

# Financial intermediation and the real economy

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**Overview:** This course uses economic theory and empirical evidence to study the links between financial markets and the real economy, with a specific focus on the role of financial intermediaries. We will discuss questions such as: how does access to credit (or the lack thereof) affect firms and households? What are the implications for growth and economic development? What has changed in the recent decades, e.g., how does financial innovation affect the traditional bank business model?

The lectures will be accompanied by a tutorial. In the tutorial key concepts from the lecture will be discussed to foster students' understanding. Further, students will learn how to use R<sup>1</sup> to implement/replicate some of the empirical findings discussed in the lecture as well as how to interpret results and deal with challenges associated with conducting empirical research.

**When:** Thursdays from 16:00 - 20:00 (starting April 11)

**Where:** In presence (except for June 27); room: SR 122 (Carl-Zeiß-Straße 3)

**Exam format:** Term paper that contains both a conceptual part and an empirical exercise to be conducted using R or STATA (exam format subject to change)

**Prerequisites:** Econometrics (& **basic R skills**) / Microeconomic theory

## Readings:

- Required readings:

Lecture slides distributed electronically before each class

Papers marked “(\*)” in the outline below

- Additional readings:

Papers not marked “(\*)” in the outline below

Good book to refresh your econometric knowledge: Joshua D. Angrist and Jörn-Steffen Pischke, “Mostly Harmless Econometrics: An Empiricist’s Companion”, Princeton University Press, 2009.

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<sup>1</sup>You can use other statistical tools to solve the problem sets, however, the tutorials will exclusively use R and students are required to use either R or Stata in the exam. The first tutorial will (partly) be an R refresher session.

## Outline by week:

- [1. ] April 11 – Lecture 1: Introduction/Finance and growth
- [2. ] April 18 – Tutorial 1: **R** refresher training
- [3. ] April 25 – Lecture 2: Finance and growth
- [4. ] May 02 – Tutorial 2: Problem set 1 — Finance and growth
- [ ] May 09 – Public holiday
- [5. ] May 16 – Lecture 3: Lending to firms
- [6. ] May 23 – Tutorial 3: Problem set 2 — Lending to firms
- [7. ] May 30 – Lecture 4: Lending to households
- [8. ] June 06 – Tutorial 4: Problem set 3 — Lending to households
- [9. ] June 13 – Lecture 5: Securitization
- [10. ] June 20 – Tutorial 5: Problem set 4 — Securitization
- [11. ] June 27 – Lecture 6 (4pm to 6pm): Allocation of credit (Online)  
Tutorial 6 (6pm to 8pm): Allocation of credit (Online)
- [12. ] July 04 – Lecture 7 (4pm to 6pm): Recap and Q&A  
Tutorial 7 (6pm to 8pm): Problem set 5 — Recap

See next page for details and required readings.

**Detailed outline and readings:** The course outline subject to change. Papers marked “(\*)” are required readings. (Note that the readings are sorted by topic, not by lecture week.)

### **Topic 1. Introduction – Size of the financial sector**

This introductory session presents stylized facts about the development of the financial sector over the past decades.

- (\*) Robin Greenwood and David Scharfstein, “The Growth of Finance,” *Journal of Economic Perspectives* 27(2), 2013.

Thomas Philippon and Ariell Reshef, “An International Look at the Growth of Modern Finance,” *Journal of Economic Perspectives* 27(2), 2013.

### **Topic 2. Finance and growth**

We take a closer look at the “finance-growth nexus” with a specific focus on the role of the banking sector.

- (\*) Ross Levine, “Finance and Growth: Theory and Evidence,” in *Handbook of Economic Growth*, Chapter 12, 2005. [Required: Sections 1 and 2, i.e., pages 866-887]

- (\*) Jith Jayaratne and Philip E Strahan, “The finance-growth nexus: Evidence from bank branch deregulation,” *Quarterly Journal of Economics* 111 (3), 1996.

Raghuram Rajan and Luigi Zingales, “Financial Dependence and Growth,” *American Economic Review* 88 (3), 1998.

Thorsten Beck, Ross Levine, and Norman Loayza, “Finance and the sources of growth,” *Journal of Financial Economics* 58, 2000.

Rocco R. Huang, “Evaluating the real effect of bank branching deregulation: Comparing contiguous counties across US state borders,” *Journal of Financial Economics* 87, 2008.

John Bai, Daniel Carvalho, and Gordon M. Phillips, “The Impact of Bank Credit on Labor Reallocation and Aggregate Industry Productivity,” *Journal of Finance* 73 (6), 2018.

### Topic 3. Lending to firms

We look at the effects of bank lending (or the lack thereof) on firms. We first provide a theoretical foundation and then discuss empirical evidence on the effects of credit supply on firm-level real outcomes such as employment and investment.

- (\*) Bengt Holmstrom and Jean Tirole, “Financial intermediation, loanable funds, and the real sector,” *Quarterly Journal of Economics* 112 (3), 1997. [Required: Sections I-III, i.e., pages 663-679]
- (\*) Gabriel Chodorow-Reich, “The Employment Effects of Credit Market Disruptions: Firm-level Evidence from the 2008-09 Financial Crisis,” *Quarterly Journal of Economics* 129 (1), 2014.

Daniel L. Greenwald, John Krainer, and Pascal Paul, “The Credit Line Channel,” *Working paper*, 2020.

Kilian Huber, “Disentangling the Effects of a Banking Crisis: Evidence from German Firms and Counties,” *American Economic Review* 108(3), 2018.

Miriam Bruhn and Inessa Love, “The Real Impact of Improved Access to Finance: Evidence from Mexico,” *Journal of Finance* 69(3), 2013.

Asim Ijaz Khwaja and Atif Mian, “Tracing the Impact of Bank Liquidity Shocks: Evidence from an Emerging Market,” *American Economic Review* 98(4), 2008.

J. David Brown and John S. Earle, “Finance and Growth at the Firm Level: Evidence from SBA Loans,” *Journal of Finance* 72(3), 2017.

Tobias Berg, Markus Reisinger, and Daniel Streitz “Spillover Effects in Empirical Corporate Finance,” *Journal of Financial Economics*, forthcoming.

#### Topic 4. Lending to households

We look at the effects of bank lending and access to banking services for households, e.g., effects on employment and indebtedness.

- (\*) Brian T. Melzer, “The Real Costs of Credit Access: Evidence from the Payday Lending Market,” *Quarterly Journal of Economics* 126(1), 2011.
- (\*) Claire Célérier and Adrien Matray, “Bank-Branch Supply, Financial Inclusion, and Wealth Accumulation,” *Review of Financial Studies* 32(2), 2019.  
Marco Di Maggio, Angela Ma, and Emily Williams, “In the Red: Overdrafts, Payday Lending and the Underbanked,” *Working paper*, 2020.  
Brian T. Melzer, “Spillovers from costly credit,” *Review of Financial Studies* 31, 2018.  
James R. Brown, J. Anthony Cookson, and Rawley Z. Heimer, “Growing up without finance,” *Journal of Financial Economics* 134(3), 2019.  
Pascaline Dupas and Jonathan Robinson, “Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya,” *AEJ: Applied Economics* 5(1), 2013.  
Pascaline Dupas, Dean Karlan, Jonathan Robinson, and Diego Ubfa, “Banking the Unbanked? Evidence from Three Countries,” *AEJ: Applied Economics* 10(2), 2018.

#### Topic 5. Securitization

We talk about debt securitization, one of the most important financial innovations in the recent decades. We look both at effects of securitization on (mortgage) lending to households and at the effects of securitization on lending to firms.

- (\*) Atif Mian and Amir Sufi, “The Consequences of Mortgage Credit Expansion: Evidence from the U.S. Mortgage Default Crisis,” *Quarterly Journal of Economics* 124(4), 2009.
- (\*) Anil Shivdasani and Yihui Wang, “Did Structured Credit Fuel the LBO Boom?,” *Journal of Finance* 66(4), 2011  
Gabriel Jiménez, Atif Mian, José-Luis Peydró, and Jesús Saurina, “The real effects of the bank lending channel,” *Journal of Monetary Economics* 115, 2020.  
Benjamin J. Keys, Tanmoy Mukherjee, Amit Seru, and Vikrant Vig, “Did Securitization Lead to Lax Screening? Evidence from Subprime Loans,” *Quarterly Journal of Economics* 125(1), 2010.  
Yihui Wang and Han Xia “Do Lenders Still Monitor When They Can Securitise Loans?,” *Review of Financial Studies* 27(8), 2014.  
Tobias Berg, Daniel Streitz, and Michael Wedow “Credit supply shocks: financing real growth or takeovers?,” *Working Paper*, 2021.  
Manuel Adelino, Antoinette Schoar, and Felipe Severino “Loan Originations and Defaults in the Mortgage Crisis: The Role of the Middle Class,” *Review of Financial Studies* 29(7), 2016.

## Topic 6. Allocation of credit

We discuss the effects of *distortions* in the allocation of credit. We will see that under certain conditions banks may have incentives not to allocate resources to the most efficient borrowers and that this may have adverse effects on economic development.

(\*) Ricardo J. Caballero, Takeo Hoshi and Anil K. Kashyap, “Zombie lending and depressed restructuring in Japan,” *American Economic Review* 98 (5), 2008.

(\*) Marianne Bertrand, Antoinette Schoar, and David Thesmar, “Banking Deregulation and Industry Structure: Evidence from the French Banking Reforms of 1985,” *Journal of Finance* 62 (2), 2007.

Daniel Carvalho “The Real Effects of Government-Owned Banks: Evidence from an Emerging Market,” *Journal of Finance* 69 (2), 2014.

Diego Restuccia and Richard Rogerson, “The Causes and Costs of Misallocation,” *Journal of Economic Perspectives*, 31 (3), 2017.

Joe Peek and Eric Rosengren, “Unnatural selection: Perverse incentives and the misallocation of credit in Japan,” *American Economic Review* 95 (4), 2005.

Viral V. Acharya, Tim Eisert, Christian Eufinger, and Christian Hirsch, “Whatever It Takes: The Real Effects of Unconventional Monetary Policy,” *Review of Financial Studies* 32 (9), 2019.