

FINANCE 937
Advanced Quantitative Methods in Finance
Fall 2013

Professor João F. Gomes

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. 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 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: Corporate Investment and Finance

Firm Investment, Selection and Growth

- Abel, Andrew and Eberly, Janice, A Unified Model of Investment Under Uncertainty, *American Economic Review*, 1994
- Gomes, João, Financing Investment, *American Economic Review*, 2001
- Hopenhayn, Hugo, Entry, Exit, and Firm Dynamics in Long Run Equilibrium, *Econometrica*, 1992

Further Reading

- Clementi, Gian Luca and Dino Palazzo, Entry, Exit, Firm Dynamics, and Aggregate Fluctuations, Working Paper, New York University, 2012
- Ericson, Richard and Pakes, Ariel, Markov Perfect Industry Dynamics: A Framework for Empirical Work, *Review of Economic Studies*, 1995
- 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
- Krusell, Per and Anthony Smith, Income and Wealth Heterogeneity in Macroeconomics, *Journal of Political Economy*, 1998

Capital Structure and Asset Prices

- Gomes, João and Lukas Schmid, Levered Returns, *Journal of Finance*, 2010
- Hennessy, Christopher, and Toni Whited, Debt Dynamics, *Journal of Finance*, 2005
- Leland, Hayne, Corporate Debt Value, Bond Covenants, and Optimal Capital Structure, *Journal of Finance* 1994

Further Reading

- Almeida, Heitor, and Thomas Philippon, The Risk-Adjusted Cost of Financial Distress, *Journal of Finance*, 2007.
- Bhamra, Harjoat, Kuehn, Lars Alexander and Strebulaev, Ilya, The Levered Equity Risk Premium and Credit Spreads: A Unified Framework, *Review of Financial Studies* 2010
- Chen, Hui, Macroeconomic Conditions and the Puzzles of Credit Spreads and Capital Structure, *Journal of Finance*, 2010
- Chen, Long, Pierre Collin-Dufresne, and Robert Goldstein, On the Relationship Between the Credit Spread Puzzle and the Equity Premium Puzzle, *Review of Financial Studies*, 2009
- Glover, Brent, The Expected Cost of Default, Working Paper, Carnegie Mellon University, 2013
- Hackbarth, Dirk, Jianjun Miao, and Erwan Morellec, Capital Structure, Credit Risk, and Macroeconomic Conditions, *Journal of Financial Economics*, 2006
- Leland, Hayne, and Klaus Toft, Optimal Capital Structure, Endogenous Bankruptcy, and the Term Structure of Credit Spreads, *Journal of Finance* 1996.

PART II: Equity Markets

Partial Equilibrium Models

- Cochrane John, Production-Based Asset Pricing and the Link Between Stock Returns and Economic Fluctuations, *The Journal of Finance*, 1991
- Gomes, João, Yaron, Amir and Zhang, Lu, Asset Pricing Implications of Firms' Financing Constraints, *Review of Financial Studies*, 2006

Further Reading

- Belo, Frederico, Production-Based Measures of Risk for Asset Pricing, *Journal of Monetary Economics*, 2010
- Liu Laura, Whited, Toni, and Zhang, Lu, Investment-Based Expected Stock Returns, *Journal of Political Economy*, 2009

General Equilibrium Macro Models

- Jermann, Urban, Asset Pricing in Production Economies, *Journal of Monetary Economics*, 1998
- Hall, Robert, The Stock Market and Capital Accumulation, *American Economic Review*, 2001
- Kaltenbrunner, Georg and Loecherer, Lars, Long Run Risk Through Consumption Smoothing, *Review of Financial Studies*, 2008

Further Reading

- Boldrin, Christiano and Fisher, Jonas, Habit Persistence, Asset Returns and the Business Cycle, *American Economic Review*, 1999
- Christiano, Lawrence, and Fischer, Jonas, Stock Market and Investment Good Prices: Implications for Macroeconomics, Working Paper, NBER, 2003
- Gourio, Francois, Disaster Risk and Business Cycles, *American Economic Review*, 2012
- Kung, Howard and Schmid, Lukas, Innovation, Growth, and Asset Prices, Working Paper, Fuqua School of Business, 2012
- McGrattan, Ellen, and Prescott, Edward, *Taxes, Regulation and the Value of UK and US Corporations*, *Review of Economic Studies* 2005

Models about the Cross Section of Returns

- Gomes, João, Leonid Kogan and Lu Zhang, Equilibrium Cross Section of Returns, *Journal of Political Economy*, 2004
- Gomes, João, Leonid Kogan and Motohiro Yogo, Durability of Output and the Cross Section of Expected Returns, *Journal of Political Economy*, 2004
- Belo, Frederico, Vito Gala and Li, Government Spending, Political Cycles and the Cross-Section of Stock Returns, *Journal of Financial Economics*, 2013

Further Reading

- Zhang, Lu, The Value Premium, *Journal of Finance*, 2005

PART III: Credit Markets

Macro Models with Risk Neutral Agents

- Bernanke, Ben, Gertler, Mark and Gilchrist, Simon, The Financial Accelerator in a Quantitative Business Cycle Framework, *Handbook of Macroeconomics*, 1999
- Jermann, Urban and Quadrini, Vincenzo, Macroeconomic Effects of Financial Shocks, *American Economic Review*, 2011
- Khan, Aubhik and Julia K. Thomas, Credit Shocks and Aggregate Fluctuations in an Economy with Production Heterogeneity, working paper, Ohio State University, 2013
- Kiyotaki, Nobuhiro and John Moore, Credit Cycles, *Journal of Political Economy*, 1999

Further Reading

- Carlstrom, Charles and Fuerst, Timothy, *Agency Costs, Net Worth and Business Fluctuations: A Computable General Equilibrium Approach*, *American Economic Review*, 1997
- Cooley, Thomas, Marimon, Ramon, and Quadrini, Vincenzo, *Aggregate Consequences of Limited Contract Enforceability*, *Journal of Political Economy*, 2004
- Gertler, Mark and Peter Karadi, A Model of Unconventional Monetary Policy, *Journal of Monetary Economics*, 2011
- Gertler, Mark and Nobuhiro Kiyotaki, Bank Liquidity and Bank Runs in an Infinite Horizon Economy, Working Paper, Princeton University, 2013

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

Further Reading

- Christiano, Lawrence, Motto, Roberto, and Rostagno, Massimo, Financial Factors in Business Cycles, working paper, Northwestern University, 2009
- Gomes, João, Amir Yaron and Lu Zhang, Asset Prices and Business Cycles with Costly External Finance, *Review of Economic Dynamics* 2003
- Hall, Robert, Quantifying the Forces Leading to the Collapse of GDP after the Financial Crisis, Working Paper, Stanford University, 2012

Models with Credit Risk

- Gilchrist, Simon, Sim, Jae and Zakrajsek, Egon, Uncertainty, Financial Frictions, and Investment Dynamics, Working Paper, Boston University, 2013
- Gomes, João and Schmid, Lukas, Equilibrium Credit Spreads, Working Paper, Wharton School, 2013
- Gourio, Francois, Credit Risk and Disaster Risk, *American Economic Journal: Macroeconomics*, 2013
- Miao, Jianjun, and Pengfei Wang Credit Risk and Business Cycles, working paper, Boston University, 2010

Models with Nominal Debt

- Bhamra, Harjoat, Fischer, Adlai and Kuehn, Lars-Alexander, Monetary Policy and Corporate Default, *Journal of Monetary Economics*, 2013.
- Gomes, João, Jermann, Urban and Schmid, Lukas, Sticky Leverage, working paper, Wharton School, 2013
- Kang, Johnny and Pflueger, Carolin, Inflation Risk in Corporate Bonds, working paper, University of British Columbia, 2013

Further Reading

- Allen, Franklin, Elena Carletti and Douglas Gale, Money Financial Stability and Efficiency, *Journal of Economic Theory*, 2012
- De Fiore, Fiorella, Pedro Teles, and Oreste Tristani, Monetary Policy and the Financing of Firms, *American Economic Journal: Macroeconomics*, 2011

Empirical Studies

- Covas, Francisco, and den Haan, Wouter, The Cyclical Behavior of Debt and Equity Finance, *American Economic Review*, 2009
- Gilchrist, Simon, and Zakrajsek, Egon, Credit Spreads and Business Cycle Fluctuations, *American Economic Review*, 2012

Financial Intermediation

- Brunnermeier, Markus and Yuliy Sannikov, A Macroeconomic Model with a Financial Sector, Working Paper, Princeton University, 2011

- Corbae, Dean and Pablo D'Erasmus, A Quantitative Model of Banking Industry Dynamics, working paper, University of Wisconsin, 2011
- Krishnamurthy, Arvind, and Zhiguo He, Intermediary Asset Pricing, *American Economic Review*, 2013
- Di Tella, Sebastian Uncertainty Shocks and Balance Sheet Recessions, working paper, MIT, 2012
- Van den Heuvel, The Welfare Cost of Bank Capital Requirements, *Journal of Monetary Economics*, 2006

Further Reading

- 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
- 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. But I prefer that you present original (preliminary) research on these topics.