

Topics in Financial Economics

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Objectives of the course: The course will investigate the consequences of various kinds of 'frictions' in financial arrangements (from the absence of some markets to limited commitment, agency problems and informational asymmetries) for the properties of equilibrium allocations and risk sharing to the functioning of financial markets in competitive environments. The course will present first the basic 'tools' used in the analysis, and proceed then to examine various recent papers on the above topics as well as various applications.

Examination: The evaluation of students taking the course for credit will be based on: (i) the presentation of one paper and the discussion of one paper to the class; (ii) performance in the homework assignments (iii) participation in class.

TA: Matteo Escudè

1 Risk Sharing with Complete and Incomplete Markets

1.1 Two Period Exchange Economies

- Arrow Debreu equilibria and competitive equilibria with sequential trading.
- Complete vs. incomplete financial markets.
- No arbitrage properties
- Stochastic discount factors
- Efficiency Properties of Competitive Equilibria
- Fully Insurable Risk and Sunspot Equilibria
- Value of Information

Magill, M. and W. Shafer: Incomplete Markets, in W. Hildenbrand and H. Sonnenschein (eds.), *Handbook of Mathematical. Economics.*, vol. IV (ch. 30).

(*) Magill, M. and M. Quinzii (1996): *Theory of Incomplete Markets*, MIT Press (ch. 2, 4)

Davila, Julio, Jay H. Hong, Per Krusell, and José-Víctor Ríos-Rull. 2012. “Constrained Efficiency in the Neoclassical Growth Model With Uninsurable Idiosyncratic Shocks.” *Econometrica*, 80(6), 2431–2467.

Hirshleifer, J. (1971): The Private and Social Value of Information and the Reward to Inventive Activity, *American Economic Review* 61, 561-574.

1.2 Firms and Corporate Finance

- Firms’ optimal decisions with incomplete markets
- Optimal capital structure and Modigliani Miller Theorem

(*) Mas-Colell, A., M. Whinston and J. Green (1995): *Microeconomic Theory*, Oxford University Press (ch. 19.G)

Tirole, J. (2006): *The Theory of Corporate Finance*, Princeton University Press (ch. 3,6),

Allen, F. and D. Gale (1988): Optimal Security Design, *Review of Financial Studies* 1 229-263.

Allen, F. and D. Gale (1991): Arbitrage, Short Sales and Financial Innovation, *Econometrica* 59 1041-1068.

Bisin, A., P. Gottardi and G. Ruta (2014): Equilibrium Corporate Finance and Intermediation, <http://apps.eui.eu/Personal/Gottardi/MakoABPGJune20-14.pdf>.

1.3 Infinite Horizon Economies

- Again on the Equivalence between Arrow Debreu Equilibria and Equilibria with Sequential Trades
- Debt Constraints and Ponzi Schemes
- Risk Sharing with Incomplete Markets

(* parts) Ljungqvist, L. and T. Sargent (2004): *Recursive Macroeconomic Theory*, II Ed., MIT Press (ch. 8, 13, 17).

Levine D. and W. Zame (1996): "Debt Constraints and Equilibrium in Infinite Horizon Economies with Incomplete Markets", *Journal of Mathematical Economics* 26, 103-131.

Levine D. and W. Zame (2001): Does Market Incompleteness Matter?, *Econometrica* 70, 1805-1840. [a simpler version of this paper is at <http://www.dklevine.com/papers/nether2.pdf>]

1.4 Private Information over Aggregate States (Insider Trading)

(*) Mas-Colell, A., M. Whinston and J. Green (1995): *Microeconomic Theory*, Oxford University Press, 1995 (chapter 19.H)

(*) Grossman, S. and J. Stiglitz (1981): On the Impossibility of Informationally Efficient Markets, *Amer. Econ. Rev.*, 393-408.

Grossman, S. and J. Stiglitz (1976): Information and Competitive Price Systems, *Amer. Econ. Rev.*, 246-253.

2 Risk Sharing in Markets with Frictions (Limited Commitment and Default)

2.1 Limited Punishments for Default

(*) Dubey, P., J. Geanakoplos and M. Shubik (2005): Default and Efficiency in a General Equilibrium Model with Incomplete Markets, *Econometrica* 73, 1-37.

Chatterjee, S., D. Corbae, M. Nakajima and V. Rios-Rull (2007): A Quantitative Theory of Unsecured Consumer Credit with Risk of Default, *Econometrica* 75 (6), 1525-1589.

2.2 Borrowing Constraints

Kehoe, T. and D. Levine (1993): Debt Constrained Asset Markets, *Rev. Econ. Studies*, 865-888.

(*) Kehoe, T. and D. Levine (2001): Liquidity Constrained vs. Debt Constrained Markets, *Econometrica*, 575-598

Alvarez, F. and U. Jermann (2000): Efficiency, Equilibrium, and Asset Pricing with Risk of Default, *Econometrica*, 775-798.

Hellwig, C. and G. Lorenzoni (2009): Bubbles and Self-Enforcing Debt, *Econometrica* 77(4), 1137-1164.

Kehoe, P. and F. Perri (2004): Competitive Equilibria with Limited Enforcement, *Journal of Economic Theory*, vol. 119(1), pages 184-206.

2.3 Collateralized Lending

Fostel, A. and J. Geanakoplos (2008): Leverage Cycles and the Anxious Economy, *American Economic Review*, 98(4): 1211-1244.

(*) Geanakoplos, J. (2003): Promises, Promises, <http://dido.econ.yale.edu/~gean/art/p1057.pdf>

Geanakoplos, J. (2009): The Leverage Cycle, in D. Acemoglu, K. Rogoff, and M. Woodford, eds., NBER Macroeconomics Annual 2009, Vol. 24, University of Chicago Press, Chicago, 2010, pp. 1-6, <http://cowles.econ.yale.edu/%7Egean/art/p1304.pdf>

Gottardi, P. and F. Kubler (2014): Dynamic Competitive Economies with Complete Markets and Collateral Constraints, http://apps.eui.eu/Personal/Gottardi/CollcomREV_281114.pdf

Kilenthong, W. and R.M: Townsend (2014): Segregated Security Exchanges with Ex Ante Rights to Trade: A Market-Based Solution to Collateral-Constrained Externalities, NBER Working Paper No. 20086, 2014.
http://www.robertmtownsend.net/sites/default/files/files/papers/working_papers/SegregateSecurityExchanges.pdf.

Kiyotaki, N. and J. Moore (1997): Credit Cycles. *Journal of Political Economy*, 105(2), pp. 211-48.

Krishnamurthy, Arvind (2003): Collateral Constraints and the Amplification Mechanism, *Journal of Economic Theory* 111(2), pp. 277-292.

Lorenzoni, G. (2008): Inefficient Credit Booms, *Review of Economic Studies* 75 (3), 809-833

2.4 Agency Costs, Liquidity

Bernanke, B. and M. Gertler (1989): Agency Costs, Net Worth and Business Fluctuations, *American Economic Review*, 79, 14-31.

Kiyotaki, N. and J. Moore (2008): Liquidity, Business Cycles and Monetary Policy, <http://www.princeton.edu/~kiyotaki/papers/ChiKM6-1.pdf>

James Dow, Gary Gorton and Arvind Krishnamurthy (2005): Equilibrium Investment and Asset Prices under Imperfect Corporate Control, *American Economic Review* 95(3), 659-681.

2.5 Decentralized markets

Duddie, D., N. Garleanu and L. Pedersen (2005): Over-the-Counter Markets, *Econometrica* 2005, Volume 73: 1815-1847.

3 Financial intermediation

3.1 Competitive equilibria with Financial Intermediation

Diamond, D., and P. Dybvig (1983) Bank runs, deposit insurance, and liquidity, *Journal of Political Economy*, 91, 401-419.

(*) Allen, F. and D. Gale (2004a): Financial Fragility, Liquidity and Asset Prices, *Journal of the European Economic Association* 2, 1015—1048.

Allen, F. and D. Gale (2004b): Financial Intermediaries and Markets, *Econometrica* 72, 1023—1061.

Holmstrom, B. and J. Tirole (1997): Financial Intermediation, Loanable Funds and the Real Sector, *Quarterly Journal of Economics* 112, 663-691.

3.2 Financial Contagion

Acemoglu, D., Ozdaglar, A., & Tahbaz-Salehi, A. (2015): Systemic risk and stability in financial networks, *American Economic Review*, 105(2), pp. 564-608.

Allen, F., & Gale, D. (2000): Financial contagion. *Journal of Political Economy*, 108 (1), 1-33.

Alvarez, F., & Barlevy, G. (2014): Mandatory disclosure and financial contagion. Tech. rep., University of Chicago, https://www.chicagofed.org/digital_assets/publications/working_papers/2014/wp2014_04.pdf.

Cabrales, A., Gottardi, P., & Vega-Redondo, F. (2014): Risk-sharing and contagion in networks, <http://apps.eui.eu/Personal/Gottardi/robustcontagion-08Nov14-2space.pdf>

Cabrales, A., D. Gale and P. Gottardi (2015), "Financial Contagion in Networks", mimeo, <http://apps.eui.eu/Personal/Gottardi/Survey%20Oxford%20Cabrales%20Gale%20Gottardi050315-3.pdf>

Elliott, M., Golub, B., and Jackson, M. O. (2014): Financial networks and contagion. *American Economic Review*, 104 (10), 3115-3153, doi: 10.1257/aer.104.10.3115, 2014.

4 Markets with Adverse Selection (liquidity and policy interventions)

(*) Bisin, A. and P. Gottardi: lecture notes, <http://apps.eui.eu/Personal/Gottardi/lnotesasy.pdf>

Bisin, A. and P. Gottardi (2006): Efficient Competitive Equilibria with Adverse Selection, *Journal of Political Economy* 114 (June 2006), 485 - 516.

Dubey, P. and J. Geanakoplos (2002): Competitive Pooling: Rothschild - Stiglitz Reconsidered, *Quarterly Journal of Economics*, 117(4), 1529-1570.

Fuchs, W. and A. Skrzypacz (2013): Costs and Benefits of Dynamic Trading in a Lemons Market, <https://sites.google.com/site/wfuchs/research/dynamic-lemons-1>.

Gale, D. (1992): A Walrasian Theory of Markets with Adverse Selection, *Review of Economic Studies*, 59 (2), 229-255.

Guerrieri, V., R. Shimer and R. Wright (2010): Adverse Selection in Competitive Search Equilibrium, *Econometrica*, 78 (6), 1823-1862.

Guerrieri, V., R. Shimer (2013): Dynamic Adverse Selection: A Theory of Illiquidity, Fire Sales, and Flight to Quality, forthcoming in the *American Economic Review*, <http://faculty.chicagobooth.edu/veronica.guerrieri/research/das-2013-04-24.pdf>

Tirole, J. (2012): Overcoming Adverse Selection: How Public Intervention Can Restore Market Functioning, *American Economic Review*, 102(1): 29-59

5 Papers for presentation

Wang, C. (2018): Core-Periphery Trading Networks, <http://finance.wharton.upenn.edu/~wangchj/papers/>

Malamud, S. and M. Rostek (2017): Decentralized Exchange, *The American Economic Review* 107, 11, 3320-3362, https://www.ssc.wisc.edu/~mroste/DE_AER.pdf

Chang, B. and S. Zhang (2018): Endogenous Market Making and Network Formation, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2600242

Babus, A. and C. Parlato (2015): Strategic Fragmented Markets, <http://www.anababus.net/research/>

Babus, A. (2016): The Formation of Financial Networks, *RAND Journal of Economics*, vol. 47, 239-272, 2016. <http://www.anababus.net/research/formnet.pdf>

Davila, E. and A. Korinek (2018): Pecuniary Externalities in Economies with Financial Frictions, *The Review of Economic Studies*, Volume 85, Issue 1, 1 January 2018, Pages 352-395

Fostel, A. and J. Geanakoplos (2014): Endogenous Collateral Constraints and the Leverage Cycle, *Annual Review of Economics* (May 2014), 6(1): 771-799. <https://cpb-us-w2.wpmucdn.com/campuspress.yale.edu/dist/4/1744/files/2017/07/85.Endogenous-Collateral-Constraints-and-the-Leverage-Cycle-1xc4c6c.pdf>

Fostel, A. and J. Geanakoplos (2015): Financial Innovation, Collateral and Investment, *American Economic Journal: Macroeconomics* (March 2015), 8(1): 242-284

Acharya, V. and S. Viswanathan (2011): Leverage, Moral Hazard, and Liquidity, *The Journal of Finance* Volume 66, Issue 1, <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1540-6261.2010.01627.x>

Kurlat, P. (2013): Lemons Markets and the Transmission of Aggregate Shocks, *American Economic Review*, June 2013

Cordoba, J.C. and M. Ripoll (2004): Credit Cycles Redux, *International Economic Review*, <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.0020-6598.2004.00296.x>

Kuong, J.C.F. (2014): Self-fulfilling Fire Sales: Fragility of Collateralised Short-term Debt Markets, https://www.eurofidai.org/Kuong_2014.pdf

Nikolov, K. (2014); Collateral Amplification under Complete Markets, <https://www.ecb.europa.eu/pub/>

Mendicino, C. (2011): On the amplification role of collateral constraints, <https://www.bportugal.pt/sites/>

Gamba, A., D. Gale and M. Lucchetta (2017): “Dynamic Bank Capital Regulation in Equilibrium,” https://18798-presscdn-pagely.netdna-ssl.com/douglas_gale/wp-content/uploads/sites/7635/bank-capital-regulation-in-equilibrium.pdf