**Microeconomics of Banking Second Edition**

Xavier Freixas and Jean-Charles Rochet

                                                                    

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**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.

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 was unable to explain the role of banks in the economy.[[1]](#footnote-1)

For me: I do agree upon this. This approach Arrow Debreu is for full information for all agents and in a competitive bank system. See Lucas (1993), Lucas (2000) Lucas (2015).

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.

For me: This approach is a new distortion into Arrow Debreu framework.

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.

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First, the analysis of competition between banks has been refined by paying more attention to non-price 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-of[[2]](#footnote-2) 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 to the new Basel accords on banks solvency regulation) have not yet led to a significant parallel development of economic modeling.

Microeconomics of Banking

1 Introduction

1.1 What Is a Bank, and What Do Banks Do?

Banking operations may be varied and complex, but a simple operational definition of a bank is available: a bank is an institution whose current operations consist in granting loans and receiving deposits from the public - financial intermediary typical of commercial banks.

**Banks finance a significant fraction of their loans through the deposits of the public.**

This is the main explanation for the fragility of the banking sector and the justification for banking regulation.

Some economists predict that commercial banks offering both loan and deposit transactions will someday disappear in favor of two types of specialized institutions, on the one hand ‘‘narrow’’ banks or mutual funds, which invest the deposits of the public in traded securities, and on the other hand finance companies or credit institutions, which finance loans by issuing debt or equity.

Finally, banks provide unique services (liquidity and means of payment) to the general public. However, the public is not, in contrast with professional investors, armed to assess the safety and soundness of financial institutions.

Moreover, in the current situation, a public good (access to a safe and efficient payment system) is provided by private institutions (commercial banks).

These two reasons **(protection of depositors, the safety and efficiency of the payment system) have traditionally justified public intervention in banking activities.**

Banks also play a crucial role in the allocation of capital in the economy. As Merton (1993, p. 20) states, **‘‘A well developed smoothly functioning financial system facilitates the efficient life-cycle allocation of household consumption and the efficient allocation of physical capital to its most productive use in the business sector.’’**

For centuries, the economic functions of the financial system were essentially performed by banks alone.

In the last 30 years, the financial markets have developed dramatically, and financial innovations have emerged at a spectacular rate. As a result, financial markets are now providing some of the services that financial intermediaries used to offer exclusively.

Thus, a firm involved in international trade can now hedge its exchange rate risk through a futures market instead of using a bank contract. Prior to the development of futures markets, the banking sector was an exclusive provider of such services.

To understand how financial intermediation improves the allocation of capital in the economy, it is necessary to examine in more detail what functions banks perform.

Contemporary banking theory classifies banking functions into four main categories:

* 1. Offering liquidity and payment services
* 2. Transforming assets
* 3. Managing risks
* 4. Processing information and monitoring borrowers
* This does not mean that every bank has to perform each of these functions. **Universal banks do, but specialized banks need not.**

1.2 Liquidity and Payment Services

In a world without transaction costs, like in the standard Arrow-Debreu model, there would be no need for money.

Money save transaction costs such as MacCallum Goodfriend[[3]](#footnote-3) model cited by Lucas (1993), Lucas (2000).

However, as soon as one takes into account the existence of frictions in trading operations (transactions costs), it becomes more efficient to exchange goods and services for money, rather than for other goods and services, as in barter operations.[[4]](#footnote-4)

The form taken by money quickly evolved from commodity money (a system in which the medium of exchange is itself a useful commodity) to fiat money (a system in which the medium of exchange is intrinsically useless, but its value is guaranteed by some institution, and therefore it is accepted as a means of payment).

Historically, banks played two different parts in the management of fiat money: money change FX (exchange between different currencies issued by distinct institutions) and provision of payment services.

1.2.1 Money Changing

Historically, the first activity of banks was money changing.

This is illustrated by the etymology of the word: the Greek word for bank (trapeza) designates the balance 

that early money changers used to weigh coins to determine the exact quantity of precious metal the coins contained.

The Italian word for bank (banco) relates to the bench on which the money changers placed their precious coins.

These money-changing activities played a crucial role in the development of trade in Europe in the late Middle Ages.

The second historical activity of banks, namely, management of deposits, was a consequence of their money-changing activities. This is well documented, for example, in Kohn (1999).

Most of the time, these deposits had a zero or even negative return because they were kept in vaults rather than invested in productive activities. If depositors considered it advantageous to exchange coins for a less liquid form of money, it was mainly because of the advantages of safekeeping, which reduced the risk of loss or robbery.

1.2.2 Payment Services

Species proved to be inadequate for making large payments, especially at a distance, because of the costs and risks involved in their transportation.

Large cash imbalances between merchants were frequent during commercial fairs, and banks played an important part in clearing merchants’ positions.

Clearing activities became especially important in the United States and Europe at the end of the nineteenth century, leading to modern payment systems, which are networks that facilitate the transfer of funds between the bank accounts of economic agents.

The safety and efficiency of these payment systems have become a fundamental concern for governments and central banks, especially since the deregulation and internationalization of financial markets, which have entailed a large increase in interbank payments, both nationally and internationally.

1.3 Transforming Assets

Asset transformation has three viewpoints: convenience of denomination, quality transformation, and maturity transformation.

Convenience of denomination refers to the fact that the bank chooses **the unit size** (denomination) of its products (deposits and loans) in a way that is convenient for its clients.

It is traditionally seen as one of the main justifications of financial intermediation.

A typical example is that of small depositors facing large investors willing to borrow indivisible amounts.

Gurley and Shaw (1960) argued, in an early contribution, financial intermediaries provide the missing link between the financial products that firms want to issue and the ones desired by investors.

Banks then simply play the role of intermediaries by collecting the small deposits and investing the proceeds into large loans or public debt as done by Brazilian banks.

Quality transformation occurs when bank deposits offer better risk-return characteristics than direct investments.

This may occur when there are indivisibilities in the investment, in which case a small investor cannot diversify its portfolio.

It may also occur in an asymmetric information situation, when banks have better information than depositors.

Finally, modern banks can be as transforming securities with short maturities, offered to depositors, into securities with long maturities, which borrowers desire.

This maturity transformation function necessarily implies a risk, since the banks’ assets will be illiquid, given the depositors’ claims.

Nevertheless, interbank lending and derivative financial instruments available to banks (swaps, futures) offer possibilities to limit this risk but are costly to manage for the banks’ clients.

1.4 Managing Risks

Usually, there are three sources of risk affecting banks: credit risk, interest rate risk, and liquidity risk.[[5]](#footnote-5)

1.4.1 Credit Risk

When the first bank loans spread in Florence, Siena, and Lucca, and later in Venice and Genoa, lending was limited to financing the harvest that could be seen in the fields and appraised. Thus, credit risk was small.

However, financing wars soon became an important part of banking activities.

Still, bankers tried to make their loans secure, either through collateral (jewels), through the assignment of rights (excise tax), or generally through the endorsement by a city (which could be sued in case of default, whereas kings could not be).

The riskiness of these loans seems to have increased through time. Initially banks used to arrange **fully collateralized loans**, an activity not intrinsically different from that of a pawnbroker.

The change in the riskiness of bank loans can be traced back to the start of investment banking. Investment banking was performed by a different type of institution and was a different concept from traditional credit activity.

It introduced a different philosophy of banking because it involved advancing money to industry rather than being a simple lender and getting good guarantees. This implied making more risky investments and, in particular, buying stocks. This appraisal of risk on a loan is one of the main functions of modern bankers.

1.4.2 Interest Rate and Liquidity Risks

The asset transformation function of banks also has implications for their management of risks.

Indeed, when transforming maturities or when issuing liquid deposits guaranteed by illiquid loans, a bank takes a risk.

This is because **the cost of funds— which depends on the level of short-term interest rates—may rise above the interest income,** determined by the contractual interest rates of the loans granted by the bank. Even when no interest is paid on deposits, the bank may face unexpected withdrawals, which will force it to seek more expensive sources of funds. As consequence, the bank will have to manage the combination of interest rate risk (due to the difference in maturity) and liquidity risk (due to the difference in the marketability of the claims issued and that of the claims held). The management of interest rate risk has become crucial for banks since the increase in the volatility of interest rates after the end of the Bretton-Woods fixed exchange system.

1. Laffont and Tirole (1993) distinguish (1) informational constraints, which limit regulation because the relevant information is held by the firm; (2) transactional constraints, which limit the possibility of writing contingent contracts; and (3) administrative and political constraints, which impose limits on the scope of regulation as well as on the available instruments. [↑](#footnote-ref-1)
2. No Brasil, 4 bancos dominam 80% dos ativos. Restrição à entrada no sistema financeiro brasileiro.

   Eles têm + lucro oligopolístico. Alta rentabilidade a custa do cliente e pode ser + imune a crise (estabilidade). [↑](#footnote-ref-2)
3. McCallum, Bennett T. and Marvin S. Goodfriend. "Demand for Money: Theoreticl Studies," The New Palgrave: A Dictionary of Economics, ed. by J. Eatwell, P. Newman and M. Milgate. London: The Macmillan Press and New York: Stockton Press, 1987. [↑](#footnote-ref-3)
4. Other economists adopt similar views. For example, Dowd (1992) challenges the view that fractional reserve banking is inherently liable to runs and crises, and Kaufman (1994) argues that the likelihood of contagion in a properly established system and the size of externalities in case of banking failures are not greater in banking than in other industries. [↑](#footnote-ref-4)
5. Others market risks (including exchange rate, interest rate, or other o¤-balance- sheet asset risks) and off-balance sheet risk due to derivatives; see the Basel Proposal on Banking Supervision (Dermine 1993). [↑](#footnote-ref-5)