter (the response of real output to the difference between current and expected prices) and on policy parameters. Lucas (1972b: 99) argues, though, that the wrong test of the existence of the natural rate of unemployment would be on the restriction that the sum of the coefficients of current and past aggregate demand - that include the Phillips curve and the policy parameters - is equal to zero, meaning that aggregate demand shifts would not affect real output in the long run.. This kind of test would always reject the natural rate of unemployment hypothesis, since the negative correlation between inflation and unemployment was an empirical fact that could not be denied econometrically.

Lucas (1972b: 99-100) says that the assumption of rational expectations actually implies restrictions “across equations”, between policy parameters and behavioral parameters in the model. The right test on the natural rate of unemployment under rational expectations would be, then, a test on these restrictions.[[1]](#footnote-1) Therefore, the existence (or not) of the natural rate of unemployment could be characterized as “a ‘system priority’, like stability or identifiability”. Proceeding this way, Lucas (1972b) proposes to evaluate economic policy through technical criteria, based on a model that assumes that prices are constantly clearing markets.

Lucas (1972b: 99-100) also claims that what is necessary for a successful test is a period in which the policy rule could be described in a “stable, demonstrable stochastic structure”, so that the parameters of this policy could be estimated in a “reliable” way. The implication of this claim is that any other kind of policy would not be scientifically reliable. Again, Lucas (1972b) is proposing to legitimize a specific economic policy through a scientific argument, based on an equilibrium model that carries a political (liberal) ideology.

In his summary paper of the conference, Tobin (1970: 13) comments on Lucas’s paper saying that it was a rigorous and sophisticated defense of the natural rate of unemployment hypothesis, but criticizes the rational expectations hypothesis by saying that it was a too much strong assumption regarding the capability of agents of receiving and processing information:

The participants [of the economy] not only must receive the correct information about the structure [of the economy] but also must use all of the data correctly in estimating prices and in making quantitative decisions. These participants must be better econometricians than any of us at the Conference.

Lucas immediately responded to this criticism in a letter to Tobin dated from November 2nd, 1970. He argues that, although he assumes in the paper that each agent knows the entire structure of the economic system, this assumption is not crucial to the existence of the natural rate of unemployment. One could still obtain the natural rate even if the agents formed their expectations about the correct distribution of future prices conditioned on only a part of the available information or even on no information on current realizations at all. They just need to know the correct conditional distributions of prices, but that does not mean that they know the structure of the entire system. They could infer the correct conditional distributions from a histogram of past prices, which, for its turn, depend of the entire structure of the economy. In the end of the letter, Lucas says he is attaching a paper that deals with this issue in a more precise and artificial setting. The paper is “Expectations and the Neutrality of Money” (Lucas, 1972a).

Although Tobin criticized the rational expectations hypothesis used in Lucas’s (1972b) paper, one can say that Lucas was successful in presenting his equilibrium model and his econometric testing of the natural rate hypothesis. Tobin had indeed comprehended Lucas’s arguments and, so, his research agenda was starting to be known by the mainstream of the economics profession.

**3. Econometric Policy Evaluation and Democracy**

On April of 1973, two years and a half after the Federal Reserve Board conference in Washington, D.C., Lucas had the opportunity to present again, in another conference, his criticism to standard econometric models. The paper “Econometric Policy Evaluation: a Critique” (Lucas, 1976a) was presented at the first Carnegie-Rochester Conference Series on Public Policy. This time Lucas (1976a) did not restrain his criticism of the effectiveness of economic policy in determining the rate of unemployment - through the natural rate of unemployment example - and extended it to the effects of policies on consumption and investment, too. Lucas (1976a) also sketched his first interpretation of the history of macroeconomics and made even clearer the ideological aspect of his criticism of the econometric models through the argument that a known policy rule would be not only a scientific but also a democratic way to conduct economic policy.

Lucas (1976a: 19) starts the paper sketching his interpretation of the evolution of economics in recent years. He says that economics is experiencing a conflict between economic theory and econometric practice, meaning a conflict between the natural rate of unemployment hypothesis and the econometric forecasting models that imply the existence of a long run tradeoff between inflation and unemployment. He goes on saying that this conflict is irreconcilable and, then, suggests that the econometric models used to evaluate different economic policies - what he calls “theory of economic policy” - are wrong and in need of major revision. The argument for that is the same presented in Lucas (1972b), namely, about the shift in the parameters of models used to estimate and evaluate alternative policies. When evaluating different policies, the theory of economic policy ignores that the parameters of the model shift with each different policy. Therefore, long run estimations of these models become invalid, comparisons between different policies are meaningless and, thus, the theory of economic policy cannot be used at all.

Just after the conference, Robert Gordon wrote a comment on Lucas’s (1976a) paper. Gordon (1976) argues that Lucas (1976a) is right about the weakness of econometric simulations for alternative policies based on models that simply extrapolates fixed estimated parameters, but he is too pessimistic about the possibilities of remedying it. Gordon (1976) argues that, in some cases, it is possible to estimate or to deduce the shift in the parameters of the models and, thus, the effect of different policies could be correctly evaluated. That is to say, Gordon (1976) defends the econometric tradition of the theory of economic policy but admits that it needs some kind of revision.

Lucas (1976b) wrote a short reply to Gordon’s (1976) comment that was also published in the same volume of the Carnegie-Rochester Conference Series on Public Policy. Lucas (1976b) mentions their agreement on the criticism to the econometric simulations based on models that extrapolates fixed estimated parameters, but is emphatic about their disagreement on the proper research strategy that follows from this criticism. Lucas (1976b) claims that it is impossible to remedy the problems with these models through minor modifications in it.

Both Gordon’s (1976) comment and Lucas’s (1976b) reply were written after the conference, between June of 1973 and January of 1974, a period in which they exchanged letters discussing Lucas’s (1976a) paper. Lucas sent a revised version of his paper to Gordon on June 1, 1973, and Gordon sent Lucas a copy of his comments by the end of the same year. Lucas replied to Gordon’s comments on January 3, 1974:

As I’m sure you can guess, I do think your summary of my conclusions is misleading. Nor do I want you to have credit for showing that “in all the examples discussed by Lucas…it is possible either to estimate or deduce the shift in parameters”, since most of my paper was devotes to showing exactly that.

Gordon wrote back to Lucas on January 15, 1974, attaching a revised version of his comments. He stood by his position that Lucas was too pessimistic about the possibilities of remedying the problems of the theory of economic policy, but eventually gave credit to Lucas on the possibility of either to estimate or to deduce the shift in parameters. So, at the same time that Lucas wanted to criticize the theory of economic policy he wanted to have credit for suggesting a possible revision of it.

Lucas’s (1976a) criticism of econometric policy evaluation is also revealing of his point of view regarding the relationship between policymakers, society and democracy. In the last paragraph of the paper, Lucas (1976a: 42) says:

In short, it appears that policy makers, if they wish to forecast the response of citizens, must take the latter into their confidence. This conclusion, if ill-suited to current economic practice, seems to accord well with a preference for democratic decision making.

Lucas (1976a: 42) is defending that economic policy should be known and clear to all the participants of the economy. His opinion is backed up by his idea of democracy. Lucas (1976a: 42) is blaming current economic practice for not being democratic, since it does not take into account citizens’ preferences. That is an idea that fits well with his econometric criticism of the theory of economic policy. A policy formulated by a democratic elected government that is not shared with the population before its implementation is not democratic. On the other hand, the same policy, if announced by the same democratic elected government with the proper antecedence for citizens to react to it, is democratic. The last sentences of Lucas’s (1976b: 62) reply corroborates this point of view:

For my part, I have always been uneasy about the relationship between economic experts and “policymakers” which Gordon values so highly. At the risk of being unduly “optimistic”, I would hope for the eventual return to a view of economic decision making in which our fellow citizens also take an informed part.

The point is not to judge Lucas’s idea of democracy, but to show that his criticism of the theory of economic policy has not only a theoretical dimension but also a political dimension. More than this, Lucas was emphatic in showing this political dimension of his criticism and in using it as an argument.[[2]](#footnote-2)

**4. The years 1974 and 1975: Chicago, stagflation and change in attitude**

The years of 1974 and 1975 were crucial to Lucas’s professional career and to American politics and economy. Lucas became a true preacher of his macroeconomics of equilibrium research agenda and an even more critic of the economic policy perused by the government in the previous years. His change in attitude was the result of the development of his theoretical work, of the development of the theoretical work of his colleagues, of the stagflation of the American economy, of the disappointment of American citizens with the government – not only with the economy, but also with the Vietnam War and the Watergate scandal – and, of course, of his move to the University of Chicago.

In 1974, Lucas left Carnegie Tech and went to the University of Chicago to spend a year as visiting professor. In the following year, he was hired by the same University of Chicago as full professor. Lucas’s theoretical paper on equilibrium business cycles “Equilibrium Model of the Business Cycle” (Lucas, 1975) was published in the end of the same year, in the December of 1975 issue of the *Journal of Political Economy*. In the paper, Lucas builds a general equilibrium model in which prices and quantities are always market-clearing; expectations are rational and agents have imperfect information about the current state of the economy. In the model, movements about trend of real output are triggered by unsystematic monetary and fiscal policies. As noted by De Vroey (2010b: 7) the paper is an extension of “Expectations and the Neutrality of Money” (1972) into a more explicit model of the business cycle, and was responsible for putting Lucas’s research agenda of macroeconomics of equilibrium on track. But Lucas was not the only one publishing papers with the equilibrium approach to business cycles. Thomas Sargent, Neil Wallace, Edward Prescott and Robert Barro were also pursuing a research agenda in which monetary policy was analyzed in an equilibrium model with rational expectations.

Regarding the U. S. economy, the year of 1974 witnessed a major rise in the rate of inflation. If compared to the previous year, it doubled to 12%. In 1975, it stayed around 10%, being accompanied by a rate of unemployment of 8% - the highest number in the series that started in 1948. In August 9th, 1974, President Nixon resigned due to the Watergate scandal, just to make things worse for the image of the federal government, which was already suffering with protests against the war on Vietnam since the end of the 1960’s.

It was in this context that Lucas was reorganizing his ideas and putting his research in an intelligible perspective. That is what can be grasped from his interview to McCallum (1999: 283):

[Lucas]: At Chicago, I began teaching graduate macroeconomics regularly for the first time in my career. (Alan Meltzer had done this at Carnegie.) This was a stimulus for me. My papers “Understanding Business Cycles” [Lucas, 1977] and “Problems and Methods in Business Cycles Theory” [Lucas, 1980] came out of the experience of organizing my thoughts on the entire field, the way teaching a graduate course in a top department forces one to do.

**5. Understanding Business Cycles and Interpreting the History of Macroeconomics**

“Understanding Business Cycles” (Lucas, 1977) was originally written for the Kiel Conference on Growth without Inflation, held in June of 1976, and revised in August of the same year to be presented at the Carnegie Rochester Conference Series on Public Policy of November of 1976. Lucas’s (1977) aim is to explain in words how the business cycles work, according to his equilibrium approach. But before start describing the specificities of his equilibrium business cycle model, Lucas (1977) makes a historical reconstruction of the evolution of macroeconomics to put the business cycle theory in historical perspective.

In short, Lucas’s (1977) history of the business cycles theory is the following. Before Keynes’s *General Theory* and the Keynesian revolution, in the 1930’s, there was a branch of economics called business cycles theory that had Hayek as a leading character. This branch of economics was concerned with the question of why economies undergo repeated fluctuations about trend in its aggregate variables. Then came the Keynesian revolution and this question was suppressed by the simpler question of how to determine the level of output in point in time. The following was the development of modeling techniques in order to deal with this new question. According to Lucas (1977: 11), the most important advance of Keynesian economics was the development of “fully articulated artificial economy which behaves through time so as to imitate closely the time series behavior of actual economics”. This modeling technique and its empirical accuracy made the old business cycles theory completely outdated and, more than this, made it lose its status of theory. But if on the one hand Keynesian economics was successful in imitating the actual behavior of an economy, on the other hand it could not make good conditional forecasts and answer fundamental questions such as how would the economy behave under different policies. There the same Lucas’s criticism to the standard econometric models of that period applies. To answer this question a model needs invariance of its basic parameters. An equilibrium model in which, by definition, tastes and technology are stable and agents choose to respond to different policies would then be the right one.

Lucas (1977) tells his story of the evolution of macroeconomics as if it was the history of the best modeling technique available to answer a specific question about economic aggregates. His criticism of econometric policy evaluation is used to technically dismiss Keynesian models as the best model to answer the question of what is the best policy. Together with his dismissal of Keynesian economics comes a change in the relevant question. Since the activist economic policy of Keynesian models cannot take the economy to a desired level of output and unemployment, one has to go back to the old business cycle theory question of why the economy fluctuates in the first place, and what to do about it. Lucas (1977) presents his equilibrium model of the business cycles exactly to answer this question. Behind this rationale is the idea that the market economy works relatively well and the best the government can do is not to interfere. It is the same argument presented in Lucas (1976a). Lucas (1977: 13) uses as argument the stagflation of the 1970’s in the U.S. as an example of the failure of the intervening Keynesian economics.

Lucas’s (1977) equilibrium model of the business cycles presents a representative agent with rational expectations that has to decide how much to work and how much to produce, given his tastes and the available technology of production. The representative agent responds to movements in relative prices. He is situated in an economy with many other agents and the information one gets from the others is transmitted only through prices. Monetary shocks cause movements in the price level and the agent has to deal with the question of whether the change in prices he perceives is absolute or relative. His response to that causes the business cycles.

Lucas (1977: 25) states that this should be the proper way to model the economy and that he hoped that these models would be capable of perfectly emulating the real economy in five years ahead. The implication of his equilibrium model of the business cycles for policy is the same proposed by Henry Simons and Milton Friedman decades before: no countercyclical policies at all. The economy should rely on stable monetary rules and Economics should serve the purpose of scientifically explaining why these policy-rules are the right ones. But Lucas does not make explicit that behind this scientific explanation is an ideology that a market economy works well. Lucas (1977: 26) says that the promise of Keynesian economics was exactly to scientifically explain why policies are right, but it the end this scientific explanation was empty.

In the last paragraph, Lucas (1977: 26) puts the question of whether the role of the government in a market economy that is subject to “violent fluctuations” should be to reduce its disruptive part or try to offset private sector instability. He answers his own question saying that both positions are viable, but in order to have the right answer one should know what exactly business cycles are and how they occur.

Therefore, one can see how the events of 1974 and 1975 were decisive in Lucas’s research and in his change of attitude. He became in charge of teaching macroeconomics in one of the top departments of economics in the U.S.. He had to fit his macroeconomics of equilibrium in the history of macroeconomics and he did it by putting Hayek’s business cycle theory back in the agenda of mainstream macroeconomics. It happened to be the perfect timing for him to explicitly identify his macroeconomics of equilibrium research agenda with business cycle theory, since stagflation was there to empirically corroborate his criticism of Keynesian economics. The emphasis of his criticism was not on rational expectations, anymore. This hypothesis had already been accepted by his peers around 1976. He had a clear project; to dismiss Keynesian economics and to put business cycle theory, or, in other words, macroeconomics of equilibrium, in the frontier of the science. This project had a political dimension - backed up by his understanding of what is a democratic society - which was the dismissal of active economic policy.

A symptom of the growing relevance of the macroeconomics of equilibrium approach at that time, and especially of its non-activist policy recommendation, can be detected in the publication of a report by *Business Week,* on November 8, 1976, entitled “How expectations defeat economic policy”. In the report, Robert Lucas, Neil Wallace and Thomas Sargent were the main characters. It was about the attack of the “rational expectations’ economists” on the possibility of the government to boost employment through monetary and fiscal policies. Lucas kept this report in his files and wrote to the author of the report expressing his satisfaction with it:

I want to tell you how pleased I was at your story on the work Sargent, Wallace and I are doing. After our long and (I thought) confusing conversations, I was dubious that anything coherent would emerge. The article was, thus a pleasant surprise: a clean, nontechnical presentation of some material which a good part of the profession is still struggling with. I’ve tried this (not very successfully) myself, so I know how difficult it is to do well.

Another symptom of the growing relevance of macroeconomics of equilibrium was the letter written by Milton Friedman a couple of months before the publication of the report, on August 4th, 1976. The letter was addressed to Neil Wallace, but copies were also sent to Lucas and to Sargent. It was a blessing from Friedman on the work they were developing:

After reading your excellent piece on rational expectations distributed by the Minneapolis Federal Reserve Bank, it occurs to me that I should long before this have called your attention to the appropriate quotation from Adam Smith which contains the essence of the rational expectations theory of economic policy. The quotation is from the Theory of Moral Sentiments […]: “The man of system…seems to imagine that he can arrange the different members of a great society with as much ease as the hand arranges the different pieces upon a chess-board; he does not consider that the pieces upon the chess-board have no other principle of motion besides that which the hand impresses to them; but that, in the great chess-board of human society, every single piece has a principle of motion of its own, altogether different from that which the legislature might choose to impress upon it. If those two principles coincide and act in the same direction, the game of human society will go on easily and harmoniously, and is very likely to be happy and successful. If they are opposite or different, the game will go on miserably, and the society must be at all times in the highest degree of disorder.”

**6. After Keynesian Macroeconomics**

Less than two years after the presentation of “Understanding Business Cycles” (Lucas, 1977), and after having their work praised by *Newsweek* and by Milton Friedman, Lucas and Sargent presented their polemical paper “After Keynesian Macroeconomics” (Lucas and Sargent, 1978a). The paper was presented in June of 1978, in Edgartown, Massachusetts, in a conference sponsored by The Federal Reserve Bank of Boston called “After the Phillips Curve: Persistence of High Inflation and High Unemployment”. The conference had the presence of Benjamin Friedman, Lawrence R. Klein, Franco Modigliani and Robert Solow, among other Keynesian economists. That is to say that Lucas and Sargent were playing in the adversary’s field. But it did not prevent them from attacking theirs opponents. Needless to say that they had the expected hard response from them.[[3]](#footnote-3)

“After Keynesian Macroeconomics” (Lucas and Sargent, 1978a) is a provocative version of “Understanding Business Cycles”, starting from its title. This time Lucas teamed up with Sargent, who contributed mostly with the econometric arguments. The paper is a complete attack on Keynesian macroeconomics using theoretical, econometrical, empirical, methodological and political arguments. It is more explicit than “Understanding Business Cycles” (Lucas, 1977) in showing the irremediable problems of Keynesian macroeconomics and less explicit about the building of a business cycle model. It relies more on econometric arguments, due to Sargent’s contribution. But the most striking feature of the paper is its triumphant tone.

Before starting to tell their story about the evolution of macroeconomics, Lucas and Sargent (1978a) present the paper blaming Keynesian economics for the stagflation of the 1970’s and proposing to reevaluate and to rebuild monetary economics in business cycles terms. Their story goes basically in the same way as told by Lucas (1977).[[4]](#footnote-4) It starts with the Keynesian revolution and the building of macroeconometric models to emulate the real economy and to evaluate alternative policies. Then they point out the problems of these models using the same argument about the shift in parameters to different policies. They add a related aspect of this criticism by blaming Keynesian economics for arbitrarily identifying the structural parameters of its macroeconometric models. According to Lucas and Sargent (1978a), the question if a model is structural or not is an empirical question, not a theoretical one, and the events of the seventies had showed that the Keynesian models were not structural, and, thus, could not be used for guiding policy. It was a scientific failure which opened the door for the Equilibrium Business Cycles Theory, which could be used, indeed, to identify structural econometric models and, thus, correctly evaluate alternative policies. Equilibrium Business Cycle theory, for its turn, was based on two assumptions: that agents optimize and that markets clear. So, Lucas and Sargent (1978a) describe the Equilibrium Business Cycles model emphasizing its compatibility with new econometric techniques - that were being developed by people like McCallum, Barro, Sargent and Sims – and its non-activist policy implication. To conclude, Lucas and Sargent (1978: 70) present, again, their research agenda as a solution to the failed Keynesian agenda, with the same promise of providing a “scientifically based means of assessing, quantitatively, the likely facts of alternative economic policies”.

However, this presentation is more than just an alternative to Keynesian economics. It is intended to be the death certificate of Keynesian economics. And Lucas and Sargent (1978a) are emphatic about it by using expressions such as “spectacular recent failure”, “failure on a grand scale” and “fatal” to refer to it. The paper is a rhetorical piece and it reveals the intention of the authors in causing a big impact. That was more Lucas’s idea, as we can see from his letter to Sargent, right after the conference, on June 19, 1978:

The conference was a real depressant. It will take a while for me to figure out the sense in which such occasions are “good for us”. […] As to a revision, my views were influenced by the fact that I was responsible for the more rhetorical parts of the paper, but that you were stuck with the task of defending them. […] On the other hand, having reviewed the paper again, I don’t think we overstated anything, or falsified anything. By the standard Solow set on both days, I think we were rather subdued. So I am willing to let things stand as they are.

In fact, the tone used by Lucas and Sargent (1978a) was one of the biggest complaints of the participants of the conference. Benjamin Friedman (1978: 80), for example, was discrete enough to put it in the last line of his comment: “…a lower rhetorical profile would better advance the cause of scientific interchange”. Lucas and Sargent (1978b: 81) responded to this criticism by saying:

The “rhetorical profile” adopted in our paper was not chosen independently of the arguments developed using more precise and technical language in the text, and more fully developed by each of us in earlier writings. […] If the implications we have drawn are close to the mark, how can “the cause of scientific interchange” be best served by summarizing them in a way which averages what we believe to be true with what others find pleasant or familiar?

Solow (1978: 204) also said some words about the tone of the paper: “They describe what happened in the 1970’s in a very strong way with a polemical vocabulary reminiscent of Spiro Agnew”. Herschel Grossman, in a letter to Lucas dated from July 12, 1978, few weeks after the conference, criticized the tone of the paper, too: “My main impression of these pages is that the polemical tone does not do justice to the subtlety involved in your work”. Lucas answered in a letter dated from July 21, 1978:

I’m sorry you disapproved our tone. We were reaching for “subtle polemics”, perhaps unsuccessfully. In any case, it is not clear what value subtlety will bring in what historians will someday see as the Arthur Laffer era of monetary economics. Tom and I were trying to jog people into an awareness that the cozy intellectual world of the neoclassical synthesis has gone the way of Queen Victoria’s.

That is to show how deliberately provocative was the paper and how Lucas, especially, was responsible for that in his effort to establish the research agenda of macroeconomics of equilibrium. The reward to his effort was about to come.

**7. Victory**

Only four months after the agitated conference in Massachusetts, Lucas could finally celebrate his victory in establishing his macroeconomics of equilibrium in the mainstream of the economics profession. According to Lucas (2004: 295), new classical macroeconomics finally triumphed over Keynesian macroeconomics at the “Rational Expectations and Economic Policy” conference, held at the Bald Peak Colony Club, at New Hampshire, in October of 1978 – also in an agitated atmosphere. There, Lucas presented his paper “Rules, Discretion and the Role of the Economic Advisor” (Lucas, 1980), where he defended, once again, the adoption of policy rules instead of any kind of discretionary monetary policy. Lucas (2004: 295) admitted that it was only there that he realized the influence his work had on both Keynesians and new classical economists and how most of them agreed with his ideas. Lucas’s (1980a) prescription of policy rules was, of course, based on his theoretical framework of macroeconomics of equilibrium and one can say that his research agenda had gained important followers and was, indeed, established in mainstream macroeconomics.

**8. Conclusion**

During the 1970’s, Lucas established his research agenda of macroeconomics of equilibrium in the mainstream of the economics profession. Lucas’s effort during the decade was characterized by different moments and different aspects. In the beginning of the 1970’s, Lucas’s main concern was to explain and to convince his pairs of the relevance of the rational expectations hypothesis in order to build, to estimate and to test equilibrium models. In the following years, Lucas started to sketch his interpretation of the history of macroeconomics and revealed the political aspect of his criticism, as well as his idea of democracy. The years of 1974 and 1975 witnessed an important change in Lucas’s attitude. He became not only a severe critic of Keynesian macroeconomics but also, and even more, a preacher of his macroeconomics of equilibrium research agenda. His criticism was put in historical perspective, as an episode on the evolution of macroeconomics, backed up by the recent episode of stagflation in American economy. His equilibrium business cycle theory was proclaimed to be the substitute of the faulty Keynesian macroeconomics. Two years later, in June of 1978, Lucas’s historical interpretation of the evolution of macroeconomics gained a provocative format in his paper with Sargent “After Keynesian Macroeconomics” (Lucas and Sargent, 1978a). The triumph of his research agenda on macroeconomics of equilibrium over Keynesian macroeconomics would finally come few months later, in October of 1978, at the “Rational Expectations and Economic Policy” conference, held at the Bald Peak Colony Club, at New Hampshire.

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1. See Hoover (1988: 177) for a more detailed description of this test. [↑](#footnote-ref-1)
2. As pointed by De Vroey (2010a), the same Lucas’s opinion on the role of the policymaker would be exposed again, few years later, in his “Rules, Discretion and the Role of the Economic Advisor” (Lucas, 1980a: 210). [↑](#footnote-ref-2)
3. Despite this animosity, it is interesting to point out that Lucas had been invited by the head of the Department of Economics of MIT, E. Cary Brown, on January 29, 1976 to spend an academic year as a Visiting Professor there. Lucas promptly declined the invitation, and the Dean of the Social Sciences Division of the University of Chicago at the time, William Kruskal, wrote to him saying how pleased he was with his decision [↑](#footnote-ref-3)
4. Lucas’s story of the evolution of macroeconomics would be refined once again in his paper “Methods and Problems in Business Cycle Theory” (Lucas, 1980b). [↑](#footnote-ref-4)