Universidad de los Andes
Facultad de Economía

Financial Economics

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Dates
July 1 - 18

Purpose

This course serves two functions. First, it provides students with a thorough coverage of the economic principles of asset pricing and market microstructure. It introduces students to advanced finance theory that forms the foundation of modern finance. It provides the necessary background to conduct research. Second, the course offers students with hands-on experience of using computable pricing models to analyze and price modern financial instruments such as options.

Course Lecturers

First week: Alvaro J. Riascos
Second and Third week: Dr. Dimitrios P. Tsomocos

Assessment Method

There will be three problem sets, one every week.

Course Texts

T. Copeland and J. Weston (1992), Financial Theory and Corporate Policy, Addison Wesley. A good mixture of theory and evidence.

J-P Danthine and J. Donaldson (2002), Intermediate Financial Theory, Prentice Hall

C.- F Huang and R.H. Litzenberger (1988), Foundations of Financial Economics , Prentice Hall

J. Hull (2003), Options, Futures and Other Derivatives, Prentice Hall.

J. Ingersoll (1987), Theory of Financial Decision Making, Rowman and Littlefield.

(*) S.F. Le Roy and J. Werner (2001), Principles of Financial Economics, Cambridge University Press.

WEEK 1

- **LECTURE # 1 : Equilibrium and arbitrage in security markets**

- fundamental theorem of finance
- MM I and II
- general equilibrium with incomplete markets

Additional readings:

- Dybvig, P. and Ross, S.A. 1987. "Arbitrage." In M. Milgate, J. Eatwell, and P. Newman, eds., *The New Palgrave: A Dictionary in Economics*. McMillan.
- Dybvig, P. and Ross, S.A. 2003. "Arbitrage, State Prices and Portfolio Theory." In G.M. Constantinides, M. Harris and R. Stulz, eds., *Handbook of the Economics of Finance*. Elsevier.
- Ross, Stephen A. 1975. "Return, Risk and Arbitrage." In Irwin Friend and J. Bicksler, eds., *Studies in Risk and Return*. Cambridge, Mass.: Ballinger Publishing Co.
- Varian, H.R. 1987. "The Arbitrage Principle in Financial Economics," *Journal of Economic Perspectives,* 1:55-72.

- **LECTURE # 2 : Equilibrium and arbitrage in security markets (ctd)**

- welfare theorems
- constrained inefficiency

Additional readings:

- Dybvig, P. and Ross, S.A. 1987. "Arbitrage." In M. Milgate, J. Eatwell, and P. Newman, eds., *The New Palgrave: A Dictionary in Economics*. McMillan.
- Dybvig, P. and Ross, S.A. 2003. "Arbitrage, State Prices and Portfolio Theory." In G.M. Constantinides, M. Harris and R. Stulz, eds., *Handbook of the Economics of Finance*. Elsevier.

- Ross, Stephen A. 1975. “Return, Risk and Arbitrage.” In Irwin Friend and J. Bicksler, eds., *Studies in Risk and Return*. Cambridge, Mass.: Ballinger Publishing Co.
- Varian, H.R. 1987. “The Arbitrage Principle in Financial Economics,” *Journal of Economic Perspectives*, 1:55-72.

- **LECTURE # 3 : Valuation**

- state prices and risk-neutral probabilities
- spanning
- options and efficiency
- dynamic completion

Additional readings:

- Geanakoplos, J.D. 1990. “An Introduction to General Equilibrium with Incomplete Asset Markets,” *Journal of Mathematical Economics*, 19:1-38.
- Ross, S.A. 1976. “Options and Efficiency,” *Quarterly Journal of Economics*, 90: 75-89.

- **LECTURE # 4: Risk and optimal portfolios**

- expected utility and risk aversion
- Insurance and certainty equivalent

Additional readings:

- Arrow, K.J. 1970. Essays in the Theory of Risk-Bearing. Amsterdam: North-Holland.
- Lucas, R.E. 1978. “Asset Pricing in an Exchange Economy,” *Econometrica*, 46:1429-1445.
- Rothschild, M., and Stiglitz, J.E. 1970. “Increasing Risk: I. A Definition,” *Journal of Economic Theory*, 2:225-243.
- Rothschild, M., and Stiglitz, J.E. 1971. “Increasing Risk: II. Its Economic Consequences,” *Journal of Economic Theory*, 3:66-84.

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WEEK 2-3

- **LECTURE # 5: Risk and optimal portfolios**

  - Lucas Model

Additional readings:

- Arrow, K.J. 1970. Essays in the Theory of Risk-Bearing. Amsterdam: North-Holland.
- Lucas, R.E. 1978. “Asset Pricing in an Exchange Economy,” *Econometrica*, 46:1429-1445.
- Rothschild, M., and Stiglitz, J.E. 1970. “Increasing Risk: I. A Definition,” *Journal of Economic Theory*, 2:225-243.
- Rothschild, M., and Stiglitz, J.E. 1971. “Increasing Risk: II. Its Economic Consequences,” *Journal of Economic Theory*, 3:66-84.

- **LECTURE # 6: Equilibrium prices and allocations**

  - portfolio theory
  - mutual fund, SML, efficiency theorem

Additional readings:

- Geanakoplos, J. and Shubik M. 1990. "The Capital Asset Pricing Model as a General Equilibrium with Incomplete Markets." *The Geneva Papers on Risk and Insurance Theory* , 15(1): 55-71
- Huberman, G. 1982. “A Simple Approach to Arbitrage Pricing Theory,” *Journal of Economic Theory*, 28: 183-91.
- Markowitz, H.M. 1952. “Portfolio Selection,” *Journal of Finance*, 7:77-91
- Mossin, J. 1965. “Equilibrium in a Capital Asset market,” *Econometrica*, 34(4):768-783.
- Sharpe, W.F.1964. “Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk,” *Journal of Finance*, 19(3):425-442.
- Tobin, J. 1958. “Liquidity Preference as Behaviour Towards Risk,” *Review of Economic Studies*, 26:65-86.

- **LECTURE # 7: Equilibrium prices and allocations (ctd)**

  - factor pricing
  - A.P.T.

Additional readings:

- Geanakoplos, J. and Shubik M. 1990. "The Capital Asset Pricing Model as a General Equilibrium with Incomplete Markets." *The Geneva Papers on Risk and Insurance Theory* , 15(1): 55-71
- Huberman, G. 1982. "A Simple Approach to Arbitrage Pricing Theory," *Journal of Economic Theory*, 28: 183-91.
- Markowitz, H.M. 1952. "Portfolio Selection," *Journal of Finance*, 7:77-91
- Mossin, J. 1965. "Equilibrium in a Capital Asset market," *Econometrica*, 34(4):768-783.
- Sharpe, W.F.1964. "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk," *Journal of Finance*, 19(3):425-442.
- Tobin, J. 1958. "Liquidity Preference as Behaviour Towards Risk," *Review of Economic Studies*, 26:65-86.

- **LECTURE # 8** : **Mean – Variance analysis**

  - Mean variance frontier analysis
  - CAPM
  - Factor pricing

Additional readings:

- Geanakoplos, J. and Shubik M. 1990. "The Capital Asset Pricing Model as a General Equilibrium with Incomplete Markets." *The Geneva Papers on Risk and Insurance Theory* , 15(1): 55-71
- Cox, J., Ross S.A. and Rubinstein, M. 1979. " Option Pricing: A Simplified Approach," *Journal of Financial Economics*, 7: 229-63.
- Mehra, R. and Prescott, E.C. 1985. "The Equity Premium: A Puzzle," *Journal of Monetary Economics*, 15: 145-161.
- Polemarchakis, H.M., and Bon-Il Ku.1990. "Options and Equilibrium," *Journal of Mathematical Economics*, 19:107-112.

- **LECTURE # 9 : Class on lectures 1-8**

- **LECTURE # 10 : The informational role of prices and rational expectations equilibria (REE) (HO)**

  - REE: Concept and problems
  - Aggregation and transmission of information
  - Dynamic models
  - Crashes

- No-trade theorems

Additional readings:

- The informational role of prices and rational expectations equilibria (REE)
  Books: Grossman (1989), Brunnermeier (2001)
  - REE: Concept and problems
    Grossman (1976),
    Grossman (1981),
    Jordan and Radner (1982),
    Milgrom and Stokey (1982)
  - Aggregation and transmission of information
    Grossman (1976),
    Grossman and Stiglitz (1980),
    Hellwig (1980),
    Admati (1985)
  - Information acquisition
    Grossman and Stiglitz (1980),
    Diamond and Verrecchia (1981),
    Verrecchia (1982),
    Admati and Pfleiderer (1990)
  - Dynamic models
    Brown and Jennings (1989),
    Grundy and McNichols (1989),
    He and Wang (1995),
  - Crashes
    Genotte and Leland (1990),
    Romer (1993)

- **LECTURE # 11 : Strategic trading**
  - Canonical models of strategic trading
  - Temporary liquidity shocks, liquidation risk, predatory trading
  - Funding constraints, flight to quality, bank runs, corporate sector, productivity
  - Counterparty risk, insider trading

Additional readings:

Books: Brunnermeier (2001)

Surveys: Amihud, Mendelson, and Pedersen (2005), Biais, Glosten, and Spatt (2005), Madhavan (2000), Stoll, (2003), Shleifer and Summers (1990), Scheinkman and Xiong (2004)

- Order driven markets
  Kyle (1985)
- Quote driven markets
  Glosten and Milgrom (1985),

Easley and O'Hara (1987

- Temporary liquidity shocks, liquidation risk, predatory trading

Grossman and Miller (1988),
Huang (2003),
Brunnermeier and Pedersen (2005)

- Funding constraints, flight to quality, bank runs, corporate sector, productivity

Brunnermeier and Pedersen (2005),
Vayanos (2004),
Diamond and Dybvig (1983),
Holmstrom and Tirole (2001),
Eisfeldt (2004)

- Counterparty risk, insider trading

Gallmeyer, Hollifield, and Seppi (2004),
Fishman and Hagerty (1995)

- **LECTURE # 12 : Class on lectures 10-11**

  - Answers to hwk
  - Extensions of the Kyle (1985) model
  - Extensions of the Grossman (1976) and Hellwig (1980) models
  - Information acquisition

Additional readings:

- Grossman (1976)
- Grossman and Stiglitz (1980)
- Hellwig (1980)
- Kyle (1985)