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XAVIER FREIXAS AND

JEAN-CHARLES ROCHET

MICROECONOMICS OF

BANKING



Microeconomics of Banking

Second Edition

Xavier Freixas and Jean-Charles Rochet

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Microeconomics of Banking

A la mémoire de Jean-Jacques Laffont

Preface

During the last three decades, the economic theory of banking has entered a process of change that has overturned economists' traditional view of the banking sector. Before that, the banking courses of most doctoral programs in economics, business, or finance focused either on management aspects (with a special emphasis on risk) or on monetary aspects and their macroeconomic consequences. Thirty years ago, there was no such thing as a microeconomic theory of banking, for the simple reason that the Arrow-Debreu general equilibrium model (the standard reference for microeconomics at that time) was unable to explain the role of banks in the economy.¹

Since then, a new paradigm has emerged (the asymmetric information paradigm), incorporating the assumption that different economic agents possess different pieces of information on relevant economic variables and will use this information for their own profit. This paradigm has proved extremely powerful in many areas of economic analysis. In banking theory it has been useful in explaining the role of banks in the economy and pointing out the structural weaknesses of the banking sector (exposure to runs and panics, persistence of rationing on the credit market, recurrent solvency problems) that may justify public intervention.

This book provides a guide to this new microeconomic theory of banking. It focuses on the main issues and provides the necessary tools to understand how they have been modeled. We have selected contributions that we found to be both important and accessible to second-year doctoral students in economics, business, or finance.

What Is New in the Second Edition?

Since the publication of the first edition of this book, the development of academic research on the microeconomics of banking has been spectacular. This second edition attempts to cover most of the publications that are representative of these new developments. Three topics are worth mentioning.

First, the analysis of competition between banks has been refined by paying more attention to nonprice competition, namely, competition through other strategic variables than interest rates or service fees. For example, banks compete on the level of the asset risk they take or the intensity of the monitoring of borrowers. These dimensions are crucial for shedding light on two important issues: the competition-stability trade-off and the effect of entry of new banks, both of concern for prudential regulation.

Second, the literature on the macroeconomic impact of the financial structure of firms has made significant progress on at least two questions: the transmission of monetary policy and the effect of capital requirements for banks on the functioning of the credit market.

Finally, the theoretical foundations of banking regulation have been clarified, even though the recent developments in risk modeling (due in particular to the new Basel accords on banks solvency regulation) have not yet led to a significant parallel development of economic modeling.

Prerequisites

This book focuses on the theoretical aspects of banking. Preliminary knowledge of the institutional aspects of banking, taught in undergraduate courses on money and banking, is therefore useful. Good references are the textbooks of Mishkin (1992) or Garber and Weisbrod (1992). An excellent transition between these textbooks and the theoretical material developed here can be found in Greenbaum and Thakor (1995).

Good knowledge of microeconomic theory at the level of a first-year graduate course is also needed: decision theory, general equilibrium theory and its extensions to uncertainty (complete contingent markets) and dynamic contexts, game theory, incentives theory. An excellent reference that covers substantially more material than is needed here is Mas Colell, Whinston, and Green (1995). More specialized knowledge on contract theory (Salanié 1996; Laffont and Martimort 2002; Bolton and Dewatripont 2005) or game theory (Fudenberg and Tirole 1991; Gibbons 1992; Kreps 1990; Myerson 1991) is not needed but can be useful. Similarly, good knowledge of the basic concepts of modern finance (Capital Asset Pricing Model, option pricing) is recommended (see, e.g., Huang and Litzenberger 1988 or Ingersoll 1987). An excellent complement to this book is the corporate finance treatise of Tirole (2006). Finally, the mathematical tools needed are to be found in undergraduate courses in differential calculus and probability theory. Some knowledge of diffusion processes (in connection with Black-Scholes's option pricing formula) is also useful.

Outline of the Book

Because of the discouraging fact that banks are useless in the Arrow-Debreu world (see section 1.7 for a formal proof), our first objective is to explain why financial intermediaries exist. In other words, what are the important features of reality that are overlooked in the Arrow-Debreu model of complete contingent markets? In chapter 2 we explore the different theories of financial intermediation: transaction costs, liquidity insurance, coalitions of borrowers, and delegated monitoring.

The second important aspect that is neglected in the complete contingent market approach is the notion that banks provide costly services to the public (essentially management of loans and deposits), which makes them compete in a context of product differentiation. This is the basis of the industrial organization approach to banking, studied in chapter 3.

Chapter 4 is dedicated to optimal contracting between a lender and a borrower. In chapter 5 we study the equilibrium of the credit market, with particular attention to the possibility of rationing at equilibrium, a phenomenon that has provoked important discussions among economists.

Chapter 6 is concerned with the macroeconomic consequences of financial imperfections. In chapter 7 we study individual bank runs and systemic risk, and in chapter 8 the management of risks in the banking firm. Finally, chapter 9 is concerned with bank regulation and its economic justifications.

Teaching the Book

According to our experience, the most convenient way to teach the material contained in this book is to split it into two nine-week courses. The first covers the most accessible material of chapters 1–5. The second is more advanced and covers chapters 6–9. At the end of most chapters we have provided a set of problems, together with their solutions. These problems not only will allow students to test their understanding of the material contained in each chapter but also will introduce them to some advanced material published in academic journals.

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The material of this book has been repeatedly taught in Paris (ENSAE), Toulouse (Master “Marchés et Intermédiaires Financiers”), Barcelona (Universitat Pompeu Fabra), Philadelphia (Wharton School), and Wuhan University. We benefited a lot from the remarks of our students. The encouragement and intellectual support of our colleagues in Toulouse (especially Bruno Biais, André Grimaud, Jean-Jacques Laffont, François Salanié, and Jean Tirole) and Barcelona (Thierry Foucault and José Marin) have also been very useful. Finally, we are extremely indebted to Claudine Moisan and Marie-Pierre Boé, who competently typed the (too many) different versions of this book without ever complaining about the sometimes contradictory instructions of the two co-authors.

The second edition benefited from the comments of many people, especially Judit Montoriol, Henri Pagès, and Henriette Prast.

Note

1. This disappointing property of the Arrow-Debreu model is explained in chapter 1.

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Microeconomics of Banking

Contents

List of Figures	xv
Preface	xvii
1 Introduction	1
1.1 What Is a Bank, and What Do Banks Do?	1
1.2 Liquidity and Payment Services	2
1.2.1 Money Changing	3
1.2.2 Payment Services	4
1.3 Transforming Assets	4
1.4 Managing Risks	5
1.4.1 Credit Risk	5
1.4.2 Interest Rate and Liquidity Risks	5
1.4.3 Off-Balance-Sheet Operations	6
1.5 Monitoring and Information Processing	6
1.6 The Role of Banks in the Resource Allocation Process	7
1.7 Banking in the Arrow-Debreu Model	7
1.7.1 The Consumer	8
1.7.2 The Firm	9
1.7.3 The Bank	9
1.7.4 General Equilibrium	9
1.8 Outline of the Book	10
2 The Role of Financial Intermediaries	15
2.1 Transaction Costs	18
2.1.1 Economies of Scope	18
2.1.2 Economies of Scale	19
2.2 Coalitions of Depositors and Liquidity Insurance	20
2.2.1 The Model	20

2.2.2	Characteristics of the Optimal Allocation	21
2.2.3	Autarky	21
2.2.4	Market Economy	22
2.2.5	Financial Intermediation	23
2.3	Coalitions of Borrowers and the Cost of Capital	24
2.3.1	A Simple Model of Capital Markets with Adverse Selection	25
2.3.2	Signaling through Self-Financing and the Cost of Capital	26
2.3.3	Coalitions of Borrowers	28
2.3.4	Suggestions for Further Reading	28
2.4	Financial Intermediation as Delegated Monitoring	30
2.5	The Choice between Market Debt and Bank Debt	34
2.5.1	A Simple Model of the Credit Market with Moral Hazard	34
2.5.2	Monitoring and Reputation	36
2.5.3	Monitoring and Capital	39
2.5.4	Financial Architecture	42
2.5.5	Credit Risk and Dilution Costs	43
2.6	Liquidity Provision to Firms	46
2.7	Suggestions for Further Reading	47
2.8	Problems	49
2.8.1	Strategic Entrepreneurs and Market Financing	49
2.8.2	Market versus Bank Finance	50
2.8.3	Economies of Scale in Information Production	50
2.8.4	Monitoring as a Public Good and Gresham's Law	51
2.8.5	Intermediation and Search Costs	52
2.8.6	Intertemporal Insurance	53
2.9	Solutions	54
2.9.1	Strategic Entrepreneurs and Market Financing	54
2.9.2	Market versus Bank Finance	55
2.9.3	Economies of Scale in Information Production	57
2.9.4	Monitoring as a Public Good and Gresham's Law	58
2.9.5	Intermediation and Search Costs	60
2.9.6	Intertemporal Insurance	62
3	The Industrial Organization Approach to Banking	69
3.1	A Model of a Perfect Competitive Banking Sector	70
3.1.1	The Model	70

3.1.2	The Credit Multiplier Approach	71
3.1.3	The Behavior of Individual Banks in a Competitive Banking Sector	72
3.1.4	The Competitive Equilibrium of the Banking Sector	75
3.2	The Monti-Klein Model of a Monopolistic Bank	78
3.2.1	The Original Model	78
3.2.2	The Oligopolistic Version	79
3.2.3	Empirical Evidence	80
3.3	Monopolistic Competition	81
3.3.1	Does Free Competition Lead to the Optimal Number of Banks?	81
3.3.2	The Impact of Deposit Rate Regulation on Credit Rates	84
3.3.3	Bank Network Compatibility	87
3.3.4	Empirical Evidence	88
3.4	The Scope of the Banking Firm	88
3.5	Beyond Price Competition	89
3.5.1	Risk Taking on Investments	89
3.5.2	Monitoring and Incentives in a Financial Conglomerate	93
3.5.3	Competition and Screening	95
3.6	Relationship Banking	99
3.6.1	The Ex Post Monopoly of Information	99
3.6.2	Equilibrium with Screening and Relationship Banking	102
3.6.3	Does Competition Threaten Relationship Banking?	103
3.6.4	Intertemporal Insurance	104
3.6.5	Empirical Tests of Relationship Banking	104
3.7	Payment Cards and Two-Sided Markets	107
3.7.1	A Model of the Payment Card Industry	108
3.7.2	Card Use	109
3.7.3	Monopoly Network	110
3.7.4	Competing Payment Card Networks	111
3.7.5	Welfare Analysis	111
3.8	Problems	112
3.8.1	Extension of the Monti-Klein Model to the Case of Risky Loans	112
3.8.2	Compatibility between Banking Networks	113
3.8.3	Double Bertrand Competition	113
3.8.4	Deposit Rate Regulation	114

3.9	Solutions	115
3.9.1	Extension of the Monti-Klein Model to the Case of Risky Loans	115
3.9.2	Compatibility between Banking Networks	116
3.9.3	Double Bertrand Competition	117
3.9.4	Deposit Rate Regulation	118
4	The Lender-Borrower Relationship	127
4.1	Why Risk Sharing Does Not Explain All the Features of Bank Loans	128
4.2	Costly State Verification	130
4.2.1	Incentive-Compatible Contracts	131
4.2.2	Efficient Incentive-Compatible Contracts	132
4.2.3	Efficient Falsification-Proof Contracts	133
4.3	Incentives to Repay	134
4.3.1	Nonpecuniary Cost of Bankruptcy	134
4.3.2	Threat of Termination	135
4.3.3	Impact of Judicial Enforcement	137
4.3.4	Strategic Debt Repayment: The Case of a Sovereign Debtor	139
4.4	Moral Hazard	143
4.5	The Incomplete Contract Approach	146
4.5.1	Private Debtors and the Inalienability of Human Capital	147
4.5.2	Liquidity of Assets and Debt Capacity	149
4.5.3	Soft Budget Constraints and Financial Structure	150
4.6	Collateral as a Device for Screening Heterogeneous Borrowers	153
4.7	Problems	157
4.7.1	Optimal Risk Sharing with Symmetric Information	157
4.7.2	Optimal Debt Contracts with Moral Hazard	158
4.7.3	The Optimality of Stochastic Auditing Schemes	159
4.7.4	The Role of Hard Claims in Constraining Management	160
4.7.5	Collateral and Rationing	160
4.7.6	Securitization	161
4.8	Solutions	161
4.8.1	Optimal Risk Sharing with Symmetric Information	161
4.8.2	Optimal Debt Contracts with Moral Hazard	162
4.8.3	The Optimality of Stochastic Auditing Schemes	163
4.8.4	The Role of Hard Claims in Constraining Management	164

4.8.5	Collateral and Rationing	164
4.8.6	Securitization	165
5	Equilibrium in the Credit Market and Its Macroeconomic Implications	171
5.1	Definition of Equilibrium Credit Rationing	172
5.2	The Backward-Bending Supply of Credit	173
5.3	Equilibrium Credit Rationing	175
5.3.1	Adverse Selection	175
5.3.2	Costly State Verification	177
5.3.3	Moral Hazard	178
5.4	Equilibrium with a Broader Class of Contracts	181
5.5	Problems	185
5.5.1	The Model of Mankiw	185
5.5.2	Efficient Credit Rationing	185
5.5.3	Too Much Investment	186
5.6	Solutions	186
5.6.1	The Model of Mankiw	186
5.6.2	Efficient Credit Rationing	187
5.6.3	Too Much Investment	188
6	The Macroeconomic Consequences of Financial Imperfections	193
6.1	A Short Historical Perspective	195
6.2	The Transmission Channels of Monetary Policy	196
6.2.1	The Different Channels	197
6.2.2	A Simple Model	198
6.2.3	Credit View versus Money View: Justification of the Assumptions and Empirical Evidence	200
6.2.4	Empirical Evidence on the Credit View	202
6.3	Financial Fragility and Economic Performance	203
6.4	Financial Development and Economic Growth	209
7	Individual Bank Runs and Systemic Risk	217
7.1	Banking Deposits and Liquidity Insurance	218
7.1.1	A Model of Liquidity Insurance	218
7.1.2	Autarky	219
7.1.3	The Allocation Obtained When a Financial Market Is Opened	219
7.1.4	The Optimal (Symmetric) Allocation	220
7.1.5	A Fractional Reserve Banking System	220

7.2	The Stability of the Fractional Reserve System and Alternative Institutional Arrangements	222
7.2.1	The Causes of Instability	222
7.2.2	A First Remedy for Instability: Narrow Banking	222
7.2.3	Regulatory Responses: Suspension of Convertibility or Deposit Insurance	224
7.2.4	Jacklin's Proposal: Equity versus Deposits	225
7.3	Bank Runs and Renegotiation	227
7.3.1	A Simple Model	227
7.3.2	Pledgeable and Nonpledgeable Cash Flows	228
7.3.3	Bank Runs as a Discipline Device	228
7.3.4	The Role of Capital	229
7.4	Efficient Bank Runs	230
7.5	Interbank Markets and the Management of Idiosyncratic Liquidity Shocks	233
7.5.1	The Model of Bhattacharya and Gale	233
7.5.2	The Role of the Interbank Market	234
7.5.3	The Case of Unobservable Liquidity Shocks	234
7.6	Systemic Risk and Contagion	235
7.6.1	Aggregate Liquidity and Banking Crises	236
7.6.2	Payment Systems and OTC Operations	238
7.6.3	Contagion through Interbank Claims	239
7.7	Lender of Last Resort: A Historical Perspective	242
7.7.1	Views on the LLR Role	243
7.7.2	Liquidity and Solvency: A Coordination Game	244
7.7.3	The Practice of LLR Assistance	246
7.7.4	The Effect of LLR and Other Partial Arrangements	247
7.8	Problems	248
7.8.1	Bank Runs and Moral Hazard	248
7.8.2	Bank Runs	249
7.8.3	Information-Based Bank Runs	249
7.8.4	Banks' Suspension of Convertibility	250
7.8.5	Aggregated Liquidity Shocks	251
7.8.6	Charter Value	252
7.9	Solutions	253
7.9.1	Banks Runs and Moral Hazard	253
7.9.2	Bank Runs	253