

## Equilibrium Business Cycle Theory: A Case Study of Research Agenda Setting in Macroeconomics

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"The study of business cycles is a complex social process ... historians have tended to go too far in attempting to understand developments in monetary [i.e. macro] economics in terms entirely internal to the subdiscipline." (Robert E. Lucas, Jr., 1980:17, 273)

The 1970s saw the crystallisation of the New Classical Macroeconomics (NCM) movement. Subsequently, the course of the 1980s witnessed the ascendancy of NCM in macroeconomic discourse, engendering fundamental changes in macroeconomic analysis. The object of this paper will be to identify and examine the factors underlying the rise of the NCM movement. In undertaking this task an alternative framework to that employed in recent studies of NCM will be presented.

Most historians examining the rise of NCM, and the associated popularity of equilibrium business cycle theory (EBCT), have employed the Lakatosian framework (e.g., Maddock 1984, Weintraub 1985, Kamath 1987) directly appropriated from the philosophy of science. The Lakatosian approach focuses exclusively on the logical development of a given corpus of theory, providing a purely internalist "rational reconstruction" of the historical development of doctrine. This primacy accorded to internalist factors is clearly illustrated by Lakatos' (1971:92) claim that "external history is irrelevant for the understanding of science". Lakatos' approach denies that any fundamental influence may be played by external, social stimuli in the actual evolution of a body of thought. It will be strongly argued in this paper that, irrespective of the applicability of the Lakatosian framework to the physical sciences, the direct application of this framework is inadequate and inappropriate for explaining developments in macroeconomic analysis in particular, and hence economic thought in general.

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The direct application of Lakatos' historiographic model to macroeconomics presupposes that the economics discipline is structurally like the physical sciences (Goodwin, 1980:610). This paper challenges that assumption. Macroeconomics is differentiated from theoretical physics and pure mathematics<sup>1</sup> by its receptiveness to external influences. This derives from the inherent differences in subjects of study, for macroeconomics deals with a continually changing "reality", which at times undergoes fundamental transformation. There are no economic "laws" or theories which are valid for all places or times. Consequently, in macroeconomics, external factors, such as changes in the object studied, can initiate changes in the mode of thought used to explain this reality and so are central to an examination of the developments in macroeconomic analysis.

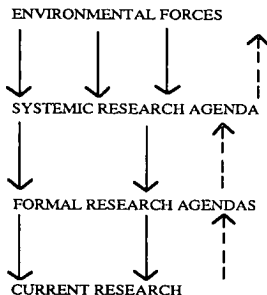
Indeed, it is generally accepted by historians of economics that developments in thought can only be fully accounted for by both internalist and externalist factors. However, as Goodwin (1980:616) has argued, the problem remains to integrate the two approaches and specify their interrelationship. In presenting the model of "research-agenda setting", this paper attempts to take up Goodwin's lead and provide a more appropriate model for explaining developments in modern macroeconomics, in the process of yielding a more rounded account of the rise of NCM.

## I The Research Agenda Setting Model

The model of agenda setting, to be drawn on here, has its origin in the political science literature. The seminal work in this area is Cobb and Elder (1970), which developed the model to account for public action and inaction in addressing specific social issues. The model will be adopted to explain the action of the community of researchers (e.g., research output) through an understanding of the issues (e.g., theoretical, professional etc.) that the group addresses. The model provides a suitable framework in which to identify the set of forces whose conjuncture motivated particular theoretical developments and their subsequent embrace by sections of the profession at large.

The application of the research agenda model is based on the analogy of theory development and change with the "socio-political processes" of group action. Academic research and theory change occur in an arena of competing ideas and interests, with rival issues competing for group attention, attempting to direct group research. The research agenda model acknowledges the salience of the processes of group interaction and will be employed here to examine the stimuli of which NCM, and EBCT, is a product.

The basic structure of the agendas setting model can be summarised by the following diagram:



As illustrated, the major components of the model are the environment, the systemic and formal research agendas, and current research output. The arrows trace the lines of influence, and indicate the transmission of environmental issues onto the systemic and formal research agenda and then down to their embodiment in ongoing research. The environment provides the context in which research is carried out and encapsulates the spectrum of forces which bear upon the work of individual researchers. For the purposes at hand the "environment" for research in macroeconomics may be categorised as two distinct but interdependent sets of factors:

(i) External factors, referring to the influence of the wider socio-economic setting on the content of current research. Such forces incorporate the actual workings of the economic system which macroeconomics explicitly addresses and attempts to understand. Further external factors include the cultural norms and values of society which impinge upon research activity.

(ii) Internal factors, referring to the influence of intellectual puzzles and "scientific" values on a field of research. Examples of such factors internal to the discipline include the theoretical problems and intellectual apparatus inherited from previous researchers.

The two sets of forces temper each other, and together account for the content of current macroeconomic research.

The concept of a research agenda is the analytical core of the model. Generally, an agenda refers to a formal list or program of items to be acted upon, discussed or examined. In relation to the model at hand, the systemic research agenda can be defined as a menu of items and problems that all researchers in macroeconomics address. Items on the systemic research agenda include the substantive questions to be dealt with and the general methodology to be employed in the press of seeking their solution.<sup>2</sup> (See below for a discussion of the items on the systemic agenda that saw the rise of NCM.)

The formal research agendas are subsidiary to the systemic agenda. A formal research agenda is associated with each tradition of thought (e.g., Neo-Classical, Neo-Keynesian), with its own "conceptual lens" acting as a filter through which the systemic research agenda is interpreted, and its content defined and prioritised. Consequently, items on the formal agenda are more precise than those on the systemic agenda. Moreover, the formal agenda contains items additional to those on the systemic agenda, such as the methods and techniques of analysis associated with a particular tradition, deriving from their "conceptual lens". Hence, it is the formal agendas which researchers are immediately aware of and explicitly address in their work.

Every individual piece of research in economics addresses a formal research agenda, and by implication a systemic agenda. In presenting research it is necessary to place the contributions made by that research into a wider perspective; that is, to acknowledge explicitly the agenda and the specific items dealt with. Research agendas can be seen as an institution of the profession, ranking the objectives and broadly outlining the constraints on research, thus functioning to focus the attention and resources of scholars.

The content of formal research agendas are revealed in that family of journals associated with a particular tradition of inquiry. The hierarchy of journals within that family, and the publication space devoted to particular issues, indicate the priority attached to individual items on the formal agendas by that section of the profession. Furthermore, the content of the systemic agenda is revealed as those items commonly addressed in the different families of journals associated with a field of research. Thus, the journals provide an important historical record of the content of contemporary research agendas.

Before environmental issues and factors reach the attention of researchers they must gain access to the systemic research agenda. There are a number of avenues through which environmental issues may come to influence the content of the

systemic research agenda. Some issues force themselves onto the research agenda by way of structural ties between the environment and agenda (e.g. the empirical phenomenon of stagflation). Other issues rely upon "research entrepreneurs" who advertise and promote them to the profession at large, attempting to manipulate and change the content of the systemic research agenda. (See below for a discussion of how Lucas, Sargent and Barro fulfilled this function for NCM). Hence the channels of communications, and the conventions of these channels, are crucial to the process of research agenda dynamics and theory change.

The recent interest in the rhetoric of economics, such as McCloskey (1983) and Klamer (1984), can be viewed as focusing on the communication channels in the above model. This literature examines the language and means by which environmental issues are transformed into research agenda items and conveyed to individual researchers. Although it is beyond the scope of this paper to examine the rhetorical practices of NCM theorists in detail, the research agenda model can be seen as a framework in which otherwise alternative approaches to the history of thought may be synthesised.

In summary, the research agenda model may be used to identify the specific environmental factors preponderant over a period of time, underlying the developments in a particular field of inquiry. The environmental factors influence the content of the systemic research agenda, which is then interpreted by scholars, through a "conceptual lens", as a formal research agenda. Scholars working in that field are assumed to be addressing the content of the relevant formal research agenda. The ascendancy of a body of theory in a field is due to its ability, as perceived by the community of scholars, to satisfy best the requirements of the systemic research agenda (see Section II below). In turn, the lasting influence of a body of theory may then be gauged by its subsequent impact on the content of the systemic research agenda (see Section III below).

The model of research agenda setting may be readily contrasted with Lakatos' model, based on his "methodology of scientific research programmes" (SRP). Lakatos' model centres on the concepts of the "hard core" and "positive and negative heuristics". According to Lakatos, the "hard core" refers to the unquestioned assumptions and propositions which are the basis of an SRP's theoretical arguments. For NCM, these hard core theoretical assumptions may be summarised as:

- (i) optimisation in a general equilibrium context,
- (ii) continuous market clearing,
- (iii) natural rate of unemployment/neutrality of money, and
- (iv) incomplete information.

The "positive heuristic" is an operative rule which outlines the research strategy for adherents of the SRP to follow, broadly encouraging "the construction of models consistent with the hard core assumptions". Conversely, the "negative heuristic" stipulates that the followers of the SRP "not build models that violate any of the hard core assumptions". Lakatos' historiographic method is first to identify the hard core of an SRP from the research carried out in the "protective belt" according to the heuristics. Then, the empirical successes and failures of the SRP, over time, are charted and hence its contributions to knowledge assessed.

In contrast, the research agenda model takes a broader perspective, seeking to identify the factors underlying the adoption of the particular "hard core" assumptions. Furthermore, the "positive heuristic" is very similar to the concept of a formal research agenda, enunciating directives for researchers to follow. However the concept of the formal research agenda is wider than the "positive heuristic", for it invariably includes "extrarational" items not logically related to the "hard core" theoretical assumptions (e.g. professional practices and conventions). Therefore, the research agenda model is broader in scope than Lakatos', seeking the origin of the hard core assumptions and admitting the potential influence of social forces on the content of current research.

Additionally, according to Lakatos' approach, the popularity of a theory, or school of thought, within the community of scholars, is due to its continuing ability to predict "novel facts" that resist empirical falsification. Alternatively, in the research agenda model as outlined above, the popularity of a theory or school ensues from its best meeting the items and priorities on the systemic research agenda, and hence may be due to characteristics such as reinforcing methodological biases or promoting certain professional conventions, in addition to "empirical progressiveness". Thus, the research agenda model necessitates the examination of sociological as well as rational-theoretical factors in explaining the developments in macroeconomic thought and analysis over time.

## II Research Agenda Setting and the Rise of NCM

In this section the research agenda setting model will be fleshed out by examining the rise of the NCM movement. The environmental factors prevailing at the time will be examined, and their influence will be traced through to their embodiment in research and in the profession's reception of NCM. These environmental factors will be considered under the categories of external, external/internal and internal. Rather than provide a comprehensive survey of all significant environmental factors, the present paper will concentrate on the more important factors, and in particular those that have been neglected in the recent histories of NCM.

## 1. External factors and "nonrationality"

Macroeconomics is geared to explaining contemporary economic events. As argued above, the "reality" that macroeconomists confront is continually changing, at times in fundamental ways. Macroeconomic research is structurally linked to changes in the operation of the economic system. Consequently, when fundamental changes in the economy occur, existing theory and "accepted knowledge" may become outdated, providing the opportunity for "theory change" and the rise of a modern theory.

The period of 1968-1975, which saw the publication of the formative works in NCM by Lucas, was indeed a period of dramatic change in Western market economies. This era witnessed the unprecedented simultaneous occurrence of high levels of unemployment and inflation. Additionally, this coincided with major changes in the system of international payments and hence domestic monetary regimes. The severity of these unforeseen events ensured their direct access to the systemic research agenda, with "stagflation" becoming a catchword in macroeconomic discourse, and thus presented a challenge to the accepted body of thought founded under the prior economic conditions.

The developments in the economy undermined the existing Keynesian hegemony in macroeconomic research. The traditional "Phillips curve", and its associated Keynesian explanation, had collapsed.<sup>3</sup> As a result, the "received (Keynesian) theory" was seen by many to be at variance with the "most salient facts of reality", and so the time was ripe for the ascendancy of an "updated" theory of the aggregate economy.

The EBCT of NCM addressed these changes in economic circumstances and presented a framework in which they could be comprehended. The ability of NCM to provide a coherent treatment of the recent economic events is partly due to the theory's redefinition of those items on the systemic research agenda. For instance, within the framework of EBCT, "unemployment" is defined as the voluntary action of workers based on mistaken expectations, with the notion of "involuntary unemployment" becoming vacuous and nonsensical. By redefining the systemic agenda items which were problematic to the Keynesian orthodoxy, EBCT took the initiative offered by economic events of the time.

## 2. External/internal factors: institutional inputs

Within the area of overlap between external and internal environmental factors are two important institutional features: the historical link between macroeconomics and econometrics, and the organisation of the economics

profession in general. The econometrics movement has its origins in the interwar years, evolving from the research in macroeconomics conducted by the Cowles Commission in the United States. In that earlier period the Cowles Commission, led by Koopmans, participated in theoretical and methodological debates regarding business cycle research. The Commission's position emphasised the role of *a priori* theory but saw econometrics as providing the necessary bridge between "theory" and "the facts". The Commission prevailed in those interwar debates, and played a pivotal role in integrating econometrics into mainstream economic discourse (Kim 1986, pp.117-50). Thus econometrics came to institutionalise the link in macroeconomics between theoretical research and economic observations, with econometric estimation and "testing" becoming an established item on the macroeconomic research agenda.

Consequently, integral to the research strategy of NCM, and its critique of Keynesian Macroeconomics, is the school's econometric approach. As cogently recorded by Kim (1986, pp.172-9) the econometric approach to EBCT is a direct descendant of the Cowles Commission, though the former is more extreme in its strict adherence to *a priori* theory, based on the tenets of individual optimisation and market clearing. By taking such an extreme position the proponents of EBCT provide a solution to the "identification problem", which arises at the interface of theory and statistical inference, by deriving the structural equations of their models from rigorous "first principles" of microeconomic theory. This approach to econometrics then forms the basis of their attack on Keynesian macroeconometrics which employs "rules of thumb" and "crude empirical relationships".

Furthermore, the organisation of the economics profession has influenced the content of the systemic research agenda of macroeconomics. Research in both social and physical sciences has become increasingly professionalised over the last century. However, as analysed by Whitley (1984) the economics profession is beset with an inherently intractable subject of study. As a result the reputational and reward system in the economics profession has evolved to insulate itself from its problematic subject of research. This is evident in the content of systemic research agendas by the priority given to theoretical extensions and sophisticated techniques of analysis over exercises such as constructing data bases or improving data collection techniques. Likewise, higher status and prestige are accorded to scholars undertaking theoretical research above more applied, empirically orientated work.

The rise of EBCT reflects similar professional values and priorities. Although consistent with the "most salient facts of reality", and given "encouraging" econometric test results, the major contributions of EBCT are formalistic. Substantive and methodological scope have been sacrificed in EBCT



so as to gain a more explicit and mathematically rigorous theory. The primary contribution of the NCM school, as viewed even by its proponents, is in providing a mathematically tractable model of business cycles based on equilibrium value theory. The achievements of NCM are technically innovative, with modeling practices involving very sophisticated mathematical techniques, such as simultaneously solving sets of stochastic difference equations, and has even led to developments in econometric methods, such as Sargent's "innovative technique" in time series analysis. Thus the popularity and "success" of EBCT can be seen as partly due to its intellectual priorities corresponding to the professional ethos permeating the macroeconomic research agendas.

### 3. Internal factors

The factors to be examined in this section cover the intellectual stimuli to EBCT. Lucas (1980, pp.1-18) provides a detailed discussion of the theoretical stimuli for his pioneering works in EBCT, which will be briefly summarised. By the late 1960s/early 1970s the priority of providing macroeconomics with rigorous microeconomic foundations came to the fore on the systemic research agenda (see Weintraub, 1979). The initial work in NCM by Lucas and Rapping (1969) was an attempt to model the wage-price sector of the macroeconomy from first principles of microeconomic theory. This contribution was later to form the basis of EBCT labour market modeling. Thus the formative work in NCM was concerned with assimilating macroeconomic theory into the Neo-Walrasian value theoretic framework.

Arguably, EBCT marked the culmination of one strand of the microfoundations literature. EBCT successfully reconciled the explanation of business cycles, which economic events had returned to the fore on the systemic research agenda, with Neo-Walrasian value theory. Following Lucas' (1972) presentation of the rational expectations hypothesis, the modeling of economic actors' expectations could be consistent with the rationality postulate underlying Neo-Walrasian value theory. Hence Lucas (1975) constructed a model of the aggregate economy, in which business cycles were generated endogenously, fully consistent with the equilibrium price theory in which all possible mutual gains from trade were exhausted. Thus NCM may be seen as marking the completion of one line in the search for microeconomic foundations of macroeconomics.

Furthermore, specific personalities played a key role in the subsequent popularity of EBCT amongst economic researchers. Lucas, Sargent and Barro functioned as "research entrepreneurs" and were critical to the ascendancy of EBCT. Lucas undertook much of the pioneering work in EBCT and pursued that line of inquiry for many years. Moreover, Lucas confronted the Keynesian orthodoxy, and in several provocative articles (1972, 1975, 1976) strongly

attacked the mainstream on theoretical, econometric and policy levels. Sargent was a key figure, making important extensions and refinements to Lucas' work, especially in the econometrics field. Likewise, Barro, a prolific writer, made fundamental contributions to EBCT and also actively promoted this line of work to professional colleagues. Thus several individuals were essential to the rise of EBCT, in seizing the opportunities provided by the systemic research agenda at the time and place.

Additionally, the publication by Sargent (1979) marked the formation of EBCT as a coherent body of theory. This textbook outlined NCM priorities and techniques of analysis, and presented a reinterpretation of the history of economic analysis from this modern perspective. This revisionist history of thought depicted earlier schools as special cases of the EBCT model. The textbook served a pedagogic function as well as disseminating EBCT to a wider, younger audience. Barro's (1984) text functioned similarly, advertising the virtues of the new theory, its "rigor" and "fruitfulness", and aiding the recruitment of researchers to the movement. Both texts have proved to be highly successful, going through a number of editions and being used internationally in universities as standard macroeconomic texts. The NCM texts were a turning point in the fortunes of EBCT, with Sargent and Barro advancing the frontier of the "battle of ideas" to the younger, ascendant audience, and hence contributing to the influence that EBCT would later exert on the systemic agenda of macroeconomics.

Therefore, it can be seen that the formation of EBCT was precipitated by the environmental factors prevailing at the time. The environmental issues influenced the items on the systemic and formal research agendas in macroeconomics, which NCM addressed. The ensuing popularity of NCM was due to an increasing number of researchers being persuaded that EBCT best met the requirements of the systemic agenda, at the time, above competing theories.

### III The Legacy of NCM

"the construction of rational expectations models of the business cycle will be the centre-piece of the macroeconomic research agenda over the next fifteen years, as much as it has been over the fifteen years that have passed since Lucas's influential contributions" (Dotsey and King, 1987, p.309).

The research agenda model not only is a useful framework in which to explain past developments in macroeconomic thought, but is also useful in suggesting the likely influence of a body of theory on future research. The popularity of NCM was seen as arising from its perceived capacity to meet best the demands of the systemic research agenda at that time. NCM became the focus of

macroeconomic discourse. NCM then in turn was able to influence the content of the systemic research agenda. This opportunity to "set" the research agenda provides the key to gauging the likely legacy NCM and EBCT.

Although present indications are that the popularity of NCM has peaked, the school has had a discernible impact on the macrosystemic agenda. New concepts and techniques of analysis have been placed on the agenda, dislodging some older items. Different "economic problems" are now being explored. Research has been reorientated along lines of "real business cycle theory" and applications of the "rational expectations hypothesis." Thus the continuing influence of EBCT and hence NCM is evident in the language, concepts and techniques now employed in macroeconomic discourse.

Similarly, the success of EBCT has reinforced the values and priorities that contributed to its ascendancy. Keynesian critics responded to it by constructing more rigorous microfoundations for "sticky-price" models, reflecting the emphasis placed on formalism and "internal consistency". This priority for formalism may be expected to continue for the immediate future, possibly raising concerns for the future "progress" of macroeconomic thought.

#### IV Conclusion

In conclusion, the research agenda model has provided new insights into the rise of NCM. The incorporation of external environmental factors uncovered important influences not encapsulated within the Lakatosian framework. However, the present analysis is only a tentative first step towards Goodwin's goal. Future work is needed to articulate further the research agenda model and to specify more precisely the transmission mechanisms between the environment, research agenda and research output.

#### Footnotes

1. Lakatos developed his model from a study of the history of pure mathematics.
2. The concept of a research agenda forms the basis of Boland's recent work on economic methodology. However, in contrast to the present work, Boland (1982) refers to a single "hidden" agenda underlying the entire discipline of economics.
3. The Keynesian explanation of the Phillips curve represented the received business cycle theory at that time.

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