

Topics in Macrofinance

2024-25 Academic Year
Master of Research in Economics, Finance and Management

1. Description of the subject

- Topics in Macrofinance
 - Total credits: 6 ECTS
 - Type of subject: Optative
 - Department of Economics and Business
 - Teaching team: Vladimir Asriyan, Andrea Caggese, Priit Jeenas, Alberto Martin, Victoria Vanasco
- Code: 32712
Workload: 150 hours
Terms: 2nd and 3rd

Teaching guide

- **Introduction**

Over the last few decades, financial markets have taken a center stage in macroeconomics. This course will familiarize students with some basic tools to conduct research in this area. Parts 1 and 2 will analyze the macroeconomic implications of financial imperfections. Part 3 will provide a brief overview of the evidence on, as well as some recent theories of, credit booms. Parts 4 and 5 will focus on the interaction between financial constraints and firm dynamics, as well as with the identification of financial frictions.

- **Contents**

Part 1: (Victoria Vanasco)

1.1. Financial Intermediation, Information Frictions, and the Macroeconomy

- Market failures in the presence of information asymmetries.
- Implications for the allocation of capital and aggregate output.
- Endogenous asset quality and liquidity in markets with information frictions.

1.2. Asymmetric Information, the Allocation of Capital, and the Business Cycle

- Information asymmetries as sources of amplification of shocks.
- Implications for macro-prudential policy.

Part 2: (Vladimir Asriyan)

2.1. Financial Frictions, Hedging and Amplification

- The theory of corporate saving and risk-management
- The balance sheet amplification mechanism and the business cycle

2.2. Pecuniary and Aggregate Demand Externalities, and Macro-prudential policy

- Pecuniary externalities in models with financial frictions
- Aggregate demand externalities in models with financial frictions and nominal rigidities
- Implications for macro-prudential policy

Part 3: (Alberto Martin)

3.1. Credit booms: stylized facts

3.2. The view of rational bubbles

- A workhorse model of bubbles and the macroeconomy
- Policy implications

3.3. Information during booms and busts

- Booms and busts: the role of information
- Dynamic implications

Part 4 (Andrea Caggese)

4.1. Introduction to Firm Dynamics and Misallocation

- Stylized facts on firm dynamics.
- Dispersion in productivity, frictions, and misallocation of resources: theoretical framework and empirical evidence.

4.2 Financial frictions and Firm Dynamics: empirical evidence and theory

- Micro foundation and empirical testing of firm level financial frictions, and of their aggregate implications.
- Firm dynamics and financial frictions: basic model and applications
 - Uncertainty, bankruptcy risk, and selection.
 - Radical and Incremental innovation.

Part 5 (Priit Jeenas)

5.1 Empirical developments in identifying financial frictions

- Firms' responses to (quasi-)natural experiments and identified shocks.
- The heterogeneous effects of aggregate shocks and economic policy.

5.2 Firms, financial frictions and aggregate shocks: theory and applications

- Financial crises through the lens of firm dynamics models.
- The effects of economic policy shocks when firms face financial frictions.

● **Assessment and Grading System**

The grade for the course will be based on 5 problem sets (40%) and a final exam (60%).

There will be one problem set for each part of the course, which might involve writing essays, solving analytical problems, or applied problems with data and codes (provided by the professors). Problem sets can be solved and handed in in groups of maximum 3 people.

The final exam will consist of 5 questions, one for each part of the program. They will be either problems or open questions closely related to the material covered in class. Students can bring printed teaching material (lecture slides) at the exam. Examples of questions from past final exams will be provided.

3. Programme of activities (preliminary)

The following outline sketches the topics covered in the course. Required readings are marked by a star. The reading list is subject to changes before and during the class.

Part 1.1 Financial intermediation, information frictions, and the macroeconomy

- * Stiglitz and Weiss, 1986, *Credit Rationing in Markets with Imperfect Information*, American Economic Review.
- * Holmstrom and Tirole, 1997, *Financial Intermediation, Loanable Funds, and The Real Sector*, the Quarterly Journal of Economics.
- * Farhi and Tirole, 2012, *Collective Moral Hazard, Maturity Mismatch and Systemic Bailouts*, American Economic Review.
- * Dang, Gorton, Holmstrom, Ordenez, 2017, *Banks as Secret Keepers*, American Economic Review.
- * Vanasco 2017, *The Downside of Asset Screening for Market Liquidity*, the Journal of Finance. Caramp N, 2018, *Sowing the Seeds of Financial Crises: Endogenous Asset Creation and Adverse Selection*, Working Paper.
- Neuhann, D., 2019. Inefficient Asset Price Booms. Working Paper, Available at SSRN 3095730.

Part 1.2 Asymmetric information, the allocation of capital, and the business cycle

- * Kurlat, 2013, *Lemons Markets and the Transmission of Aggregate Shocks*, American Economic Review.
- Asriyan, Fuchs and Green, 2019, *Liquidity Sentiments*, American Economic Review. Eisefeldt, 2004, *Endogenous Liquidity in Asset Markets*, the Journal of Finance.
- Eisefeldt A. L., Rampini A. A., 2006, *Capital reallocation and liquidity*. Journal of monetary Economics.
- Fuchs, Green and Papanikolaou, 2016, *Adverse Selection, Slow-Moving Capital and Misallocation*, Journal of Financial Economics.
- Bigio, 2015, *Endogenous Liquidity and the Business Cycle*, American Economic Review.

Part 2.1 Financial frictions, hedging and amplification

- Asriyan, Vladimir. "Balance Sheet Channel with Information-Trading Frictions in Secondary Markets." *The Review of Economic Studies* 88.1 (2021): 44-90.
- Bocola, Luigi, and Guido Lorenzoni. "Financial crises, dollarization, and lending of last resort in open economies." *American Economic Review* 110.8 (2020): 2524-57.
- Bocola, Luigi, and Guido Lorenzoni. *Risk sharing externalities*. No. w26985. National Bureau of Economic Research, 2020.
- Di Tella, Sebastian. "Uncertainty shocks and balance sheet recessions." *Journal of Political Economy* 125.6 (2017): 2038-2081.
- * Froot, Kenneth A., David S. Scharfstein, and Jeremy C. Stein. "Risk management: Coordinating corporate investment and financing policies." *The Journal of Finance* 48.5 (1993): 1629-1658.
- Kehoe, Timothy J., and David K. Levine. "Debt-constrained asset markets." *The Review of Economic Studies* 60.4 (1993): 865-888.
- * Kiyotaki, Nobuhiro, and John Moore. "Credit cycles." *Journal of Political Economy* 105.2 (1997): 211-248.

- * Krishnamurthy, Arvind. "Collateral constraints and the amplification mechanism." *Journal of Economic Theory* 111.2 (2003): 277-292.
- Krugman, Paul. "Balance sheets, the transfer problem, and financial crises." *International Finance and Financial Crises*. Springer, Dordrecht, 1999. 31-55.
- * Rampini, Adriano A., and S. Viswanathan. "Collateral, risk management, and the distribution of debt capacity." *The Journal of Finance* 65.6 (2010): 2293-2322.

Part 2.2 Pecuniary and aggregate demand externalities, and macro-prudential policy

- * Bianchi, Javier. "Overborrowing and systemic externalities in the business cycle." *American Economic Review* 101.7 (2011): 3400-3426.
- Caballero, Ricardo J., and Arvind Krishnamurthy. "International and domestic collateral constraints in a model of emerging market crises." *Journal of Monetary Economics* 48.3 (2001): 513-548.
- * Dávila, Eduardo, and Anton Korinek. "Pecuniary externalities in economies with financial frictions." *The Review of Economic Studies* 85.1 (2018): 352-395.
- Di Tella, Sebastian. "Optimal regulation of financial intermediaries." *American Economic Review* 109.1 (2019): 271-313.
- Eggertsson, Gauti B., and Paul Krugman. "Debt, deleveraging, and the liquidity trap: A Fisher-Minsky-Koo approach." *The Quarterly Journal of Economics* 127.3 (2012): 1469-1513.
- Farhi, Emmanuel, and Iván Werning. "A theory of macroprudential policies in the presence of nominal rigidities." *Econometrica* 84.5 (2016): 1645-1704.
- Guerrieri, Veronica, and Guido Lorenzoni. "Credit crises, precautionary savings, and the liquidity trap." *The Quarterly Journal of Economics* 132.3 (2017): 1427-1467.
- * Korinek, Anton, and Alp Simsek. "Liquidity trap and excessive leverage." *American Economic Review* 106.3 (2016): 699-738.
- * Lorenzoni, Guido. "Inefficient credit booms." *The Review of Economic Studies* 75.3 (2008): 809-833.
- Schmitt-Grohé, Stephanie, and Martin Uribe. "Downward nominal wage rigidity, currency pegs, and involuntary unemployment." *Journal of Political Economy* 124.5 (2016): 1466-1514.

Part 3.1 Credit booms: stylized facts

- I will provide source material during the class.

Part 3.2 The view of rational bubbles

- Asriyan, V., Fornaro, L., Martin, A., and J. Ventura, "Monetary Policy for a Bubbly World", forthcoming, *Review of Economic Studies*.
- Caballero, R. and A. Krishnamurthy, "Bubbles and Capital Flow Volatility: Causes and Risk Management", *Journal of Monetary Economics* 2006.
- Martin, A. and J. Ventura, "Economic Growth with Bubbles", *American Economic Review*, 2012.
- *Martin, A. and J. Ventura, "The Macroeconomics of Rational Bubbles. A User's Guide".
- Tirole, J., "Asset Bubbles and Overlapping Generations." *Econometrica*, 1985.

Part 3.3 Information during booms and busts

- * Asriyan, V., Laeven, L. and A. Martin, "Collateral Booms and Information Depletion", *The Review of Economic Studies*, forthcoming.

- Boissay, F., Collard, F., and F. Smets, "Booms and Banking Crises", *Journal of Political Economy*, 2016.
- Farboodi, M. and Kondor, P., "Rational Sentiments and Economic Cycles", LSE Working Paper, 2020.
- Fishman, M., Parker, J. and L. Straub, "A Dynamic Theory of Lending Standards", Harvard Working Paper (2020).
- * Gorton, G. and Ordoñez, G., "Collateral crises," *American Economic Review*, 2014.
- Gorton, G. and Ordoñez, G., "Good booms, bad booms," *Journal of the European Economic Association*, 2019.

Part 4.1 Introduction to Firm Dynamics and Misallocation.

- *John Asker, Allan Collard-Wexler, and Jan De Loecker, Dynamic Inputs and Resource (Mis)Allocation, *Journal of Political Economy* 2014 122:5, 1013-1063
- *Mark Bilal, Peter J. Klenow, Cian Ruane, Misallocation or Mismeasurement?, Stanford University, December 4, 2018
- Lucia Foster, Cheryl Grin, John C. Haltiwanger, Zoltan Wolf, 2018, Innovation, Productivity Dispersion and Productivity Growth. NBER Working Paper 24420
- *Hsieh, C. and P.J. Klenow (2009). "Misallocation and Manufacturing TFP in China and India", *The Quarterly Journal of Economics* 124, 1403-1448.
- *Joel David, Venky Venkateswaran, 2019, The Sources of Capital Misallocation, *American Economic Review*, forthcoming.
- *Haltiwanger, John, Robert Kulick and Chad Syverson. 2018. "Misallocation Measures: The Distortion that Ate the Residual." NBER Working Paper No. 24199
- *John Haltiwanger, Ron S. Jarmin, Robert Kulick, Javier Miranda, High Growth Young Firms: Contribution to Job, Output, and Productivity Growth, Chapter in NBER book *Measuring Entrepreneurial Businesses: Current Knowledge and Challenges* (2017), John Haltiwanger, Erik Hurst, Javier Miranda, and Antoinette Schoar, editors (p. 11 - 62).
- *Restuccia, Diego, and Richard Rogerson. 2017. "The Causes and Costs of Misallocation." *Journal of Economic Perspectives*, 31 (3): 151-74.
- *Syverson, C. 2004, "Product Substitutability and Productivity Dispersion." *Review of Economics and Statistics*, 86(2): 534-50.
- Syverson, C., 2011, What Determines Productivity?, *Journal of Economic Literature* 2011, 49:2, 326-365

Part 4.2: Financial frictions and Firm Dynamics: empirical evidence and theory

- Santiago Bazdresch, R. Jay Kahn, Toni M. Whited, Estimating and Testing Dynamic Corporate Finance Models, *The Review of Financial Studies*, Volume 31, Issue 1, January 2018, Pages 322-361
- Cabral, Luís M B, and José Mata. 2003. "On the Evolution of the Firm Size Distribution: Facts and Theory." *American Economic Review*, 93(4): 1075-1090.
- *Chen Lian, Yueran Ma, 2018, Anatomy of Corporate Borrowing Constraints, working paper.
- Dell'Ariccia, Giovanni, Detragiache, Enrica, and Rajan, Raghuram, 2008, "The real effect of banking crises," *Journal of Financial Intermediation*, Elsevier, vol. 17(1), pages 89-112.
- *Farre-Mensa, Joan, and Alexander Ljungqvist. "Do Measures of Financial Constraints Measure Financial Constraints?" *Review of Financial Studies* 29, no. 2 (February 2016): 271-308.

- Hadlock, Charles J., and Joshua R. Pierce, 2010, New evidence on measuring financial constraints: Moving beyond the KZ Index, *Review of Financial Studies* 23, 1909–1940.
- Kaplan, Steven N., and Luigi Zingales, 1997, Do investment-cash flow sensitivities provide useful measures of financing constraints?, *Quarterly Journal of Economics* 115, 707–712.
- Simon Gilchrist, Jae Sim and Egon Zakrajsek, 2013, "Misallocation and Financial Frictions: Some Direct Evidence from the Dispersion in Borrowing Costs", *Review of Economic Dynamics*, January 2013.
- *Nikolov, Boris and Schmid, Lukas and Steri, Roberto, The Sources of Financing Constraints (November 30, 2018). Swiss Finance Institute Research Paper No. 18-74. Available at SSRN: <https://ssrn.com/abstract=3293849> or <http://dx.doi.org/10.2139/ssrn.3293849>
- *Hopenhayn, Hugo A, 1992. "Entry, Exit, and Firm Dynamics in Long Run Equilibrium," *Econometrica*, Econometric Society, vol. 60(5), pages 1127-1150, September.
- *Buera, Francisco J., Joseph P. Kaboski, and Yongseok Shin. 2011. "Finance and Development: A Tale of Two Sectors." *American Economic Review*, 101(5).
- Buera, Francisco J. and Benjamin Moll. 2015. "Aggregate Implications of a Credit Crunch: The Importance of Heterogeneity." *American Economic Journal: Macroeconomics*, 7(3): 1-42.
- *Caggese, A., and V. Cuñat, 2013, "Financing Constraints, Firm Dynamics, Export Decisions, and Aggregate Productivity", *Review of Economic Dynamics*, Special Issue on Misallocation and Productivity, edited by Diego Restuccia & Richard Rogerson, vol. 16(1), pages 177-193, January 2013.
- *Caggese, A., 2019, "Financing Constraints, Radical versus Incremental Innovation, and Aggregate productivity", *American Economic Journal: Macroeconomics*.
- G. Clementi, H.Hopenhayn, A Theory of Financing Constraints and Firm Dynamics, *Quarterly Journal of Economics*, Volume 121, Issue 1, February 2006, pages 229-265
- *Midrigan, Virgiliu, and Daniel Yi Xu. 2014. "Finance and Misallocation: Evidence from Plant-Level Data." *American Economic Review*, 104(2): 422-58
- *Arellano, C., Yan, Bai, and Patrick Kehoe, 2019, Financial Frictions and Fluctuations in Volatility, *Journal of Political Economy*, Forthcoming.
- Moll, Benjamin. 2014. "Productivity Losses from Financial Frictions: Can Self-Financing Undo Capital Misallocation?" *American Economic Review*, 104(10): 3186-3221.
- Oberfield, Ezra, 2013. Productivity and misallocation during a crisis: Evidence from the Chilean crisis of 1982. *Review of Economic Dynamics* 16 (1), 100–119
- Hsieh, Chang-Tai and Klenow, Peter J., 2014, The Life Cycle of Plants in India and Mexico, *Quarterly Journal of Economics*, Vol. 129, Issue 3
- Acemoglu, D., U. Akcigit, N. Bloom, and W. R. Kerr (2013). Innovation, Reallocation and Growth. National Bureau of Economic Research WP 18993.
- Daron Acemoglu, Ufuk Akcigit, Murat Alp Celik, 2014, Young, Restless and Creative: Openness to Disruption and Creative Innovations, NBER Working Paper No. 19894
- Ufuk Akcigit, William R. Kerr, 2010, Growth Through Heterogeneous Innovations, NBER Working Paper No. 16443
- Albert, C., and A. Caggese, 2019, Cyclical Fluctuations, Financial Shocks, and the Entry of Fast Growing Entrepreneurial Startups, working paper.
- Caggese, A., Metzger, D., and V. Cunat, 2016, "Firing the Wrong Workers: Financing Constraints and Labor Misallocation", forthcoming, *Journal of Financial Economics*.
- Caggese, A., 2012, "Entrepreneurial Risk, Investment and Innovation", *Journal of Financial Economics*, n.106, November 2012, 287-307.

- Klette, T. J. and S. Kortum (2004). Innovating Firms and Aggregate Innovation. *Journal of Political Economy*, 112, 986-1018.
- Daniel Garcia-Macia, Chang-Tai Hsieh, Peter J. Klenow, 2019, How Destructive is Innovation?, working paper.
- Pugsley, Benjamin, Petr Sedlacek, and Vincent Sterk, "The Nature of Firm Growth," CEPR Discussion Papers 12670, C.E.P.R. Discussion Papers January 2018.
- Sedlacek, P., and V. Sterk, 2016, The Growth Potential of Startups over the Business Cycle, *American Economic Review*.

Part 5.1: Empirical developments in identifying financial frictions

- *Gan, J. (2007), "Collateral, debt capacity, and corporate investment: Evidence from a natural experiment", *Journal of Financial Economics*, vol. 85, no. 3, 709- 734.
- Almeida, H. M. Campello, B. Laranjeira and B. Weisbenner (2012). "Corporate Debt Maturity and the Real Effects of the 2007 Credit Crisis", *Critical Finance Review*, vol. 1, no. 1, 3-58.
- Benmelech, E., C. Frydman and D. Papanikolaou (2019). "Financial frictions and employment during the Great Depression", *Journal of Financial Economics*, vol. 133, no. 3, 541-563.
- Chodorow-Reich, G. (2014), "The Employment Effects of Credit Market Disruptions: Firm-Level Evidence from the 2008–9 Financial Crisis", *The Quarterly Journal of Economics*, vol. 129, no. 1, 1-59.
- Catherine, S., T. Chaney, Z. Huang, D. Sraer and D. Thesmar (2021 March), "Quantifying Reduced-Form Evidence on Collateral Constraints", Working Paper.
- *Chaney, T., D. Sraer and D. Thesmar (2012), "The Collateral Channel: How Real Estate Shocks Affect Corporate Investment", *American Economic Review*, vol. 102, no. 6, 2381-2409.
- Bahaj, S., A. Foulis and G. Pinter (2020), "Home Values and Firm Behavior", *American Economic Review*, vol. 110, no. 7, 2225-2270.
- Almeida, H., D. Carvalho and T. Kim (2018), "The Working Capital Credit Multiplier", 29th Annual Conference on Financial Economics & Accounting 2018, Available at SSRN: <https://ssrn.com/abstract=3071018>.
- Melcangi, D. (2020 September), "The marginal propensity to hire", Working Paper.
- Bermejo, V., M. Ferreira, D. Wolfenzon and R. Zambrana (2021 April), "Entrepreneurship and Regional Windfall Gains: Evidence from the Spanish Christmas Lottery", Working Paper.
- Roberts, M. and T. Whited (2012). "Endogeneity in Empirical Corporate Finance", *Handbook of the Economics of Finance*, vol. 2, 493-572.
- *Zwick, E. and J. Mahon (2017), "Tax Policy and Heterogeneous Investment Behavior", *American Economic Review*, vol. 107, no. 1, 217-48.

- Lee, M. (2021 August), “Government Purchases and Firm Growth”, Working Paper.
- Jeenas, P. (2019 July) “Monetary Policy Shocks, Financial Structure, and Firm Activity: A Panel Approach”, Working Paper.
- *Anderson, G. and A. Cesa-Bianchi (2021 March), “Crossing the Credit Channel: Credit Spreads and Firm Heterogeneity”, Working Paper.
- Bahaj, S., A. Foulis, G. Pinter and P. Surico (2021 May), “Employment and the Collateral Channel of Monetary Policy”, Working Paper.
- Jeenas, P. and R. Lagos (2022 April), “Q-Monetary Transmission”, Working Paper.
- Di Giovanni, J., M. García-Santana, P. Jeenas, E. Moral-Benito and J. Pijoan-Mas (2022 June), “Government Procurement and Access to Credit: Firm Dynamics and Aggregate Implications”, Working Paper.

Part 5.2: Firms, financial frictions and aggregate shocks: theory and applications

- *Khan, A. and J. Thomas (2013), “Credit Shocks and Aggregate Fluctuations in an Economy with Production Heterogeneity”, *Journal of Political Economy*, vol.121, no. 6, 1055-1107.
- Buera, F. and B. Moll (2015), “Aggregate Implications of a Credit Crunch: The Importance of Heterogeneity”, *American Economic Journal: Macroeconomics*, vol. 7, no. 3, 1-42.
- Guo, X. (2020 November), “Reassessing the Relevance of Financial Shocks in an Estimated Heterogeneous Firm Model”, Working Paper.
- Melcangi, D. (2021 July), “Firms’ precautionary savings and employment during a credit crisis”, Working Paper.
- Bernanke, B., M. Gertler and S. Gilchrist (1999), “The Financial Accelerator in a Quantitative Business Cycle Framework”, *Handbook of Macroeconomics*, vol. 1, 1341-1393.
- *Ottonello, P. and T. Winberry (2020), “Financial Heterogeneity and the Investment Channel of Monetary Policy”, *Econometrica*, vol. 88, no 6., 2473-2502.
- Jeenas, P. (2019 June), “Firm Balance Sheet Liquidity, Monetary Policy Shocks, and Investment Dynamics”, Working Paper.