Training Course on Econometric Methods for Central Bank Analysis

Professional Development Training Course Outline

Category	Banking Institute	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today’s data-driven economic landscape, central banks rely heavily on econometric methods to enhance their policy formulation, macroeconomic forecasting, and monetary analysis. Training Course on Econometric Methods for Central Bank Analysis is expertly designed to equip professionals with robust analytical tools and hands-on techniques for interpreting economic data and informing decision-making. Participants will gain practical insights into dynamic modeling, time series analysis, structural vector autoregressions, and forecasting methods tailored to real-world central banking applications.

With an increasing need for evidence-based policymaking, this training course bridges the gap between econometric theory and central bank practice. Using real data and central bank case studies, participants will learn how to apply advanced econometric methods for evaluating monetary policy effects, inflation dynamics, financial stability risks, and GDP forecasting. This course offers a practical, interactive, and data-centric approach, combining conceptual clarity with hands-on exercises to ensure real-time impact.

Programme Curriculum

Training Course on Econometric Methods for Central Bank Analysis

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Corse Objectives

1. Understand the role of econometrics in central bank policy analysis
2. Master time series econometrics for macroeconomic forecasting
3. Learn stationarity and cointegration techniques for policy modeling
4. Apply VAR, SVAR, and VECM models in monetary policy studies
5. Interpret impulse response functions and variance decomposition
6. Develop skills in forecasting inflation and output gaps
7. Utilize panel data models for cross-country monetary studies
8. Analyze macroeconomic shocks using structural models
9. Model interest rate dynamics and yield curves
10. Conduct nowcasting and real-time economic projections
11. Evaluate financial stability using high-frequency data
12. Learn software-based econometric techniques (EViews, Stata, R)
13. Integrate empirical evidence into monetary and fiscal policy decisions

Target Audience

1. Central bank economists
2. Financial analysts in government institutions
3. Policy advisors and strategists
4. Econometrics and data science professionals
5. Academic researchers in monetary economics
6. Ministry of Finance and Treasury officers
7. Risk analysts in regulatory agencies
8. Economic consultants and think tanks

Course Duration: 10 days

Course Modules

Module 1: Introduction to Econometrics in Central Banking

- Overview of econometric modeling
- Relevance of econometrics for central banks
- Key economic indicators for analysis
- Data sources and data transformation
- Introduction to EViews and Stata
- **Case Study:** Using CPI data for basic regression analysis

Module 2: Time Series Data and Stationarity

- Understanding time series data
- Testing for stationarity (ADF, KPSS)
- Unit root problems in macro data
- Log transformation and differencing
- ARIMA and model selection
- **Case Study:** Stationarity testing of GDP time series

Module 3: Vector Autoregression (VAR) Modeling

- Structure and estimation of VAR
- Lag length selection
- Forecasting with VAR
- Shock transmission and feedback
- Limitations and model stability
- **Case Study:** VAR model of interest rate and inflation

Module 4: Structural VAR (SVAR) and Identification

- The need for structural identification
- Short-run and long-run restrictions
- Estimation and impulse response
- Policy implications from SVAR
- Structural interpretation of shocks
- **Case Study:** SVAR analysis of monetary policy shocks

Module 5: Cointegration and Error Correction Models

- Concept of cointegration
- Engle-Granger and Johansen methods
- VECM modeling framework
- Short-run vs long-run dynamics
- Estimating speed of adjustment
- **Case Study:** VECM model for exchange rates and inflation

Module 6: Panel Data Econometrics for Cross-Country Analysis

- Structure of panel data
- Fixed vs random effects
- Dynamic panel models
- Endogeneity and GMM
- Model diagnostics
- **Case Study:** Panel analysis of inflation targeting countries

Module 7: Impulse Response Functions & Forecast Error Decomposition

- What are IRFs and FEVDs?
- Economic interpretation of IRFs
- Forecast error variance decomposition
- Confidence intervals in IRFs
- Dynamic responses to shocks
- **Case Study:** IRF of unemployment to interest rate shocks

Module 8: Inflation and Output Forecasting

- Forecasting methods (univariate, multivariate)
- ARIMA, VAR, and Bayesian models
- Forecast evaluation metrics
- Model selection criteria
- Forecast combination techniques
- **Case Study:** Monthly inflation forecast using ARIMA

Module 9: High-Frequency Data Analysis and Real-Time Forecasting

- Handling high-frequency economic data

- Mixed-frequency modeling (MIDAS)
- Real-time data revisions
- Nowcasting principles
- Real-time decision-making
- **Case Study:** Real-time GDP nowcasting for policy planning

Module 10: Yield Curve Modeling and Term Structure Analysis

- Introduction to the yield curve
- Nelson-Siegel and Diebold-Li models
- Fitting yield curve models
- Interest rate term structure
- Link to monetary policy expectations
- **Case Study:** Yield curve shifts post-policy rate changes

Module 11: Monetary Policy Transmission Mechanism

- Channels of monetary transmission
- Estimating policy effectiveness
- Credit, exchange rate, and asset price channels
- Time lag in transmission
- Role of financial conditions
- **Case Study:** Analyzing ECB's policy impact via VAR

Module 12: Structural Breaks and Regime Shifts

- Identifying structural breaks
- Chow test, Bai-Perron techniques
- Time-varying parameter models
- Regime-switching econometrics
- Policy interpretation of breaks
- **Case Study:** Structural break analysis during 2008 crisis

Module 13: Risk Modeling and Financial Stability

- Econometric tools for risk modeling
- Credit and liquidity risk models
- Systemic risk measurement
- Stress testing using macro models
- Forecasting financial crises
- **Case Study:** Modeling financial risk in emerging markets

Module 14: Software Implementation: EViews, R, and Stata

- Introduction to coding and syntax
- Data handling and transformation
- Running regressions and diagnostic tests
- Graphical outputs and automation
- Exporting and reporting results
- **Case Study:** Replicating a central bank model in Stata

Module 15: Policy Simulation and Scenario Analysis

- Introduction to simulation models
- Shock scenario design
- Policy rule simulations

- Counterfactual analysis
- Evaluating policy alternatives
- **Case Study:** Simulating policy response to oil price shock

Training Methodology

- Expert-led live lectures with visual demonstrations
- Practical hands-on sessions with econometric software
- Real-world datasets and replication exercises
- Guided case study walkthroughs per module
- Pre- and post-assessment to evaluate learning progress
- Interactive Q&A, group assignments, and policy labs

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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