Understanding DSGE models

Theory and Applications

“...This book teaches DSGE models from scratch. It explains the basic economic relations behind the models; discusses their assumptions; derives the results step by step; presents computer codes that solve each model covered in the book; and shows the results. The book will appeal to students, scholars and professionals interested in acquaint themselves with modern macroeconomics and to those searching for a detailed guide for solving DSGE models.”

Bernardo Guimarães
Sao Paulo School of Economics – FGV

Summary

While the theoretical development of DSGE models is not overly difficult to understand, practical application remains somewhat complex. The literature on this subject has some significant obscure points. This book can be thought of, firstly, as a tool to overcome initial hurdles with this type of modeling. Secondly, by showcasing concrete applications, it aims to persuade incipient researchers to work with this methodology. In principle, this is not a book on macroeconomics in itself, but on tools used in the construction of this sort of models. It strives to present this technique in a detailed manner, thereby providing a step by step course intended to walk readers through this otherwise daunting process. The book begins with a basic Real Business Cycle model. Subsequently, various frictions are gradually incorporated into a standard DSGE model: imperfect competition; frictions in prices and in wages; habit formation; non-Ricardian agents; adjustment cost in investment; costs of not using the maximum installed capacity; and finally, Government.

Contents

1 Introduction
2 Basic Real Business Cycle Model (RBC)
3 Basic New-Keynesian model (NK)
4 New-Keynesian model with sticky wages
5 New-Keynesian model with habit formation and non-ricardian agents
6 The New-Keynesian model with investment adjustment costs and variable capital utilization
7 New-Keynesian model with government
References
Appendices
A Mathematical tools.
B Basic ideas about DSGE

About the author

Celso Costa is Lecturer and Associated Researcher at the Brazilian Macro Center - Sao Paulo School of Economics (EESP) – FGV recognized as one of the top schools of economics in Latin America. And Adjunct Professor at Universidade Estadual de Ponta Grossa - UEPG. Prior to his present roles, he completed a Post-doctorate in Economics at EESP. He holds a PhD in Economic Development from Universidade Federal do Paraná - UFPR, a Master degree in Economics from Universidade Estadual Paulista – UNESP and a Bachelor degree in Geophysics from Universidade de São Paulo – USP.