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
   - Corbae, Dean and Pablo D’Erasmo, Capital Requirements in a Quantitative Model of Banking Industry Dynamics, working paper, Federal Reserve Bank of Philadelphia, 2014

2. Models of Corporate, Household and Sovereign Debt


• Hennessy, Christopher, and Toni Whited, Debt Dynamics, *Journal of Finance*, 2005


3. Macroeconomic Models with Financial Imperfections

• Kiyotaki, Nobuhiro and John Moore, Credit Cycles, *Journal of Political Economy*, 1997


• 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


• 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*

*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*

Corporate, Household and Sovereign Debt

*Optimal Capital Structure of Firms*

*Corporate Investment with Debt*

*Household and Sovereign Debt*
- Corbae, Dean, Quintin, Erwan, Leverage and the Foreclosure Crisis, *Journal of Political Economy*, 2015
• Hatchondo, Juan Carlos, Martinez, Leonardo and Sapriza, Horacio, Quantitative Properties of Sovereign Default Models: Solution Methods Matter, Review of Economic Dynamics, 2010

Macroeconomic Models with Financial Imperfections

Macro Theory Models with Financing Frictions
• 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”
• Gertler, Mark and Nobuhiro Kiyotaki, Bank Liquidity and Bank Runs in an Infinite Horizon Economy, American Economic Review, 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

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

**Quantitative Macro-Finance Models**

*Monetary Policy and Banks*

• Gertler, Mark and Peter Karadi, A Model of Unconventional Monetary Policy, *Journal of Monetary Economics*, 2011


• 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*


• 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