

**FINANCE 937**  
**Topics in Macro Finance**  
**Fall 2019**

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**DESCRIPTION**

Finance 937 is a *semester* long course in **quantitative macro-finance theory**. It is intended for advanced doctoral students in finance, economics and related fields. The course connects four different literatures: (i) models firm selection and investment; (ii) models of corporate, household and sovereign debt; (iii) macro models with a financial sector; and (iv) dynamic banking models.

The course is part of the Doctoral sequence in Finance. It follows logically from FNCE 924. It is intended to complement (with minimum overlap) the asset pricing courses FNCE 921 and FNCE 934. The choice of topics is also designed to appeal to economics students with an interest in Macroeconomics, Corporate Finance and IO.

Our approach is to develop and discuss in detail a set of core ideas. Course lectures summarize and combine material from several key papers, often using a consistent notation and methodology. These core insights are then used to discuss recent literature.

The reading list has two parts. It is expected that you will read the core papers and those assigned for presentation. The supplementary readings are reasonably extensive. Past students found this to be a very useful reference for the remaining of their graduate studies and beyond.

Despite the quantitative nature of the material there is only a limited time for teaching numerical methods. Students with deeper interests are encouraged to take the (excellent) classes offered in the Economics department and in BEPP.

**GRADES**

**Problem Set 50%**

There will be two large quantitative problem sets to capture the key ideas from each half of the course. The problem sets are designed to help you understand the key issues involved in

numerically solving a particular class of models. To maximize learning they should be done in teams of 2 students.

### **Paper Presentations 50%**

At the end of each section we will assign two or three recent papers for student presentation. Everyone is expected to prepare a brief 10 slide (20 minute) summary discussion of **each** assigned paper. A student will be randomly selected to present the paper, followed by a general class discussion.

**Please note: Homework and presentations should be submitted on Canvas.**

**There is no final exam.**

## **CORE READINGS**

### **1. Corporate Investment and Firm Heterogeneity**

- Abel, Andrew and Eberly, Janice, A Unified Model of Investment Under Uncertainty, *American Economic Review*, 1994
- Bloom, Nicholas, The Impact of Uncertainty Shocks, *Econometrica*, 2007
- Caballero, Ricardo, and Engel, Eduardo, Explaining the Investment Dynamics in U.S. Manufacturing: A Generalized (S,s) Dynamics, *Econometrica*, 1999
- Corbae, Dean and Pablo D'Erasmus, Capital Requirements in a Quantitative Model of Banking Industry Dynamics, working paper, Federal Reserve Bank of Philadelphia, 2014
- Gomes, João, Financing Investment, *American Economic Review*, 2001

### **2. Models of Corporate, Household and Sovereign Debt**

- Arellano, Cristina, Default Risk and Income Fluctuations in Emerging Economies. *American Economic Review*, 2008
- Carvalho, Vasco and Grassi, Basile, Large Firms and the Business Cycle, *American Economic Review*, 2017
- Chatterjee, Satyajit, Corbae, Dean, Nakajima, Makoto and Rios-Rull, Jose-Victor, A Quantitative Theory of Unsecured Consumer Credit with Risk of Default, *Econometrica*, 2007
- Chatterjee, Satyajit, and Eyigungor, Burcu, Maturity, Indebtedness, and Default Risk, *American Economic Review*, 2012
- Chen, Hui, Macroeconomic Conditions and the Puzzles of Credit Spreads and Capital Structure, *Journal of Finance*, 2011
- Gabaix, Xavier, Granular Origins of Business Cycles, *Econometrica*, 2011
- Goldstein, Robert, Ju, Nengjiu, and Leland, Hayne, An EBIT Based Model of Dynamic Capital Structure, *Journal of Business*, 2001

- Hackbarth, Dirk, Jianjun Miao, and Erwan Morellec, Capital Structure, Credit Risk, and Macroeconomic Conditions, *Journal of Financial Economics*, 2006
- He, Zhinguo and Milbradt, Konstantin, Endogenous Liquidity and Defaultable Bonds, *Econometrica*, 2013.
- 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

### **3. Macroeconomic Models with Financial Imperfections**

- Kiyotaki, Nobuhiro and John Moore, Credit Cycles, *Journal of Political Economy*, 1997
- Bernanke, Ben, Mark Gertler and Simon Gilchrist, The Financial Accelerator in a Quantitative Business Cycle Framework, *Handbook of Macroeconomics*, 1999
- Brunnermeier, Markus and Yuliy Sannikov, A Macroeconomic Model with a Financial Sector, *American Economic Review*, 2013
- Begenau, Juliane, Capital Requirements, Risk Choice and Liquidity Provision in a Business Cycle Model, Working paper, 2018
- Elenev, Vadim, Tim Landvoigt, and Stijn Van Nieuwerburgh, A Macroeconomic Model with Financially Constrained Producers and Intermediaries, Working Paper, 2018

### **4. Quantitative Models of Housing and Mortgages**

- Favilukis, Jack, Ludvigson, Sydney and Van Nieuwerburgh, Stijn, The Macroeconomic Effects of Housing Wealth, Housing Financing and Limited Risk-Sharing in General Equilibrium, *Journal of Political Economy*, 2016
- Kaplan, Gregory, Mitman, Kurt, and Violante, Gianluca, The Housing Boom and Bust: Model Meets Evidence, Working Paper, 2019
- Justiniano, Alejandro, Primiceri, Giorgio, and Tambalotti, Andrea, Credit Supply and the Housing Boom, *Journal of Political Economy*, 2018
- Diamond, William, and Landvoigt, Tim, Credit Cycles with Market-Based Household Leverage, Working Paper 2019

## FURTHER READINGS

### Firm Selection, Growth and Investment

#### *Optimal Investment*

- Hall, Robert, The Stock Market and Capital, *American Economic Review*, 2001
- Philippon, Thomas, The Bond Market's Q, *Quarterly Journal of Economics*, 2009

#### *Continuous Time Tools*

- Dixit, Avinash, and Pindyck, Robert, Ch. 3-6, Investment Under Uncertainty, Princeton University Press, 1994
- Benjamin Moll's website: <http://www.princeton.edu/~moll/notes.htm>

#### *Heterogeneous Firms and Equilibrium*

- Hopenhayn, Hugo, Entry, Exit, and Firm Dynamics in Long Run Equilibrium, *Econometrica*, 1992
- Luttmer, Erzo, Selection, Growth and the Size Distribution of Firms, *Journal of Political Economy*, 2007

### Corporate, Household and Sovereign Debt

#### *Optimal Capital Structure of Firms*

- Glover, Brent, The Expected Cost of Default, *Journal of Financial Economics*, 2014
- Leland, Hayne, and Klaus Toft, Optimal Capital Structure, Endogenous Bankruptcy, and the Term Structure of Credit Spreads, *Journal of Finance*, 1996
- Rampini, Adriano and S. Viswanathan, Collateral and Capital Structure, *Journal of Financial Economics*, 2013.
- Riddick, Leigh, and Whited, Toni, The Corporate Propensity to Save, *Journal of Finance*, 2009
- Shleifer, Andrei, and Vishny, Robert, Liquidation Values and Debt Capacity: A Market Equilibrium Approach, *Journal of Finance*, 1992

#### *Corporate Investment with Debt*

- Abel, Andrew, Investment and Leverage, Working Paper, Wharton School, 2016.
- Hennessy, Christopher, and Whited, Toni, How Costly is External Financing? Evidence from a Structural Estimation, *Journal of Finance*, 2007.

#### *Household and Sovereign Debt*

- Arellano, Cristina, and Ramanarayanan, Ananth, Default and the Maturity Structure in Sovereign Bonds, *Journal of Political Economy* 2012
- Corbae, Dean, Quintin, Erwan, Leverage and the Foreclosure Crisis, *Journal of Political Economy*, 2015
- Eaton, Jonathan, and Gersovitz, Mark, Debt with Potential Repudiation: Theoretical and Empirical Analysis, *Review of Economic Studies*, 1983

- Hatchondo, Juan Carlos, Martinez, Leonardo and Sapriza, Horacio, Quantitative Properties of Sovereign Default Models: Solution Methods Matter, *Review of Economic Dynamics* 2010
- Mendoza, Enrique, and Yue, Vivian, A General Equilibrium Model of Sovereign Default and Business Cycles, *Quarterly Journal of Economics*, 2012.

### **Macroeconomic Models with Financial Imperfections**

#### *Macro Theory Models with Financing Frictions*

- Carlstrom, Charles and Fuerst, Timothy, Agency Costs, Net Worth and Business Fluctuations: A Computable General Equilibrium Approach, *American Economic Review*, 1997
- Bigio, Saki, Endogenous Liquidity and the Business Cycle, *American Economic Review*, 2015.
- Di Tella, Sebastian Uncertainty Shocks and Balance Sheet Recessions, *American Economic Review*, 2015
- Bianchi, Javier and Enrique Mendoza, Optimal Time-Consistent Macroprudential Policy, *Journal of Political Economy*, 2018

#### *Macro Theory Models with “Bank Runs”*

- Allen, Franklin, Elena Carletti and Douglas Gale, Money, Financial Stability and Efficiency, *Journal of Economic Theory*, 2012
- Gertler, Mark and Nobuhiro Kiyotaki, Bank Liquidity and Bank Runs in an Infinite Horizon Economy, *American Economic Review*, 2016
- Boissay, Frederic, Collard, Fabrice and Smets, Frank, Booms and Banking Crises, *Journal of Political Economy*, 2016

#### *Quantifying Financial Frictions*

- Chari, V. Kehoe, Patrick and McGrattan, Ellen, Accounting for Business Cycles, *Econometrica*, 2007
- Christiano, Lawrence, Motto, Roberto, and Rostagno, Massimo, Financial Factors in Business Cycles, working paper, Northwestern University, 2010
- Christiano, Lawrence J., Roberto Motto, and Massimo Rostagno, Risk Shocks, *American Economic Review*, 2014
- Hall, Robert, Quantifying the Forces Leading to the Collapse of GDP after the Financial Crisis, *NBER Macroeconomics Annual*, 2014
- Phillipon, Thomas, Has the U.S. Finance Industry Become Less Efficient? *American Economic Review*, 2015

#### *Macro Models of Firm Financing Frictions*

- 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, *Journal of Political Economy*, 2014

- Gomes, João, Jermann, Urban and Schmid, Lukas, Sticky Leverage, *American Economic Review*, 2016

## **Quantitative Macro-Finance Models**

### *Monetary Policy and Banks*

- Gertler, Mark and Peter Karadi, A Model of Unconventional Monetary Policy, *Journal of Monetary Economics*, 2011
- Drechsler, Itamar, Savov, Alexei, and Schnabl, Phillip, A Model of Monetary Policy and Risk Premia, *Journal of Finance*, 2017
- Lenel, Moritz, Piazzesi, Monika, and Schneider, Martin, The short rate disconnect in a monetary economy, *Journal of Monetary Economics* 2019
- Wang, Olivier, Banks, Low Interest Rates, and Monetary Policy Transmission, Working paper 2019

### *Housing and Mortgage Finance*

- Landvoigt, Tim, Monika Piazzesi, and Martin Schneider, The Housing Market(s) of San Diego, *American Economic Review*, 2015
- Justiniano, Alejandro, Primiceri, Giorgio, and Tambalotti, Andrea, The Mortgage Rate Conundrum, Working Paper 2018
- Greenwald, Daniel, The Mortgage Credit Channel of Macroeconomic Transmission, Working Paper, 2018
- Greenwald, Daniel and Guren, Adam, Do Credit Conditions Move House Prices?, Working Paper 2019

### *Banking and Regulation*

- Van den Heuvel, The Welfare Cost of Bank Capital Requirements, *Journal of Monetary Economics*, 2006
- Begenau, Juliane and Tim Landvoigt, Financial Regulation in a Quantitative Model of the Modern Banking System, working paper, 2018
- Davidyuk, Tetiana, Dynamic Bank Capital Requirements, Working paper, 2018
- Robatto, Robert and Pancost, Aaron, The Effects of Capital Requirements on Good and Bad Risk-Taking, Working paper 2019