

## Master 104 – Asset Pricing

### Instructor

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### Overview

In this course, we will discuss a wide range of topics ranging from no arbitrage, state prices, consumption-based asset pricing, and factor models to more special topics including asymmetric information and behavioral finance.

### Evaluation

Final exam: 60%. Theory assignment: 20%. Empirical assignment: 20%.

### Syllabus

1. Decision Making under Uncertainty
2. Consumption-based Asset Pricing
3. Stochastic Discount Factor
4. Mean-Variance Analysis and the CAPM
5. Arbitrage Pricing Theory and Factor Models
6. Estimation and Evaluation of Asset Pricing Models
7. Dynamic Asset Pricing

#### **And if time permits**

8. Illiquidity and Asset Prices
9. Asymmetric Information and Asset Prices
10. Limits to Arbitrage
11. Behavioral Asset Pricing

## Textbooks

- Cochrane, John H., Asset Pricing, Princeton University Press, revised ed., 2005.
- Back, Kerry E., Asset Pricing and Portfolio Choice Theory, Oxford University Press, revised edition, 2017.

## Readings

### 1. Decision Making under Uncertainty:

Back, chapter 1.

Morgenstern, Oskar and John von Neumann (1944), Theory of Games and Economic Behavior, Princeton University Press.

Pratt, John W. (1964), Risk Aversion in the Small and in the Large, *Econometrica*, 32, 122-136.

Rothschild, Michael and Joseph E. Stiglitz (1970), Increasing Risk I: A Definition, *Journal of Economic Theory*, 2, 225-243.

### 2. Consumption-based Asset Pricing:

Cochrane, chapter 3. Back, chapters 2 and 4.

Arrow, Kenneth J. and Gerard Debreu (1954), Existence of an Equilibrium for a Competitive Economy, *Econometrica*, 22, 265-290.

### 3. Stochastic Discount Factor

Cochrane, chapter 4. Back, chapter 3.

### 4. Mean-Variance Analysis and the CAPM:

Cochrane, chapters 5 and 9. Back, chapters 5 and 6.

Markowitz, Harry (1952), Portfolio Selection, *Journal of Finance* 7, 77-91.

Lintner, John (1965), The Valuation of Risky Asset and the Selection of Risky Investments in Stock Portfolios and Capital Budgets, *Review of Economics and Statistics* 47, 13-37.

Sharpe, William (1964), Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk, *Journal of Finance* 19, 425-442.

Black, Fisher (1972), Capital Market Equilibrium with Restricted Borrowing, *Journal of Business* 45, 444-454.

### 5. Arbitrage Pricing Theory and Factor Models:

Cochrane, chapters 6 and 9. Back, chapter 6.

Ross, Stephen A. (1976), The Arbitrage Theory of Capital Asset Pricing, *Journal of Economic Theory* 13, 341-360.

Fama, Eugene F. and Kenneth R. French (1993), Common Risk Factors in the Returns on Stocks and Bonds, *Journal of Financial Economics* 33, 3-56.

Fama, Eugene F. and Kenneth R. French (1996), Multifactor Explanations of Asset Pricing Anomalies, *Journal of Finance* 51, 55-84.

## **6. Estimation and Evaluation of Asset Pricing Models**

Cochrane, part II.

## **7. Dynamic Asset Pricing:**

Back, chapters 8–11.

Merton, Robert (1973), An Intertemporal Capital Asset Pricing Model, *Econometrica* 41, 867-887.

Lucas, Robert (1978), Asset Prices in an Exchange Economy, *Econometrica*, 46, 1429-1445.

Breeden, Douglas T. (1979), An Intertemporal Asset Pricing Model with Stochastic Consumption and Investment Opportunities, *Journal of Financial Economics*, 7, 265-296.

Campbell, John Y. and Robert J. Shiller (1988), The Dividend-Price Ratio and Expectations of Future Dividends and Discount Rates, *Review of Financial Studies*, 1, 195-228.

## **8. Illiquidity and Asset Prices:**

Acharya, Viral V. and Lasse Heje Pedersen (2005), Asset pricing with liquidity risk, *Journal of Financial Economics*, 77, 375-410.

## **9. Asymmetric Information and Asset Prices:**

Grossman, Sanford J. and Joseph E. Stiglitz (1980), On the Impossibility of Informationally Efficient Markets, *American Economic Review*, 70, 393-408.

Hellwig, Martin F. (1980), On the Aggregation of Information in Competitive Markets, *Journal of Economic Theory*, 22, 477-498.

## **10. Limits to Arbitrage:**

De Long, J. Bradford, Andrei Shleifer, Lawrence H. Summers, and Robert J. Waldmann (1990), Noise Trader Risk in Financial Markets, *Journal of Political Economy*, 98, 703-738.

Shleifer, Andrei and Robert Vishny (1997), The Limits of Arbitrage, *Journal of Finance*, 52, 35-55.

Gromb, Denis and Dimitri Vayanos (2002), Equilibrium and welfare in markets with financially constrained arbitrageurs, *Journal of Financial Economics*, 66, 361-407.

Kondor, Peter (2009), Risk in Dynamic Arbitrage: The Price Effects of Convergence Trading, *Journal of Finance*, 64, 631-655.

Duffie, Darrell (2010), Presidential Address: Asset Price Dynamics with Slow-Moving Capital, *Journal of Finance*, 65, 1237-1267.

#### **11. Behavioral Asset Pricing:**

Barberis, Nicholas, and Wei Xiong (2009), What Drives the Disposition Effect? An Analysis of a Long-Standing Preference-Based Explanation, *Journal of Finance*, 64, 751-784.

Daniel, Kent, David Hirshleifer, and Avanidhar Subrahmanyam (1998), Investor psychology and security market under- and overreactions, *Journal of Finance*, 53, 1839-1885.

Hong, Harrison, and Jeremy C. Stein (1999), A unified theory of underreaction, momentum trading, and overreaction in asset markets, *Journal of Finance*, 54, 2143-2184.

Scheinkman, Jose A., and Wei Xiong (2003), Overconfidence and speculative bubbles, *Journal of Political Economy*, 111, 1183-1220.