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Rady School 0553

Economics 270

Financial Decisions

The first part of the course introduces the cornerstone of modern asset pricing, i.e. the pricing kernel or stochastic discount factor model. Standard theories of bond prices and exchange rates can be viewed as special cases of this model. This model serves as the benchmark for many subsequent topics, including performance evaluation models.

The second part of the course studies cross-sectional and time-series implications of the pricing kernel model for asset returns and reviews a variety of empirical asset pricing puzzles or anomalies. The third part of the course covers basic continuous time finance and option pricing, including the Black Scholes option pricing equation.

The course covers a broad range of topics and students are required to consult journal articles for additional readings. Some of the course material is covered in

Cochrane, J.H. (2005) *Asset Pricing* (revised edition) Princeton University Press.

Introductions to theory and empirical tests of asset pricing models are provided in

John Y. Campbell, Andrew W. Lo and A Craig MacKinlay (1997) *The Econometrics of Financial Markets*. Princeton University Press.
Christian Gourieroux and Joann Jasiak (2001) *Financial Econometrics. Problems, Models and Methods*. Princeton University Press.
Chi-fu Huang and Robert H. Litzenberger (1988) *Foundations for Financial Economics*. Prentice Hall.
George Pennachi (2008), Theory of Asset Pricing. Addison Wesley.

Additional recommended texts include

Thomas Bjork (1998) *Arbitrage Theory in Continuous Time*. Oxford University Press.
Michael U. Dothan (1990) *Prices in Financial Markets*. Oxford University Press.
Jonathan E. Ingersoll, Jr. (1987) *Theory of Financial Decision Making*. Rowman & Littlefield.
Robert C. Merton (1990) *Continuous-Time Finance*. Blackwell.
Salih N. Neftci (1996) *An Introduction to the Mathematics of Financial Derivatives*. Academic Press.
David C. Shimko (1992) *Finance in Continuous Time: A Primer*. Kolb.

I. Asset Pricing

Pricing Kernel/Stochastic Discount Factor model

Cochrane, 2005, chapters 1-4, pages 1-75.

Backus, D., S. Foresi and C. Telmer (1998), Discrete-time Models of Bond Pricing. NBER working paper 6736.

Backus, D., S. Foresi and C. Telmer, 2001, Affine Term Structure Models and the Forward Premium Anomaly. Journal of Finance 56, 279-304.

Background readings

Ang, Andrea and Monica Piazessi, 2003, A No-ArbitrageVector Autoregression of term structure dynamics with macroeconomic and latent variables. Journal of Monetary Economics 50, 745-787.

Arrow, Kenneth, 1964, The Role of Securities in the Optimal Allocation of Risk Bearing. Review of Economic Studies 31, pp. 91-96.

Debreu, Gerard, 1959, Theory of Value (New York: John Wiley and Sons), Chapter 7.

Dothan, Michael U., 1990, Prices in Financial Markets, Chapter 1, 2. Oxford University Press.

Harrison, J. Michael, and Kreps, David M., 1979, Martingales and Arbitrage in Multiperiod Securities Markets. Journal of Economic Theory, 20, 381-408. Read only pages 381-394.

Hart, Oliver, 1975, Some Negative Results on the Existence of Comparative Statics Results in Portfolio Theory, Review of Economic Studies 42, pp. 615-21.

Hart, Oliver, 1975, On the Optimality of Equilibrium when the Market Structure is Incomplete. Journal of Economic Theory, 11, 418-443.

Huang, Chi-fu, and Robert H. Litzenberger, 1988, Foundations for Financial Economics (Amsterdam: Elsevier Science Publishers) Chapter 5.

Mathematics of the Portfolio Frontier, Two Fund Separation

Campbell, John, Andrew Lo and Craig MacKinlay, 1997, The Econometrics of Financial Markets, chapter 5, pages 181-188.

Cochrane, John H, Asset Pricing, 2005, chapter 5, 6, pages 77-120.

Roll, Richard W., 1977, A Critique of the Asset Pricing Theory's Tests - Part I: On Past and Potential Testability of the Theory, Journal of Financial Economics, 4, pp. 129-176. Appendix only.

Background readings

Huang, Chi-fu, and Robert H. Litzenberger, 1988, Foundations for Financial Economics, chapters 3-4.

CAPM

Black, Fischer, 1972, Capital Market Equilibrium with Restricted Borrowing, Journal of Business, 45, pp 444 - 454.

Campbell, John, Andrew Lo and Craig MacKinlay, 1997, The Econometrics of Financial Markets, chapter 5, pages 188-218.

Cochrane, John, Asset Pricing, 2005, chapter 9, pages 149-183.

Huang, Chi-fu, and Robert H. Litzenberger, 1988, Foundations for Financial Economics, chapter 4.

Roll, Richard W., 1977, A Critique of the Asset Pricing Theory's Tests - Part I: On Past and Potential Testability of the Theory, Journal of Financial Economics, 4, pp. 129-176.

Roll, Richard, and Ross, Stephen A., 1994, On the Cross-sectional Relation between Expected Returns and Betas. Journal of Finance, 49, 101-122.

Factor Pricing Models

Campbell, John, Andrew Lo and Craig MacKinlay, 1997, The Econometrics of Financial Markets, chapter 6, pp. 219-222.

Cochrane, John, Asset Pricing, 2005, chapter 9, 149-183.

Huberman, G., 1983, A Simplified Approach to Arbitrage Pricing Theory. Journal of Economic Theory, 28, 1983-1991.

Ross, Stephen A., 1977, Risk, Return, and Arbitrage, in I. Friend and J.L. Bicksler (ed.), Risk and Return in Finance (Cambridge, Mass.: Ballinger).

Background readings

Connor, Gregory, and Korajczyk, Robert A., 1995, The Arbitrage Pricing Theory and Multifactor Models of Asset Returns. Pages 87-144 in Finance Handbook, edited by Robert Jarrow, Vojislav Maksimovic, and William Ziemba.

Gourieroux, and J. Jasiak (2001) Financial Econometrics. Ch. 9, 195-217.

Huang, Chi-fu, and Robert H. Litzenberger, 1988, Foundations for Financial Economics, chapter 4.

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

II. Empirical Modeling of Asset Prices

Empirical Evidence on the CAPM and the APT

Britten-Jones, M., 1999, The Sampling Error in Estimates of Mean-Variance Efficient Portfolio Weights. Journal of Finance 54, 655-671.

Campbell, John, Andrew Lo and Craig MacKinlay, 1997, The Econometrics of Financial Markets, chapter 6, pp. 222-251.

Chen, N-F, Richard W. Roll and Stephen A. Ross, 1986, Economic Forces and the Stock Market, Journal of Business 59, pp 383-403.

Harvey, C.R., Time-Varying Conditional Covariances in Tests of Asset Pricing Models, Journal of Financial Economics 24 (1989): 289-317.

Jagannathan, R. and T. Ma, 2003, Risk Reduction in Large Portfolios: Why imposing the wrong constraints helps. Journal of Finance 58, 1651-1684

Schwert, G.W., 2002, Anomalies and market efficiency. In George M. Constantinides, Milton Harris, Rene M. Stulz (eds) Handbook of the Economics of Finance. North Holland: Amsterdam.

Background readings

Black, Fischer, Michal C. Jensen, and Myron Scholes, 1972, The Capital Asset Pricing Model: Some Empirical Tests in M.C. Jensen, (ed.), Studies in the Theory of Capital Markets (New York: Praeger).

Bollerslev, Tim, Engle, Robert F., and Wooldridge, Jeffrey M., 1988, A Capital Asset Pricing Model with Time Varying Covariances. Journal of Political Economy, 96, 116-131.

Breeden, D.T., Gibbons, M.R. and Litzenberger, R.H., 1989, Empirical Tests of the Consumption-Oriented CAPM, Journal of Finance, pp 231-62.

Cochrane, John, Asset Pricing, 2005, chapters 12-16, 229-306.

Daniel, K. and S. Titman, 1997, Evidence on the Characteristics of Cross-Sectional Variation of Stock Returns. Journal of Finance 52, 1-33.

Fama, Eugene F., 1991, Efficient Capital Markets: II. Journal of Finance, 46, 1575-1617.

Fama, Eugene F. and French, Kenneth R., 1992, The Cross-Section of Expected Stock Returns, Journal of Finance 47, pp. 427-466.

Fama, Eugene F. and James D. MacBeth, 1973, Risk, Return, and Equilibrium: Empirical Tests. Journal of Political Economy 81, pp. 607-636.

Ghysels, Eric (1997) On Stable Factor Structures in the Pricing of Risk: Do Time Varying Betas Help or Hurt? Journal of Finance.

Huang, Chi-fu, and Robert H. Litzenberger, 1988, Foundations for Financial Economics, chapter 10.

Jegadeesh, N. and S. Titman, 1993, Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency. Journal of Finance 48, 65-92.

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Lehmann, Bruce N, Empirical Testing of Asset Pricing Models in J. Eatwell, M.Milgate and P. Newman (eds), New Palgrave Dictionary of Money and Finance (Oxford: Oxford University Press).

Patton, A. and A. Timmermann, 2007, Portfolio Sorts and Tests of Cross-sectional Patterns in Expected Returns. Mimeo, Oxford and UCSD.

Schwert, G. William, 1983, Size and Stock Returns and Other Empirical Regularities, Journal of Financial Economics 12, pp. 3-12.

Shanken, Jay, 1987, Multivariate Proxies and Pricing Relations: Living with the Roll Critique, Journal of Financial Economics 18 (March), pp. 91-110.

The Present Value Model

Bansal, Ravi and Amir Yaron, 2004, Risks For The Long Run: A Potential Resolution Of Asset Pricing Puzzles, Journal of Finance, 1481-1509.

Campbell, John, Andrew Lo and Craig MacKinlay, 1997, The Econometrics of Financial Markets, chapter 7, pp. 253-290.

Cochrane, J., 2007, The Dog that Did not Bark: A Defense of Return Predictability. Forthcoming in Review of Financial Studies.

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Campbell, J.Y. and R., Shiller, 1988, The Dividend Price Ratio and Expectations of Future Dividends and Discount Factors, Review of Financial Studies, 1, 195-228.

Predictability of Returns

Balvers, R.J., Cosimano, T.F. and B. MacDonald, 1990, Predicting stock returns in an efficient market. Journal of Finance 45, 1109-28.

Campbell, J.Y. and S. Thompson, 2005, Predicting the Equity Premium Out of Sample: Can Anything Beat the Historical Average? Forthcoming in Review of Financial Studies.

Goyal, A. and I. Welch, 2003, Predicting the equity premium with dividend ratios. Management Science 49, 639-654.

Lettau, M. and S. Ludvigson, 2001, Consumption, aggregate wealth, and expected stock returns. Journal of Finance 56, 815-850.

Pesaran, M.H. and A. Timmermann, 1995, Predictability of Stock Returns: Robustness and Economic Significance. Journal of Finance 50, 1201-1228.

Schwert, G.W., 2002, Anomalies and market efficiency. In George M. Constantinides, Milton Harris, Rene M. Stulz (eds) Handbook of the Economics of Finance. North Holland: Amsterdam.

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Ang, A. and G. Bekaert, 2007, Stock return predictability: Is it there? Forthcoming in Review of Financial Studies.

Cenesizoglu, T. and A. Timmermann, 2007, Predictability of Quantiles of Returns. Mimeo, HEC Montreal and UCSD.

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Ferson, W.E., S. Sarkissian and T. T. Simin, 2003, Spurious Regressions in Financial Economics? Journal of Finance 58, 1393-1414.

Poterba, J.M. and L.H. Summers, 1988, Mean Reversion in Stock Prices: Evidence and Implications. Journal of Financial Economics 22, 27-60.

Timmermann, A. and C.W.J. Granger, 2004, Efficient Market Theory and Forecasting. International Journal of Forecasting 20, 15-27.

Event Study Analysis

Campbell, John, Andrew Lo and Craig MacKinlay, 1997, The Econometrics of Financial Markets, chapter 4, pp. 149-180.

Edderington, L.J. and J.H. Lee, 1993, How Markets Process Information: News Releases and Volatility. Journal of Finance 48, 1161-1191.

Portfolio Performance Measurement

Berk, Jonathan, and Richard C. Green, 2004, Mutual Fund Flows and Performance in Rational Markets. Journal of Political Economy 2004, 1269-1295.

Carhart, M., 1997, On Persistence in Mutual Fund Performance, Journal of Finance, 52, 57-82.

Farnsworth,H. W. Ferson, D. Jackson and S. Todd, 2002, Performance Evaluation with Stochastic Discount Factors. Journal of Business, 473-504.

Ferson, Wayne E., and Schadt, Rudi W., 1996, Measuring Fund Strategy and Performance in Changing Economic Conditions. Journal of Finance, 51, 425-462.

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Kosowski, R., A. Timmermann, H. White and R. Wermers, 2006, Can Mutual Fund Stars Really Pick Stocks? New Evidence from a Bootstrap Analysis. Journal of Finance 61(6), 2551-2595.

Lehmann, B. and A. Timmermann, 2007, Performance Measurement and Evaluation. Mimeo, UCSD.

Lynch, A.W., J. Wachter and W. Boudry, 2002, Does Mutual Fund Performance Vary over the Business Cycle? Discussion paper NYU/NBER.

Background reading

Admati, Anit R., and Ross, Stephen A., 1985, Measuring Investment Performance in a Rational Expectations Equilibrium Model. Journal of Business, 58, 1-26.

Blake, David, Lunde Asger, and Timmermann, Allan, 1999, The Hazards of Mutual Fund Underperformance: A Cox Regression Analysis. Journal of Empirical Finance, 121-152.

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Gibbons, Michael R., Stephen A. Ross, and Jay Shanken, 1989, A Test of the Efficiency of a Given Portfolio. Econometrica 57 (September), pp. 1121-1152.

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Hendricks, D., Patel, J., and Zeckhauser, R., 1993, Hot Hands in Mutual Funds: Short-run Persistence of Relative Performance, 1974-88. Journal of Finance, 48, 93-130.

Henriksson, Roy D., and Merton, Robert C., 1981, On Market Timing and Investment Performance. II. Statistical Procedures for Evaluating Forecasting Skills. Journal of Business, 54, 513-533.

Lehmann, Bruce N., and Modest, David M., 1987, Mutual Fund Performance Evaluation: A Comparison of Benchmarks and Benchmark Comparisons. Journal of Finance, 42, 233-65.

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III. Option Pricing

Introduction to Continuous Time Finance

Bjork, T., 1998, Arbitrage Theory in continuous time, chapter 3,4, pages 27-68.

Background readings

Duffee, Darrell, and Chi-Fu Huang, 1985, Implementing Arrow-Debreu Equilibria by Continuous Trading of Few Long-Lived Securities. Econometrica 53, 97-116.

Shimko, David C., 1992, Finance in Continuous Time. A Primer. Kolb Publishing Company.

Wilmott, Paul, Howison, Sam, and Dewynne, Jeff , 1995, The Mathematics of Financial Derivatives. Cambridge University Press. Ch 4.

Option Contracts, Payoffs and Investment Strategies. Pricing Bounds

Merton, Robert C. 1973, Theory of Rational Option Pricing. Bell Journal of Economics and Management Science 4, pp. 141-183.

Background readings

Breeden, Douglas T., and Robert H. Litzenberger, 1978, Prices of State Contingent Claims Implicit in Option Prices. Journal of Business 51, pp. 621-651.

Detemple, Jerome, and Selden, Larry A., 1991, A General Equilibrium Analysis of Option and Stock Market Interactions. International Economic Review, 32, 279-303.

Huang, Chi-fu, and Robert H. Litzenberger, 1988, Foundations for Financial Economics, Chapter 6.

Ross, Stephen A., 1976, Options and Efficiency, Quarterly Journal of Economics 90, pp. 75-89.

The Binomial Lattice Model

Bjork, T., 1998, Arbitrage Theory in Continuous Time, chapter 2, pages 6-26.

Cox, John C, Ross, Stephen A., and Rubinstein, Mark, 1979, Option Pricing: A Simplified Approach. Journal of Financial Economics 7, 229-263.

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Ho, Teng-Suan, Stapleton, Richard C., and Subrahmanyam, Marti G., 1995, Multivariate Binomial Approximations for Asset Prices with Nonstationary Variance and Covariance Characteristics. Review of Financial Studies, 8, 1125-1152.

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Stapleton, R.C., and Subrahmanyam, M.G., 1984, The Valuation of Options when Asset Returns are Generated by a Binomial Process. Journal of Finance, 39, 1525-1539.

Wilmott, Paul, Howison, Sam, and Dewynne, Jeff, 1995, The Mathematics of Financial Derivatives. Cambridge University Press. Ch 10.

The Black-Scholes Option Pricing Model

Bjork, T., 1998, Arbitrage Theory in Continuous Time, chapters 5, 6, pages 69-98.

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Background readings

Campbell, John, Andrew Lo and Craig MacKinlay, 1997, The Econometrics of Financial Markets, chapter 9, pp. 339-355.

Cochrane, John, Asset Pricing, 2005, chapters 17, 18, pages 313-347.

Wilmott, Paul, Howison, Sam, and Dewynne, Jeff, 1995, The Mathematics of Financial Derivatives. Cambridge University Press. Chs 3, 4, 5.