

FINANCE 937
Advanced Quantitative Methods in Finance
Fall 2012

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DESCRIPTION

Finance 937 is an advanced course in quantitative finance intended for doctoral students in finance, economics and related fields. This year we focus on incorporating financial markets in general quantitative macroeconomic models, with particular attention to the role of credit markets and financial institutions. The first part of the course provides background discussions on many key building blocks such as corporate investment, capital structure, industry models, and asset pricing in general equilibrium. The second part is about the research frontier and promising directions for the future. Many of these papers offer exciting, but often still embryonic and somewhat undeveloped ideas – a great environment for students looking to develop their research into new areas (like me!).

TOPICS AND READING LIST

PART I: Background

Firms and Assets: Models of Corporate Investment

- Abel, Andrew and Eberly, Janice, *A Unified Model of Investment Under Uncertainty*, American Economic Review, 1994

Multiple Firms: Dynamic Industry Equilibrium

- Ericson, Richard and Pakes, Ariel, *Markov Perfect Industry Dynamics: A Framework for Empirical Work*, Review of Economic Studies, 1995
- Gomes, João, *Financing Investment*, American Economic Review, 2001
- Hopenhayn, Hugo, *Entry, Exit, and Firm Dynamics in Long Run Equilibrium*, Econometrica, 1992
- Lucas, Robert, *On the Size Distribution of Business Firms*, Bell Journal of Economics 1978
- Luttmer, Erzo, *Selection, Growth and the Size Distribution of Firms*, Journal of Political Economy, 2007

Firms and Liabilities: Models of the Capital Structure

- Gomes, João and Schmid, Lukas, *Levered Returns*, Journal of Finance, 2010
- Hennessy, Christopher, and Whited, Toni, *Debt Dynamics*, Journal of Finance, 2005

- Leland, Hayne, *Corporate Debt Value, Bond Covenants, and Optimal Capital Structure*, Journal of Finance 1994

Firms and Households in General Equilibrium: Equity Markets

- Jermann, Urban, *Asset Pricing in Production Economies*, Journal of Monetary Economics, 1998
- Boldrin, Christiano and Fisher, Jonas, *Habit Persistence, Asset Returns and the Business Cycle*, American Economic Review, 1999
- Kaltenbrunner, Georg and Loecherer, Lars, *Long Run Risk Through Consumption Smoothing*, Review of Financial Studies, 2008

Firms and Households in General Equilibrium: Equity Markets

- Bernanke, Ben, Gertler, Mark and Gilchrist, Simon, *The Financial Accelerator in a Quantitative Business Cycle Framework*, Handbook of Macroeconomics, 1999
- Carlstrom, Charles and Fuerst, Timothy, *Agency Costs, Net Worth and Business Fluctuations: A Computable General Equilibrium Approach*, American Economic Review, 1997
- Kiyotaki, Nobuhiro and John Moore, *Credit Cycles*, Journal of Political Economy, 1997

PART II: The Frontier in Macro Finance

Financial Factors and Business Cycles

- Chari, V. Kehoe, Patrick and McGrattan, Ellen, *Accounting for Business Cycles*, Econometrica, 2007
- Christiano, Lawrence and Davis, Joshua, *Two Flaws in Business Cycle Accounting*, Working Paper, Northwestern University, 2008
- Christiano, Lawrence, Motto, Roberto, and Rostagno, Massimo, *Financial Factors in Business Cycles*, working paper, Northwestern University, 2009
- Gomes, João, Yaron, Amir, and Zhang, Lu, *Asset Pricing Implications of Firms' Financing Constraints*, Review of Financial Studies, 2005
- Hall, Robert, *Quantifying the Forces Leading to the Collapse of GDP after the Financial Crisis*, working paper, Stanford University, 2012

Equity Markets and the Price of Capital

- Christiano, Lawrence, and Fischer, Jonas, *Stock Market and Investment Good Prices: Implications for Macroeconomics*, Working Paper, NBER, 2003
- Hall, Robert, *The Stock Market and Capital Accumulation*, American Economic Review, 2001
- McGrattan, Ellen, and Prescott, Edward, *Taxes, Regulation and the Value of UK and US Corporations*, Review of Economic Studies 2005
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Macroeconomic Models with Financing Constraints

- Cooley, Thomas, Marimon, Ramon, and Quadrini, Vincenzo, *Aggregate Consequences of Limited Contract Enforceability*, Journal of Political Economy, 2004
- Jermann, Urban and Quadrini, Vincenzo, *Macroeconomic Effects of Financial Shocks*, American Economic Review, 2011

Credit Markets in Macroeconomics

- Christiano, Lawrence and Ikeda, Daisuke, *Government Policy, Credit Markets and Economic Activity*, Working Paper, Northwestern University, 2011
- Gertler, Mark and Kiyotaki, Nobuhiro, *Financial Intermediation and Credit Policy in Business Cycle Analysis*, Working Paper, New York University, 2009
- Gertler, Mark and Karadi, Peter, *A Model of Unconventional Monetary Policy*, Journal of Monetary Economics, 2011
- Gomes, João and Schmid, Lukas, *Equilibrium Credit Spreads*, Working Paper, Wharton School, 2010
- Kiyotaki, Nobuhiro and Moore, John, *Liquidity, Business Cycles and Monetary Policy*, Working Paper, Princeton University, 2011

Macroeconomic Models with Banks

- Brunnermeier, Markus and Sannikov, Yuliy, *A Macroeconomic Model with a Financial Sector*, Working Paper, Princeton University, 2011
- Boissay, Frederic, Collard, Fabrice and Smets, Frank, *Booms and Systemic Banking Crises*, Working Paper, European Central Bank 2012
- Goodfriend, Marvin and McCallum, Bennett, *Banking and Interest Rates in Monetary Policy: A Quantitative Exploration*, Journal of Monetary Economics, 2008
- Hafstead, Mark, and Smith, Josephine, *Interbank Lending, Financial Shocks and Monetary Policy in a DSGE Model*, Working Paper, Stanford University, 2011
- Uhlig, Harald, *A Model of a Systemic Bank Run*, Journal of Monetary Economics, 2009
- Van den Heuvel, *The Welfare Cost of Bank Capital Requirements*, Journal of Monetary Economics, 2006

Uncertainty and News

- Bloom, Nicholas, *The Impact of Uncertainty Shocks*, Econometrica, 2009
- Jaimovic, Nir and Rebelo, Sergio, *Can News About the Future Drive the Business Cycle*, American Economic Review, 2009

Economic Development and Finance

- Castro, Rui, Clementi, Gian Luca, and MacDonald, Glenn, *Investor Protection, Optimal Incentives, and Economic Growth*, Quarterly Journal of Economics, 2004.
- Greenwood, Jeremy and Jovanovic, Boyan, *Financial Development, Growth and a Theory of Income*, Journal of Political Economy, 1990
- Greenwood, Jeremy, Sanchez, Juan, and Wang, Cheng, *Quantifying the Impact of Financial Development on Economic Development*, Working Paper, University of Pennsylvania, 2011
- Greenwood, Jeremy and Smith, Bruce, *Financial Markets in Development and the*
- Phillipon, Thomas, *Has the U.S. Finance Industry Become Less Efficient?* Working Paper, 2008

GRADES

Homeworks 50%

Homeworks will generally involve computational work and can be done alone or in teams of 2 students.

Paper/Presentation 50%

Some of the papers on the reading list will be reserved for student presentation at the end of the term. Alternatively you can present some original (preliminary) research on these topics.