

# 12F008

## Banking Theory

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### Introduction

With the development of the information approach to markets, behavior and contracts, the application of this methodology to the world of banking has yield interesting insights that are directly relevant for central banks and regulatory agencies. The course will focus on applied game theory, but will also describe how banking institutions operate, banking regulation as well as some empirical evidence that motivates the theoretical work. This is definitely a must for someone that wants to work in a central bank.

### Objectives

The objective of this course is:

- 1) to understand the role imperfect information and the role of financial institutions in the economy
- 2) to explore how modeling imperfect information can lead to interesting policy recommendations
- 3) to grasp some understanding of financial market institutions.

### Required Background Knowledge

The course will build on basic game theory concepts and make use of contract theory to address asymmetric information issues in the area of banking. Consequently, a microeconomic background is welcome. In addition, some basic finance background is also welcome.

The required institutional aspects of banking will be covered in the course.

### Learning Outcomes

The student will learn the main issues the theory of banking is facing nowadays. This will require to go through classical models of banking as well as to recent developments. At the end of the course, the student should be familiar with the main tools in modeling banking issues and the main results.

### Methodology

In addition to the lectures, the student will be asked to solve a problem set each week. This will require to use some modeling building blocks to solve the exercise and will improve its ability to model and interpret a specific issue. The course will also require to write a short essay making a critical review of a well known paper chosen according to the student's preferences.

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### Evaluation

The evaluation combines a final examination (70%) with an 4 pages essay on a paper selected by the student mainly among the ones published in top economic and finance journals.

### Course contents

The course at a glance:

Session	Title, materials and cases
1	<b>Why Do Financial Intermediaries Exist?</b>
2	<b>The Industrial Organization Approach to banking</b>
3	<b>The Borrower-Lender Contract in Asymmetric Information</b>
4	<b>Equilibrium and Rationing in the Credit Market</b>
5	<b>Macroeconomic Consequencies of the Financial Intermediation</b>
6	<b>Liquidity</b>
7	<b>Individual Bank Runs and Systemic Risk</b>
8	<b>Managing Risk in the Banking Firm</b>
9	<b>Banking Regulation</b>

### Bibliography

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 Gorton, Gary and Andrew Winton. "Financial Intermediation". Chapter 8 in G.M. Constantinides & M. Harris & R. M. Stulz (ed.), 2003. "Handbook of the Economics of Finance," Handbook of the Economics of Finance, Elsevier, volume 1, number 1, March.

#### 2. Why Do Financial Intermediaries Exist?

FR, pages 1-24, 30-49

**BBT, Part I: Discussion**

#### References:

Allen and Gale. "Intertemporal insurance"

Bolton, P., and X. Freixas, "Equity, Bonds and Bank Debt: Capital Structure and Financial Market Equilibrium under Asymmetric Information" *Journal of Political Economy*, April 2000, 2, 108, 324-51

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Holmstrom, B., and J. Tirole, "Financial Intermediation, Loanable Funds, and the Real Sector", *Quarterly Journal of Economics*, 1997 (BBT, 23).

#### 3. The Industrial Organization Approach

FR, Chapter 3

**BBT, Part V: Discussion p.569**

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- Giovanni Dell'Ariccia and Robert Marquez. "Lending Booms and Lending Standards".
- Yoshiaki Ogura. "Learning from a rival bank and lending boom". *Journal of Financial Economics*, 15 (2006)

### 4. The Borrower-Lender Contract in Asymmetric Information

FR, pages 127-43 and 146-57

#### References:

- Winton, A. "Competition among Financial Intermediaries when Diversification Matters", *Journal of Financial Intermediation*, 6, 1997, pp. 307-346 (BBT, 18)

### 5. Equilibrium and Rationing in the Credit Market

FR, pages 171-85

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[www.barcelonagse.eu](http://www.barcelonagse.eu)

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### 6. Macroeconomic Consequences of the Financial Intermediation

FR, pages 193-212

#### BBT, Part VII, Discussion

#### References:

- Bernake, B., and Gertler M., "Financial Fragility and Economic Performance", *Quarterly Journal of Economics*, 1990; vol. 105; 1: 87-114.
- Holmström, B., and Tirole, J., "Private and Public Supply of Liquidity", *Journal of Political Economy* 1998. (BBT, 6)
- Jaraytne and Strahan 1996
- Demirguc-Kunt and Maksimovic, 1998
- Beck, Demirguc-Kunt and Maksimovic, 2005
- Laeven 2004

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### 7. Liquidity

Dang, Tri Vi ; Gary Gorton and Bengt Holmström (2015) "Ignorance, Debt and Financial crises", Columbia WP  
 Farhi, E., & Tirole, J. (2012). Collective Moral Hazard , Maturity Mismatch , and Systemic Bailouts, *American Economic Review*, 102 (1) 60-93.  
 Freixas, Xavier; Antoine Martin and David Skeie, 2011. "Bank Liquidity, Interbank Markets, and Monetary Policy," *Review of Financial Studies*, Society for Financial Studies, vol. 24(8), pages 2656-2692.  
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### 7. Individual Bank Runs and Systemic Risk

FR, pages 220-21;224-48

#### BBT, Part II(discussion) and III (discussion)

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 Franklin Allen and Elena Carletti. "Interbank Market Liquidity and Central Bank Intervention". May 2008  
 Rochet and Vives, 2004

### 8. Managing Risk in the Banking Firm

FR, pages 286-96

Default risk Institutional context Evaluating the cost of default risk Empirical evidence (credit scoring) Extensions  
 Portfolio risk Modern portfolio theory Application to the banking firm The impact of capital requirements Banks as market makers

#### References:

Rochet, J.C., "Capital Requirements and the Behaviour of Commercial Banks", *European Economic Review*, 1992; vol. 36; 5: 1137-70.

### 9. Banking Regulation

FR, pages 305-340

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**BBT, Part IV A discussion**

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 George Pennacchi. "Deposit insurance, bank regulation, and system risks". *Journal of Monetary Economics*. Elsevier. Vol. 53 (1). January 2006  
 Aghion, P., P. Bolton and S. Fries, "Optimal Design of Bank Bailouts: The Case of Transition Economies" JITE, p.51-70 (BBT, 14)  
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 Bhattacharya, S., A. Boot and A. Thakor, "The Economics of Bank Regulation",

**Professor's Biography**

1. **"The Credit Ratings Game"**. Patrick Bolton, Xavier Freixas and Joel Shapiro. *The Journal of Finance*, Volume 67, Issue 1, Pages: 85–112, 2012.
2. **"Systemic Risk, Interbank Relations and Liquidity Provision by Central Banks"**, *Journal of Money Credit and Banking* 32 (3, part 2), August 2000, 611-638 (with Bruno Parigi and Jean-Charles Rochet) Reprinted in Charles Goodhart and Gerhard Illing editors, "Financial Crises, Contagion and the Lender of Last Resort", Oxford University Press
3. **"Bank Liquidity, Interbank Markets and Monetary Policy"**. Xavier Freixas, Antoine Martin and David Skeie. *The Review of Financial Studies*, 24(8): 2656-2692. 2011
4. **"Conflicts of Interest, Information Provision and Competition in Banking"**. *Journal of Financial Economics*, 85, August 2007, 297-330 (with Patrick Bolton and Joel Shapiro)
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8. **"Contagion and Efficiency in Gross and Net Interbank Payment Systems"** (with Bruno Parigi). *Journal of Financial Intermediation*, 7 (1), January 1998, pp. 3-31. D. P. Jacobs Prize to the most significant paper in 1998
9. **"Planning under Incomplete Information and the Ratchet Effect"** *Review of Economic Studies*, Vol. 52(2), no. 169 (April 1985), pp. 173-192 (with R. Guesnerie and J. Tirole)
10. **"Microeconomics of Banking"**. (With Jean-Charles Rochet). MIT Press, 1997 (2<sup>nd</sup> edition 2007), translated to Spanish, Polish and Chinese, (3000+ citations in Google Scholar)