Empirical Finance

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July 2019

Course Aims and Objectives

Econometric methods in finance have become vitally important to professionals in the financial markets. This course of lectures aims to introduce you to these empirical methods applied to financial market data.

On successful completion of this course you should:

- understand how and why financial market data differ from typical economic data,
- be aware of empirical models and econometric methods used to interpret and understand financial market data.

Course Outline

1. What's Special about Financial Market Data?
   Definitions, stochastic processes, statistical models
2. Stylized Facts for Financial Returns
   Summary statistics, calendar effects, the distribution of returns
3. Are Asset Price Changes Predictable?
   The random walk hypothesis, variance ratio tests, further tests
4. Trading Rules and Market Efficiency
   Examples of trading rules, evaluating returns predictability
5. Understanding and Modelling Volatility I
   Measuring volatility, modelling volatility: GARCH
6. Understanding and Modelling Volatility II
   Stochastic volatility, implied volatility
7. High-Frequency Data and Models
   Stylized facts for intraday returns, realized volatility
8. Forecasting Volatility
   Evaluating alternative volatility forecasts

The final selection of topics will be determined by time and interest.

Course References

Chris Brooks, *Introductory Econometrics for Finance*, Cambridge University Press, 4th edition, 2019.

Oliver Linton, *Financial Econometrics: Models and Methods*, Cambridge University Press, 2019.

Stephen J. Taylor, *Asset Price Dynamics, Volatility, and Prediction*, Princeton University Press, 2005.