

# Finance Theory

ECON 870/ MGT 820/ MGT 920

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This course covers the theory of a competitive economy under uncertainty, asset pricing, optimal portfolio decision-making and the basic elements of corporate finance without frictions. In particular the course will consider the CAPM, Arbitrage pricing and the APT, the Consumption CAPM, Martingale pricing theory, elementary interest rate models with and without default risk, and basic Derivative pricing theory in discrete time. There will be a brief introduction to the asset pricing with illiquidity; and a brief introduction to the underlying causes of the Financial Crisis.

I will post interesting and relevant academic and media articles on the course website as the term progresses.

**Assessment:** Midterm 50%, Final 50%

## Texts:

J-P. Danthine and J.D. Donaldson, *Intermediate Financial Theory*, (second edition), Academic Press, 2005

Frank Milne *Finance theory and Asset Pricing*, (second edition) Oxford University Press 2003.

## Advanced References:

Other more advanced references that may be used in class or consulted on specific topics. C-F. Huang and R. Litzenberger, *Foundations for Financial Economics*, North Holland, 1988.

Mas-Colell, Whinston and Green, *Microeconomic Theory*, OUP, 1995.

N. Bingham and R. Keisel, *Risk-Neutral Valuation*, Springer, 1998

G. Constantinides, Harris and Stulz (eds.) *Handbook of the Economics of Finance*, Elsevier, 2003.

R. Jarrow and S. Turnbull, *Derivative Securities*, second edition. 2000.

R. Jarrow, *Modelling Fixed Interest Securities*, second edition, 2002.

S. Shreve, *Stochastic Calculus for Finance 1: The Binomial Asset Pricing Model*, Springer, 2004.

V. Acharya and M. Richardson, *Restoring Financial Stability*, Wiley, 2009

## Topics:

1. **A Brief History of Finance Theory and Introduction to the Theory:**  
Milne Ch. 1. DD Ch.1
2. **Basic General Equilibrium Theory and Asset Pricing Theory Ideas:**

- DD Ch.1 Appendix; Ch.2
- 3. Expected Utility theory and Risk Aversion:**  
DD Ch. 3,4  
(A) Mas-Colell et al, Ch., 6 Sections 6.A-E  
(A) Huang and Litzenberger, Chs.1,2.
  - 4. Risk Aversion and Investment Decisions:**  
DD 5.
  - 5. Portfolio Theory:**  
DD Chs. 6.  
(A) Huang and Litzenberger, Ch.3.
  - 6. CAPM:**  
DD Ch. 7.  
(A) Huang and Litzenberger, Ch.4.
  - 5 Arrow Debreu Pricing:**  
DD Ch 8. Milne Ch.2
  - 6 Incomplete Markets with Production and the Modigliani-Miller Theorem:**  
DD Ch 15. Milne Ch 3.
  - 7 Arbitrage and Asset Pricing: Induced Preferences:**  
DD. Ch. 13, Milne Ch 4.
  - 8. Representative Consumers**  
Milne Ch 6.  
(A) Huang and Litzenberger, Ch.6.
  - 9. The Multieriod Consumption, the Consumption Capital Asset Pricing Model (CCAPM) and the Equity Premium Puzzle:**  
DD Ch. 9, 14  
(A) Huang and Litzenberger, Ch.8.
  - 10. Diversification and Asset Pricing:**  
Milne Ch. 7. DD Ch. 13
  - 11. Options and Complete Markets:**  
DD Ch.10.
  - 12. Martingale Measures in Discrete Time 1:**  
DD Ch. 11 Milne Ch. 5, 8.  
(A) Huang and Litzenberger, Ch.7
  - 13. Martingale Measures in Discrete Time 2:**  
DD Ch. 12 Milne Chs. 9,10.  
R.Jarrow and S.Turnbull, Chs.15,18.  
S. Shreve (for a thorough discussion of the binomial model in all its variations.)  
(A) R. Jarrow, *Modelling Fixed Interest Securities*.  
Bingham and Kiesel, Ch.4.
  - 13. Asset Pricing Models with Liquidity:**  
Y. Amihud, H.Mendelson and L.Pedersen, "Liquidity and Asset Prices",  
**Foundations and Trends in Finance**, Vol 1, No.4, 2005, 269-364.  
V.Acharya and L.Pedersen, "Asset Pricing with Liquidity Risk", **Journal of Financial Economics**, 2005, 77, 375-410.

D. Vayanos and J. Wang, Market Liquidity: Theory and Empirical Evidence, Theory , *Handbook of the Economics of Finance*, forthcoming.

**14. The Financial Crisis and Risk Management:**

F.Milne, “Anatomy of the Credit Crisis: The Role of Faulty Risk Management Systems”, C.D.Howe Institute Commentary, no.269, July, 2008.

F.Milne, “The Complexities of Financial Risk Management and Systemic Risks”, **Bank of Canada Review**, Summer, 2009, 15-29.

(A) V.Acharya and M.Richardson, “Prologue: A Bird’s-Eye View”, provides an excellent overview of the issues. The rest of the book deals with detailed analyses of various aspects of the Crisis.