Introduction to the Special Issue on
DSGE Models for the Brazilian Economy

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Dynamic Stochastic General Equilibrium (DSGE) models have become the standard framework for quantitative macroeconomic analysis in the world. Naturally, there is now a growing literature on DSGE models designed to study the Brazilian economy. A conference organized by the Centro Macro Brasil of the Sao Paulo School of Economics – FGV, sponsored by the Instituto de Pesquisa Econômica Aplicada (IPEA), on August 22, 2014 featured papers using DSGE models applied to Brazil. This special issue of the Brazilian Review of Econometrics contains five papers presented in the conference.

The Brazilian Central Bank (Banco Central do Brasil) has its own DSGE model, the so-called SAMBA. The paper that presents and analyses the model, by Marcos de Castro, Solange Gouvea, André Minella, Rafael Santos and Nelson Souza-Sobrinho, leads this special issue. SAMBA is a large scale DSGE model with a few features designed to bring it closer to the Brazilian economy, namely, the presence of administered prices, an explicit target for the primary surplus, a fraction of households with no access to financial markets, external finance of imports, and imports used as inputs in the production function. SAMBA can be used as a tool for forecasting and for assessing the impact of different shocks.

The second paper in this volume, by Fabio Kanczuk, shares the same objectives but employs a medium scale DSGE model of a small open economy. The model is then estimated to understand which shocks can explain the observed fluctuations in output in the last 15 years. The model is also used to assess the economic impacts of a hypothetical currency depreciation and to check the hypothesis that monetary policy has become more powerful over time in Brazil.

The next paper in this volume, by Marco Cavalcanti and Luciano Vereda, builds a DSGE framework with a rich modeling of the public sector that explicitly considers public employment as well as other types of public expenditures, public investments and transfers. The model also incorporates a fairly detailed fiscal apparatus comprising several policy instruments both on the taxation and spending sides, and considers different fiscal rules. The model is thus able to quantify the macroeconomic effects of shocks to different types of fiscal policy in the short and medium run.

The fourth paper in this volume, by Vladimir Teles, Celso Costa Júnior and Rafael Rosa, presents a DSGE model with two sectors that incorporates technical
progress in the investment goods sector. This is motivated by evidence of the importance of this channel that they also document in the paper. They show that incorporating productivity shocks specific to the investment goods sector in the model affects the results in important ways. In particular, optimal monetary policy is more rigorous than in standard models.

Most DSGE models applied to the Brazilian economy do not use data from the periods preceding the adoption of the inflation targeting regime in 1999. In the last paper of this volume, Carlos Carvalho and André Vilela build a DSGE model to investigate the transition between the different exchange rate (and monetary policy) regimes that took place in 1999. Their results support the transition to the inflation targeting regime in 1999, but suggest that an earlier transition in the first half of 1998 might have been even better.

The papers in this special issue highlight the main advantages of the use of DSGE models for quantitative macroeconomic analysis. As put by Kanczuk, a DSGE model “forces one to think in terms of exogenous shocks and endogenous responses, and thus to ask sensible questions”. Castro et al. add that DSGE models “can be successfully used as a story-telling device in the policymaking process.” We hope that by bringing together a number of papers applying the DSGE methodology to study the Brazilian macro economy, this volume serves both as a useful guide to and as an inspiration for researchers interested in working in this area.