

BFM115 FINANCIAL ECONOMETRICS

Academic Year 2012/13

Number of Aston Credits: 15

Number of ECTS Credits: 7.5

Staff Member Responsible for the Module:

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Availability: See 'office hours'

Or contact the Finance, Accounting & Law Group Administrator:
Mrs Rosaleen Shirley, Room ABS404, Extension: 3238

Pre-requisites for the Module:

Students must be registered for MSc Finance and Investments

Module Objectives and Learning Outcomes:

This module provides an understanding of the latest econometric techniques that have been applied to modelling financial markets. The module will explore further topics in regression analysis and introduce time series models of returns and financial market volatility. On completion of this module, students should be able to:

- > Understand the essential foundations of time series models
- > Estimate, test and evaluate ARIMA models
- > Explain and apply models of financial return volatility
- > Understand how to infer and utilize information from option prices
- > Construct and evaluate forecast models for financial time-series
- > Understand, estimate and test Value-at-Risk and Expected Shortfall models
- > Construct and evaluate forecast models for financial time-series

Method of Teaching:

Formal class contact will consist of a three-hour lecture per week for 10 weeks. The lectures will be the initial mode of delivery of the knowledge required to achieve the learning outcomes. In addition, the students will be assigned into study groups to

work through practical problems in the computer labs. In addition to formal class contact hours, students are expected to follow the suggested learning hours guide, in allocating time for private study.

Method of Assessment:

This module will be assessed by a piece of coursework, specifically, the analysis of a financial time series, that will be due in Week 10 of Term 2. This is consistent with the learning objectives of the module.

Module Content:

- Week 1:** Introduction and Mathematical Review
- Week 2:** Univariate Time Series: Autoregressive and Moving Average Models
- Week 3:** Software Training
- Week 4:** ARCH, GARCH and GARCH-M Models
- Week 5:** Software Training
- Week 6:** The Econometrics of Option Markets I
- Week 7:** The Econometrics of Option Markets II
- Week 8:** Software Training
- Week 9:** Value-at-Risk and Expected Shortfall Models
- Week 10:** **Assessment**

International Dimensions:

In the presence of global financial markets, the study of finance and investments naturally transcends national boundaries. Quantitative methods are applicable regardless of setting, and this module will involve the analysis of financial variables from a variety of countries

Corporate Connections:

The module will draw on the experience of investment professionals wherever possible.

Contribution of Research:

The material of this module will be closely linked to the most recent development in the empirical finance and financial econometrics literature. Empirical exercises and projects will enable students to conduct applied financial market research.

Ethics, Responsibility & Sustainability:

During the course the students will be exposed to models that measure investment risk in financial institutions, as well as risk monitoring techniques used by policy makers and central banks to ensure financial stability and robust economic growth.

Learning Hours:

Contact hours	30
Further private study	120
Total	150

The following essential and recommended readings are subject to change. Students should not therefore purchase textbooks prior to commencing their course. If students wish to undertake background reading before starting the course, many of the chapters/readings are available in electronic form via on-line library catalogues and other resources

Essential Reading:

Taylor, Stephen J., *Asset Price Dynamics, Volatility, and Prediction*. Princeton University Press.

DeFusco, R.A., D.W. McLeavey, J.E. Pinto and D. E. Runkle. *Quantitative Methods For Investment Analysis, 2nd ed.* Baltimore: CFA Institute, 2004.



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Other Readings:

Brooks, C., *Introductory Econometrics for Finance*, Cambridge University Press

Campbell, J., A. Lo and C. MacKinlay, *The Econometrics of Financial Markets*, Princeton University Press



For further information on any of the opportunities that Aston Business School offers, please contact:

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