

METHODOLOGICAL INDIVIDUALISM IN LUCAS: A CRITICAL REALIST PERSPECTIVE*

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Abstract:

The Lucas Critique, as a methodological critique of the so called “theory of economic policy”, seems to be directed to one of the fundamental weaknesses of the conception of science and explanation underlying policy-making practices. This conception of science and explanation can be called as “empirical realism”, according to which there can be stable relations between social aggregates. According to Lucas, this is impossible due to “adaptive” (or rational) character of individual decisions (or behaviors). While Lucas’ rejection of the existence of stable relations in the social realm seems to be a critique of the “closed world” reasoning, his conception of individual units makes his attempt completely futile in terms of “open system” theorizing.

Özet:

Lucas’ta Metodolojik Bireycilik: Eleştirel Gerçekçi Bir Perspektif

Lucas Kitiği özünde iktisat politikasına temel oluşturan teorik çerçevenin metodolojik bir eleştirisidir. Bu kritik politika yapımı pratiğinin dayandığı açıklama ve bilim kavramsallaştırmasının temel bir zayıflığını hedef almaktadır. Bu kavramsallaştırma “ampirik realizm” olarak tanımlanabilir. Ampirik realist bir çerçeveden bakıldığında, sosyal büyüklükler arasında kalıcı bir ilişki mümkündür. Ancak Lucas’a göre, bireylerin karar (ya da davranışlarının) “adaptif” (veya rasyonel)

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Anahtar Sözcükler: Metodolojik bireycilik, Lucas kitiği, açık sistem, kapalı sistem.

karakterinden dolayı bu mümkün değildir. Lucas'ın bu karşı çıkışı "kapalı sistem" düşüncesinin bir eleştirisi gibi görünürken, diğer yandan kendisinin birey kavramsallaştırması bu çabasını "açık sistem" modellemesi açısından bütünüyle anlamsız kılmaktadır.

"There are macroeconomic questions, but only microeconomic answers". (Garrison, 2000: 1, quoted by Horwitz)

INTRODUCTION

Are statistical regularities in time series or casual relations between aggregate phenomena enough to construct a social theory? After the "*Phillips Curve*" seemed to have lost its explanatory power with the events of the 70's, this question became more crucial than ever for economists. Although not specific to this particular relationship, the "*Lucas Critique*" can be seen as an attempt to point out to the underlying methodological failure behind the Phillips Curve-type relationships and as an attempt to develop a microfoundations program to fill such a methodological gap in economic theorizing.

Simply stated, the main thesis of the present paper is to point out that although the widely influential the Lucas Critique of, as it is termed by him, "*the theory of economic policy*" or "*econometric tradition*" seems to identify the symptoms of a real methodological problem in economics arising from its strict empirical emphasis; from *critical realist* perspective, its restricted *methodological individualist* position fails to diagnose this problem adequately.

To put it in another way, although Lucas gives a methodological intuition concerning the human agency factor which is responsible for the open characteristics of economic system, his conception of individual and individual behaviour are so restricted that it makes his methodological individualist attempt completely futile in terms of open system theorizing.

I. WHAT DOES LUCAS CRITICIZE?

Lucas (1991: 5) in his critique starts to review the framework that he regards as theoretically inadequate, that is, the so called "theory of economic policy" or "econometric tradition"¹ upon which almost all policy-making practices are founded. According to him, this theory has to presuppose stable parameter relations, but assuming such stability in structural relationships connecting economic events is unacceptable.

Lucas' main argument is this: due to the "adaptive" (1987: 217) character of individual decisions underlying structural behavioural parameters of the economy, any change in one of the components of the economic structure makes its future position *totally unpredictable*. Because the way economic structure evolves itself is one of the elements of individual decision rules. The Lucas Critique, specifically, focuses on policy changes as the source of structural changes, and in his setting, individual decisions (or reactions) play an important role as a transmission mechanism between these policy changes and its structural impact on the economic structure making its future position unpredictable. To formulate using Lucas' own exposition:

Let $E \left\{ \sum_t \beta^t R_i(a_t, s_t, z_t) \right\}$ express a discounted pay-off or utility

function which agent i seeks to maximize. It is function of three variables: state of the system (s), policy changes (z) and agents' actions or decisions selected from an opportunity set, $\Omega_i(a_i, s, z)$, which is function of s , z and the actions taken by all the other agents (a_{-i}) (Lucas, 1987: 12).

According to this formulation, policy changes become one of the elements of the pay-off or utility functions of the agents in the economy. Therefore, neglecting this fact is equivalent to assume that "the solution to a maximum problem doesn't vary with changes in the function being maximized" (Lucas, 1987:11).

If the structural description of the economic system determining the way the economy evolves is $F(s, e) = H(z, a, s, e)$, the structural effect of the policy changes can be simulated easily. Assume that there is a change in policy, so z will change to z' . Since z' is one of the elements of the pay-off function of agents' in the economy, it is expected new equilibrium decision rules, a' , corresponding to the change in policy. If we use this new pair, (z', a') to describe the new motion of the system, $s_{t+1} = H(z', a', s, e)$, it can be immediately realized that the system structurally changed with the policy change through reactions of the agents to this policy.

To say that the "macroeconomic system interacts in an unforeseen/uncertain way due to individual behaviour" [my emphasis] (Jespersen, 2001:4) is, in fact, equivalent to say that the economic system can never be deterministic and closed. In this sense, as Lawson says, "... the Lucas Critique is easily interpretable ... as an argument that at least one of the identified closure conditions is not satisfied in existing econometric models" (1995: 270).

In fact, Lucas' argument includes a strong methodological intuition. It implies that study of policy-making (and macroeconomic behavior) is the study of individual behavior. To put this intuition in Lynn's words: "For purposes of providing intelligence for policy making, an understanding of human ... behavior encompasses the ability both to explain it and to predict the behavioral consequences of changes in the values of ... variables ... that are created or influenced by government" (1987:195). Let us investigate this methodological position more closely.

II. LUCAS' METHODOLOGICAL POSITION

According to Lucas, econometric models estimate aggregate relationships that are the result of a complex interaction between individual decisions of consumers, producers and policy environment (Hoover, 2001: 182). Therefore, unavoidably, there will be a *theoretical gap* between the formulation of individual behavior and econometric attempts to determine the aggregative behavior of the system as a whole. In Lucas' words "... the aggregate character of macroeconomic problems serves to emphasize the distance between much of economics and the concerns of individual psychology" (Lucas, 1987: 219).

Lucas' (1991: 25) solution to the problem is to derive the parameter vector exhibiting structural relations between economic events (or endogenous and exogenous variables) from decision rules (or demand and supply functions) of agents in the economy, and these decisions are to be always optimal given the situation in which each agent is placed in the sense that they are continuously under review and revision. This methodological position is a methodological individualist one in the sense that it can be interpreted as a view that allows only individual agents to be decision makers in any explanation of aggregate economic regularities and aggregate economic phenomena (Froyen, 1994: 546).

At the beginning, we noted that Lucas' attempt could be seen as a prospective cure for the methodological problem underlying the Phillips Curve-type characterization of the economic system. Before answering the question whether Lucas was successful or not, we had better answer what the real methodological problem was.

Lucas in his critique points out his essays' main thesis as: "... 'the econometric tradition' or more precisely, 'the theory of economic policy' based on this tradition is in need of major revision" (1991: 19). His main focus is the inadequacy of "econometric tradition" as a guide for policy analysis". Actually, this inadequacy cannot be considered separately from the inadequacy of the

underlying conception of science and explanation. As Lawson (1995: 260-1) states, underpinning most problems associated with formulating and/or evaluating economic theories and policy alternatives is an implicit commitment to the conception of science and explanation.

Encouragement for this type of conception of science and explanation stems from a version of positivism that is rooted in Hume's analysis of causality. From this perspective, sciences must take the form of elaborating event patterns or regularities of the type "*whenever event x, then event y*". This formulation follows from acceptance of empirical realism, which is the view restricting reality to the objects of experience or direct perception. (Lawson, 1995: 261) Once the empirical realist ontology is accepted, successful science must be only in the form of such a formulation.

Econometrics should be regarded as an important part of the empirical realist project in economics in the sense that it involves the search for covering laws or universal event regularities in a probabilistic form². *As a device for capturing and modeling empirical economic event patterns in a stochastic form, econometric analysis seems to provide us with also an operational basis*³, if we can associate with each model of an economic structure a specific power of intervention or "*direct control*"⁴. That is to say, empirical realistic analysis involves a legitimate basis for the idea of policy making, and ignores the essential error of closed system modeling (project) arising from the belief that "*any such intervention would alter the structure but leave the model ... characterizing the structure in question invariant*" [my emphasis] (Boumans, 1997: 83) This is exactly what Lucas emphasizes.

So, from the critical realist perspective, does Lucas' methodological individualist position remove the methodological failure arising from the strict empirical realist focus of economics adequately? It can be said that, the answer of the question depends on whether this position can be compatible with an open system modeling or not. Although the doctrine, methodological individualism (MI), insists on individuals as starting points of any social analysis, *what the facts about individual are* (Lukes, 1968: 454) or *what is the individual of MI is* [my emphasis] (Sperber, 1997: 123) are still open questions. Therefore, it is possible to appear an inconsistency between MI and open system theorizing depending on the conception of individuals. Lucas' formulation can clarify the meaning of this finding.

III. MI IN LUCAS

As noted before, Lucas' "critique" reveals his methodological individualist position. According to him there may be unfinished or halfway explanations of large-scale phenomena (say, inflation) in terms of other large-scale phenomena (say, full-employment); but we shall not have arrived at rock-bottom explanations of such large-scale phenomena until we have deduced an account of them from statements about the individual facts. Lucas' this emphasis seems to elaborate an active connection between human agency and economic structure. However, can this position be considered as a right step to remove the main methodological gap between investigating individual and large-scale phenomena underlying behind the "econometric practices" on which the "theory of economic policy" is based? The answer of this question is closely related to his conception of individual agent subject.

As a project of empirical realism in economics, the econometric analysis that Lucas criticizes can be operative only in closed and controlled social world making the social or economic systems subject of experimental activities. A closed system, then, can be characterized as a system "in which a one-to-one correspondence can obtain between the way a mechanism acts and events that eventually ensue" (Lawson, 1994: 268). Declaring the existence of individually driven structural change in an economic system can be seen as a rejection of the existence of constant conjunctions of events and closed system thinking. The view that economic structure is totally unpredictable due to underlying human agency factor can be a legitimate basis for the critique of using econometrics as a policy guide. Therefore, the critique of econometric practices on this ground is a manifestation of the problem associated with the *post-Humean ideal* for social science.

But, Lucas' formulation of MI revealing his conception of human agency contradicts his main critique: '*openness of the economic system*'. So, *how does Lucas specify the notion of an individual?* His unit of analysis are identical (labor and output) suppliers and (labor and output) demanders, and he model an individual as a collection of decision rules dictating the action to be taken in given situations. The fundamental predicate describing the individuals is their "adaptive" dimension. By "adaptive" he means a process in which "new decision rules are tried and tested against experience, and rules that produce desirable outcomes supplant those that do not" (1987: 217).

In fact, "being adaptive" is another manifestation of "being rational" and has no explanatory content in the sense that "*to say that people are rational does not explain what they do, but only how they do it*" [my emphasis] (Bhaskar, 1989: 30). But it has some strong implications. For Lucas, "it is

exactly this superficiality that gives economics much of the power that it has” (1987: 241) It gives the opportunity to explain the behavior of agents with reference to the intentions they seek to fulfil and to their perception of the situation. If intention and perception are known, this specification makes at least, qualitative predictions about individual behaviors and their consequences possible.

This displays a contradiction with the principle of openness of society and economic system. Because, “... open system analyses acknowledge that individuals are complex and internally structured and so may respond differently in similar situations at different occasions” (Bache, 2003: 5). A possibility of prediction depends on a possibility of strictly enduring behavioral pattern in the social realm and it seems in a straightforward contradiction with the possibility of genuine choice of action. The proposition that anticipated monetary policy doesn't matter due to rational expectations of the individuals is an illustrative example. According to Lucas, in the case of unanticipated monetary policy, “the new structure of the economy, ..., will be unsystematic and econometrically unpredictable.” In the case of anticipated monetary policy, on the other hand, “there is some hope that the resulting structural changes can be forecasted” (1991: 24-25). The first case emphasizes the open character of the economic system due to the unpredictable aspect of human choice or action. The intuition behind the second case is clear: If people have rational expectations, this means that they are rational and if they are rational, every anticipated monetary policy produces the same effect⁵, *namely inflation*. In other words, Lucas' specification of his “individuals” is so constructed that *a cause always produces the same effect*. This is the “intrinsic closure condition”, as termed by Lawson (1995: 267), and it can be seen as one of the possible ways of closing the social world.

To understand Lucas' attempt to close the social world more clearly, investigating his formal method, so called Walrasian MI, may be needed. Summarizing, Lucas' formulation of MI depends upon two main principles: (i) *the nature of the answer to the question: “What are the facts about individuals?” (adaptive decisions or rational behavior)* and (ii) *ignoring individual heterogeneity⁶ (representative agents)*. Adopting a type of MI basing on these principles has a strong implication. As Kirman (1992: 121) notes, “the motivation for the ... use of” the method of this type “are desires to provide microfoundations for aggregate behavior, and also to provide a framework in which equilibrium is unique and stable.”

Since Walrasian MI rules out all kind of individual behaviors other than the ones which are consistent with a stable and unique equilibrium, it cannot be used to explain the existence of aggregate relations or aggregate phenomena

(e.g. relations between unemployment and inflation) which are incompatible with the factors characterizing individual behavior (e.g. rational expectations). According to this methodological individualist perspective, scientific investigation must follow such a questioning or reasoning procedure: *How can we explain or interpret these event regularities (or casual aggregate relationships) in terms of the specific individual (or micro) model at hand*⁷. Instead of “*what kind of individual behaviors or decisions (or reactions) may be responsible for causing the large-scale phenomena of such type*”. In such a framework “the Phillips Curve” (or any other aggregate phenomena) “emerges not as an unexplained empirical fact but as a central feature of the solution to a general equilibrium system”⁸. (Lucas, 1981) Therefore, the attempt to explain or interpret aggregate economic dynamics in terms of Walrasian MI (or microfoundations) can be seen as another “experimental closure condition”.

CONCLUSION

As a conclusion, Lucas’ conception of the individual in this line doesn’t support a methodological individualist perspective compatible with open system theorizing⁹. Therefore, while the Lucas Critique focuses on the unpredictable aspect of aggregate economic system due to the human agency factor, so focuses on the open character of it, his alternative doesn’t seem to be incompatible with closed system thinking and emerges as a *re-expression of the old problem in a new setting*.

NOTES:

¹ Within this framework, the motion of an economy in any point of time can be determined by a stochastic function, where F , y , x , ε , θ denote a functional form, vectors of endogenous and exogenous variables, random shocks and a supposedly fixed parameter vector respectively.

$$f(y, x, \varepsilon) = F(y, x, \theta, \varepsilon)$$

Since there is no problem in observing the past values of x_t and y_t , so is in estimating θ . For forecasting, one is obliged to insert forecasted x_t values into F . With knowledge of the function F and θ , policy evaluation is a straightforward matter. A policy can be viewed as a specification of present and future values of some components of the sequence $\{x_t\}$. Therefore, it is possible to analyzing of operating characteristics of the system under alternative policies.

² Lawson (1997:76) calls it as “*regularity stochasticism*”.

³ Similarly, after putting the importance of econometrics for economics as a device for understanding economic behavior, for testing economic theories, for forecasting and for analyzing economic policy, Hendry (Bache, 2003:8) states that all four objectives involve discovering sustainable empirical relationships between observed economic

magnitudes.

⁴ After giving an empirical example of testing and verifying quantity theory of money⁴, Lucas puts this point as: “Not only does the quantity theory of money fit data ... but it provides an operational answer to a problem of great social importance, the control inflation.” (Lucas, 1987: 230)

⁵ As Arrow (1987: 201) puts, there is a common belief that economic theory must be based on rationality, as a matter of principle. Otherwise, there can be no theory. Economic theory, since it has been systematic, has been based on some notion of rationality. Lucas (1987: b, 221-222) is also one of the believers. We can learn it easily from his words on Hume’ quantity theory of money: “It is certain that the quantity theory did not originate as an empirical generalization When Hume (1963) first enunciated the hypothesis, in 1742, the data needed were not collected for any economy. ... There is a clear sense in which the theory rests on the hypothesis of individual rationality”.

⁶ Ignoring individual heterogeneity is another closure condition called “*principle of composition*” or “*aggregational condition*”. (Lawson, 1995: 269)

⁷ Katzner’s (1999) argument is a good example for illustrating this situation. He shows that specification of agent-level price adjustment rules can be consistent with the story leading to uniqueness and global stability of general equilibrium only when highly restrictive conditions are put on the specification of individual agents’ behaviors.

⁸ Lucas’ this position is apparent in his attention to the statistical event regularities. Lucas’ doesn’t seem to pay any attention to statistical event regularities as a source of abstraction. According to him, there is a exactly right question for macroeconomists to ask: “Can specific parametric descriptions of technology and preferences be found such that the movements induced in output, consumption, employment and other series in such a model by these exogenous shocks resemble the time series behavior of the observed counterparts to these series in” (1987:34) the economy? His way of explaining some event regularities is not in direction from abstraction of these regularities to investigating some underlying mechanisms, instead specifying a theory basing on the specified individual behavior firstly and expecting that it will be verified by these regularities.

⁹ However, this doesn’t mean that different conception of individual and individual behavior cannot be possible. A perspective considering, say, the individual heterogeneity (e.g. capital-intensive and labor intensive firm) (Stoker, 1983), existence of supra-individual entites (Sperber, 1997) (e.g. firms, labor unions) and interactions between individual and aggregate level of reality (Berg, J. C. J. M. Van den and John M. Gowdy, 2003) (e.g. macrofoundations for microeconomics) may serve a more useful methodological direction to do with for social or economic investigation.

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