

# ADAPTIVE AND RATIONAL EXPECTATIONS IN MACROECONOMIC MODELS\*

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## I. INTRODUCTION

In continuous, non-stochastic, macroeconomic models of inflation, output and growth it is sometimes supposed that, if expectations are altered adaptively in response to unanticipated inflation, increasing the speed at which the adjustment takes place will, in the limit, be equivalent to postulating the existence of rational expectations; the latter, in this context, implying that price movements are fully anticipated at all times.<sup>1</sup> For example, in considering the adaptive expectations equation

$$\lambda \frac{dp}{dt} = \lambda (p - x), \quad (1)$$

where  $p$  is the logarithm of the price level,  $x$  is the expected rate of inflation and  $\lambda$  a positive parameter measuring the speed of adjustment of  $p$ , Burmeister and Dobell (1970) have claimed that the case of  $\lambda \rightarrow \infty$  is 'analogous' to perfect myopic foresight.<sup>2</sup> More recently, and more explicitly, in analysing the dynamic behaviour of an IS-LM model augmented by a price change equation, Search (1977) has argued that "... as the coefficient of adaptive expectations becomes large ( $\lambda \rightarrow \infty$ ),  $x$  approaches  $dp/dt$ . Thus, in the limit, when people put no weight on past information (in a simple mechanistic way that is not dictated by other features of the system) adaptive expectations

\*Manuscript received 25.11.78; final version received 25.11.78.

<sup>1</sup>Equality between the actual and expected rates of inflation in deterministic models is often referred to as perfect myopic foresight, or simply as myopic foresight. In the present paper these terms can be regarded as being interchangeable with rational expectations.

<sup>2</sup>The intended meaning of this statement is not entirely clear because of the omission of any reference to an appropriate limiting process. However, the interpretation adopted would appear to be the most natural, viz., that at any given instant, the actual and expected rates of inflation tend to equality as the expectations adjustment parameter tends to infinity.

# Rational Expectations In Macroeconomic Models

**C. L. F. Attfield, David Demery, N. W. Duck**



## **Rational Expectations In Macroeconomic Models:**

*Rational Expectations in Macroeconomic Models* P. Fisher, 2013-04-17 It is commonly believed that macroeconomic models are not useful for policy analysis because they do not take proper account of agents expectations Over the last decade mainstream macroeconomic models in the UK and elsewhere have taken on board the Rational Expectations Revolution by explicitly incorporating expectations of the future In principle one can perform the same technical exercises on a forward expectations model as on a conventional model and more Rational Expectations in Macroeconomic Models deals with the numerical methods necessary to carry out policy analysis and forecasting with these models These methods are often passed on by word of mouth or confined to obscure journals Rational Expectations in Macroeconomic Models brings them together with applications which are interesting in their own right There is no comparable textbook in the literature The specific subjects include i solving for model consistent expectations ii the choice of terminal condition and time horizon iii experimental design i e the effect of temporary vs permanent anticipated vs unanticipated shocks deterministic vs stochastic dynamic vs static simulation iv the role of exchange rate v optimal control and inflation output tradeoffs The models used are those of the Liverpool Research Group in Macroeconomics the London Business School and the National Institute of Economic and Social Research

**Rational Expectations in Macroeconomics** C. L. F. Attfield, David Demery, N. W. Duck, 1985 **An Econometric Rational Expectations Macroeconomic Model for Developing Countries with Capital Controls** International Monetary Fund, 1990-02-01 A small macroeconomic model based on familiar theoretical considerations is developed and estimated using data from 31 developing countries Efficient estimation techniques are used to control for country heterogeneity under the assumption of rational expectations The estimates and the test statistics suggest that the model could serve well as a framework for developing country macroeconomic analysis An interesting feature of the specification of the model is that it allows the hypothesis of capital mobility to be explicitly tested The empirical analysis suggests that on average developing countries tend to exhibit a high degree of capital mobility Reduced Forms

of Rational Expectations Models Laurence Broze, Christian Gourieroux, Ariane Szafarz, 2001 A comprehensive exposition of rational expectations models is provided here working up from simple univariate models to more sophisticated multivariate and non linear models Testing the Rational Expectations Hypothesis in Macroeconomic Models Ray C. Fair, Yale University. Cowles Foundation for Research in Economics, 1993

**A Rational Expectations Approach to Macroeconometrics** Frederic S. Mishkin, 2007-11-01 A Rational Expectations Approach to Macroeconometrics pursues a rational expectations approach to the estimation of a class of models widely discussed in the macroeconomics and finance literature those which emphasize the effects from unanticipated rather than anticipated movements in variables In this volume Fredrick S Mishkin first theoretically develops and discusses a unified econometric treatment of these models and then shows how to estimate them with an annotated computer program **Analyses in Macroeconomic Modelling**

Andrew J. Hughes Hallett, Peter McAdam, 2012-12-06 Macroeconomic Modelling has undergone radical changes in the last few years. There has been considerable innovation in developing robust solution techniques for the new breed of increasingly complex models. Similarly, there has been a growing consensus on their long run and dynamic properties as well as much development on existing themes such as modelling expectations and policy rules. This edited volume focuses on those areas which have undergone the most significant and imaginative developments and brings together the very best of modelling practice. We include specific sections on I Solving Large Macroeconomic Models II Rational Expectations and Learning Approaches III Macro Dynamics and IV Long Run and Closures. All of the contributions offer new research whilst putting their developments firmly in context and as such will influence much future research in the area. It will be an invaluable text for those in policy institutions as well as academics and advanced students in the fields of economics, mathematics, business and government. Our contributors include those working in central banks, the IMF, European Commission and established academics.

*Estimation of Macroeconomic Models with Linear Rational Expectations* Aurora Alonso, 1985

*Learning and Expectations in Macroeconomics* George W. Evans, Seppo Honkapohja, 2012-01-06 A crucial challenge for economists is figuring out how people interpret the world and form expectations that will likely influence their economic activity. Inflation, asset prices, exchange rates, investment and consumption are just some of the economic variables that are largely explained by expectations. Here George Evans and Seppo Honkapohja bring new explanatory power to a variety of expectation formation models by focusing on the learning factor. Whereas the rational expectations paradigm offers the prevailing method to determining expectations, it assumes very theoretical knowledge on the part of economic actors. Evans and Honkapohja contribute to a growing body of research positing that households and firms learn by making forecasts using observed data, updating their forecast rules over time in response to errors. This book is the first systematic development of the new statistical learning approach. Depending on the particular economic structure, the economy may converge to a standard rational expectations or a rational bubble solution or exhibit persistent learning dynamics. The learning approach also provides tools to assess the importance of new models with expectational indeterminacy in which expectations are an independent cause of macroeconomic fluctuations. Moreover, learning dynamics provide a theory for the evolution of expectations and selection between alternative equilibria with implications for business cycles, asset price volatility and policy. This book provides an authoritative treatment of this emerging field, developing the analytical techniques in detail and using them to synthesize and extend existing research.

**DSGE Models in Macroeconomics** Nathan Balke, Fabio Canova, Fabio Milani, Mark Wynne, 2012-11-29 This volume of *Advances in Econometrics* contains articles that examine key topics in the modeling and estimation of dynamic stochastic general equilibrium (DSGE) models. Because DSGE models combine micro and macroeconomic theory with formal econometric modeling and inference over the past decade, they have become an established framework for analysis.

**A Reader's Guide to Rational Expectations** Deborah A. Redman, 1992 A Reader's

Guide to Rational Expectations will be an essential reference guide for all economists who wish to keep **Rethinking Expectations** Roman Frydman, Edmund S. Phelps, 2013-01-23 This book originated from a 2010 conference marking the fortieth anniversary of the publication of the landmark Phelps volume *Microeconomic Foundations of Employment and Inflation Theory* a book that is often credited with pioneering the currently dominant approach to macroeconomic analysis However in their provocative introductory essay Roman Frydman and Edmund Phelps argue that the vast majority of macroeconomic and finance models developed over the last four decades derailed rather than built on the Phelps volume's microfoundations approach Whereas the contributors to the 1970 volume recognized the fundamental importance of according market participants expectations an autonomous role contemporary models rely on the rational expectations hypothesis REH which rules out such a role by design The financial crisis that began in 2007 preceded by a spectacular boom and bust in asset prices that REH models implied could never happen has spurred a quest for fresh approaches to macroeconomic analysis While the alternatives to REH presented in *Rethinking Expectations* differ from the approach taken in the original Phelps volume they are notable for returning to its major theme understanding aggregate outcomes requires according expectations an autonomous role In the introductory essay Frydman and Phelps interpret the various efforts to reconstruct the field some of which promise to chart its direction for decades to come The contributors include Philippe Aghion Sheila Dow George W Evans Roger E A Farmer Roman Frydman Michael D Goldberg Roger Guesnerie Seppo Honkapohja Katarina Juselius Enisse Kharroubi Blake LeBaron Edmund S Phelps John B Taylor Michael Woodford and Gylfi Zoega **Testing the Rational Expectations Hypothesis in Macroeconomic Models with Unobserved Variables** Leslie T. Oxley, Michael McAleer, University of Edinburgh. Department of Economics, 1992 **The Rational Expectations Revolution in Macroeconomics** David K. H. Begg, 1982 *Rational Expectations and the Dynamic Structure of Macroeconomic Models* Robert J. Schiller, National Bureau of Economic Research, University of Pennsylvania. Department of Economics, 1975 The recent literature on rational expectations in macroeconomic theory is surveyed here with the objective of distilling from the various papers useful suggestions for econometric methodology The paper is not concerned with the empirical questions with which these models have been associated but rather with the value and usefulness of the concept of rational expectations The paper begins with a brief discussion of the theory of martingales as it has been applied to microeconomic theory Then the general linear rational expectations model of which most models discussed in the literature are in terms of their structure special cases is developed and its properties advantages and drawbacks discussed The paper concludes with a discussion of the possibilities for estimation and application of such linear models **Reduced Forms of Rational Expectations Models** L. Broze, C. Gourieroux, A. Szafarz, 2013-06-17 A comprehensive exposition of rational expectations models is provided here working up from simple univariate models to more sophisticated multivariate and non linear models **Interpreting the Basic Rational Expectations Macroeconomic Model** José Encarnación, 1987

*Learning Process and Rational Expectations* Olivier Basdevant, 2003      Dynamic Econometrics For Empirical Macroeconomic Modelling Ragnar Nymoen, 2019-07-09 For Masters and PhD students in Economics

In this textbook the duality between the equilibrium concept used in dynamic economic theory and the stationarity of economic variables is explained and used in the presentation of single equations models and system of equations such as VARs recursive models and simultaneous equations models The book also contains chapters on exogeneity in the context of estimation policy analysis and forecasting automatic computer based variable selection and how it can aid in the specification of an empirical macroeconomic model and finally on a common framework for model based economic forecasting Supplementary materials and notes are available on the publisher's website

**Rational Expectations Macroeconomics** Patrick Minford, 1992

Rational Expectations Macroeconomics is the second edition of Rational Expectations and the New Macroeconomics by Patrick Minford and David Peel Under the sole authorship of Professor Minford this new edition represents a practical introduction to the principles and applications of rational expectations RE methods in macroeconomics for third year undergraduates and postgraduates The author sets out to provide a basic working knowledge of the Rational Expectations Hypothesis REH by demonstrating in full various methods for solving RE models The book then deals with policies and issues frequently encountered when applying these models including stabilization policy fiscal policy the political economy of democracy and the Phillips curve Finally the author turns to methods of testing the REH By the end of the book students should be in a position to apply RE models to whatever economy they are concerned with Professor Minford has updated the text extensively and included new chapters on representative agent models increasingly used in applied forecasting and policy analysis and modelling the open economy In the decade since the first edition of this classic text was written the economics profession's respect for the REH has only increased The author's introductory and concluding chapters place the REH research programme in its historical context assess the current state of the debate and look ahead to future research in this important subject

## Reviewing **Rational Expectations In Macroeconomic Models**: Unlocking the Spellbinding Force of Linguistics

In a fast-paced world fueled by information and interconnectivity, the spellbinding force of linguistics has acquired newfound prominence. Its capacity to evoke emotions, stimulate contemplation, and stimulate metamorphosis is actually astonishing. Within the pages of "**Rational Expectations In Macroeconomic Models**," an enthralling opus penned by a highly acclaimed wordsmith, readers attempt an immersive expedition to unravel the intricate significance of language and its indelible imprint on our lives. Throughout this assessment, we shall delve to the book is central motifs, appraise its distinctive narrative style, and gauge its overarching influence on the minds of its readers.

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