



INSTITUTE FOR CAPACITY DEVELOPMENT

Lecture 0 – A Brief Introduction to DSGE Models and Overview of the Course

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Course on Monetary and Fiscal Policy Analysis with
DSGE Models (OT26.08)

Lecture Outline

- Motivation: What is a DSGE model?
- Course Objectives and Structure
- Rules of the Game

DSGE models are important tools for **policy analysis and forecasting** in policymaking institutions

DSGE models help think about

- **The effects of shocks on the economy:** How would the Covid-19 pandemic affect the economy (GDP)?
- **The role of policy in shaping these effects:** Should the central bank reduce interest rates? Should the government support the economy and increase spending? Which spending? And if so, can this spending dampen the effects of the pandemic?
- **The effects of policy itself:** What are the macroeconomic effects of public investment increases? What is the fiscal multiplier?

DSGE models are “good” tools for policy analysis because of their **structure**

Dynamic (D)

- Capturing how macro variables evolve over time (persistence, co-movement, timing of peaks and troughs, etc.)

Stochastic (S)

- Making explicit the role of shocks in driving macro variables; helping think about statistical properties of macro data

General Equilibrium (GE)

- All markets are linked and clear and all variables are determined jointly
- Feedback effects from policy to economic behavior and vice-versa

The DSGE acronym is missing important adjectives

Quantitative (very important for policymakers!)

- The goal is to make quantitative statements: Output should increase by x percent following an increase in government spending by z percent (after y quarters).

Micro-founded

- The equations in the model reflect a well-defined maximization problem faced by households and firms (and sometimes policymakers as well)
- Each equation has a structural interpretation

Rational Expectations

- DSGEs typically assume agents in the model form expectations in line with the model structure and the source of shocks

Benefits and Challenges of DSGEs

Benefits

- Explicit nature of distortions, nominal and real, helps understand the channels through which shocks propagate in the economy
- Discipline in modeling. Need to think hard about structure of the economy, and how to capture it explicitly in the model
- General equilibrium helps come up with a story about the whole economy
- Adds structure to policy discussions
- If used systematically, makes policy analysis consistent over time

Benefits and Challenges of DSGEs

Challenges

- Can be overly complex, difficult to understand what drives what
- Can give a false sense of precision or knowledge about how the economy works
- Tractability may require simplistic/implausible assumptions to make model tractable (representative agent, rational expectations, too few deviations from competitive markets)

Course Objectives and Structure

Objective: Provide an in-depth understanding of the main building blocks of DSGE models for analyzing monetary and fiscal issues

Structure

- Real Business Cycle (RBC) model
- Canonical New-Keynesian Model
- Labor markets and real rigidities
- Fiscal policy in DSGE models
- Open economy dimension
- Financial frictions (Financial Accelerator)
- Guest lecture from Franz Hamann on the Applied Models in Central Banking: Case of Colombia
- Bringing models to data
- Forecasting and Policy Scenario Analysis

Rules of the Game

- About equal distribution between lectures and workshops
- Use Moodle
- **Instructors:**
 - Daniel Baksa (IMF, ICD)
 - Alberto Soler (IMF, ICD)
 - Tao Zha (IMF, Consultant)
- **Role of instructors:**
 - Deliver lectures
 - Provide broad guidance in workshops
 - Provide further guidance in consultations
 - Clarify and elaborate further the ideas presented in lectures

Your Active Participation is Crucial!

Ask questions and participate in discussions in lectures

Get involved in the workshops

Think how to use DSGE models in your policy analysis work

Thanks!
