

## **Beginners' Training Programme in DSGE Modelling**

### **Overview**

This is a beginners' course for those with little or no knowledge but having keen interest in acquiring macroeconomic modelling skills particularly in the area of dynamic stochastic general equilibrium modelling (DSGE). The intention of NAMM is to train participants in a step-by-step manner towards becoming specialist model-builders. There are three stages. This course, therefore, is the First-Stage. The Second-Stage is the Intermediate Course while the Third-Stage will be the Advanced Course. The overall objective is to provide advanced evidence-based tool that will enable participants to make meaningful contributions to policy debates and greater insights in a complex macroeconomic environment occasioned by a world of uncertainties.

The "Beginners' Course" is designed for beginners who have had basic training in Macroeconomics but little or no knowledge in dynamic macroeconomic modelling. The main goal of this Stage 1 is to provide the building blocks for the construction, simulation and estimation of Dynamic Stochastic General Equilibrium (DSGE) models and appraise their usefulness for policy analysis.

### **Course objectives**

The Nigerian economy is yearning for institutions designed to train experts in macroeconomics policy modelling. This is one of the goals of NAMM. Therefore, the main objective of the proposed training programme is to train participants in macroeconomic model building. The specific objectives include the following: to

- teach the theoretical foundations of DSGE models and how they relate to current policy issues;
- instruct participants of the rudiments in modelling Dynamic Stochastic General Equilibrium Model (DSGEs);
- educate them in the use of Dynare as a software for solving, simulating, estimating and forecasting DSGE models;
- implement basic computational approach to analyse dynamic models, showing how the model economies respond to different shocks;

- understand how to extend simple models to answer more complex macroeconomic questions associated with policy: monetary and fiscal; and
- develop participants' skills at analysing dynamic models.

**Expected Audience:**

Researchers, Postgraduate Students, Policy-makers and Industry-Practitioners and Management Consultants. Open to those who are genuinely interested in DSGE modelling.

**Analytical Software Requirement:**

Participants are expected to install MATLAB and DYNARE Software on their laptops. This workshop covers the beginners' course on dynamic stochastic general equilibrium (DSGE) modelling useful in carrying out empirical analysis of contemporary macroeconomic techniques for economic, financial and business cycle fluctuations.

**Benefits of the Course**

There are many benefits accruable to participants of the workshops as follow:

- i) Opportunity to sharpen skills in modern macroeconomic modelling;
- ii) Provide Mentoring assistance;
- iii) Creating environment for Networking and knowledge sharing;
- iv) Exposure to best practices in the industry; and
- v) Deep insight into the workings of the economy.

**Learning Outcomes:**

After successful completion of the programme, attendees will have strong foundational knowledge about the various steps and procedures required for DSGE modelling. The class of Dynamic Stochastic General Equilibrium (DSGE) models considered in which households, firms, the monetary authorities, fiscal authorities and the rest of the world interact in a unified modelling framework. These models typically involve forward looking behaviours. They have become the workhorse models for policy analysis at central banks, monetary and non-monetary international institutions as well as other areas of research including Agriculture, International Trade, Environment etc.

**Pre-requisites:**

Interests in macroeconomic models as well as basic understanding of economic principles. Basic programming skills in MATLAB or comparable languages are recommended, but not necessary.

### **Structure and Duration of the Course**

The course runs over a series of two consecutive weekends: two afternoons: Thursday and Friday and a full day: Saturday. It is broken into 12 Sessions. This training runs between September 15-17 and September 22-24, 2022. The training will begin with theoretical underpinnings of DSGE modelling. We would systematically move to the practical exercises using DYNARE software in a MATLAB environment to solve, simulate, estimate and forecast the dynamic models following what was learnt in the theoretical aspects. The facilitators will be available throughout the duration of the course to answer any questions or queries that may arise. Since the training is Online, we encourage sharing of contacts among participants so that they can share ideas and concerns.

### **Pre-readings**

Some pre-course readings will be recommended ahead for those participants who wish to prepare in advance. The issues involved in the pre-reading will be subject of discussion during the course. Therefore, there is no need to understand everything. The pre-reading is to get as participants acquainted with what is to come during the training sessions.