

Banking and Capital Markets

Module Introduction and Overview

Contents

1	Introduction to the Module	2
2	The Module Authors	4
3	Study Resources	5
4	Module Overview	6
5	Learning Outcomes	10

1 Introduction to the Module

It is widely recognised by academic economists and policymakers that developed and efficient banking and capital markets are an important prerequisite for economic growth. However, it is also recognised that banking and financial crises can cause abrupt slowdowns or reversals of growth. The drive to understand these phenomena has generated a large body of research, leading to new theories and empirical studies of key features of banking and capital markets. This literature provides the underpinning for the subject material of this module.

You are probably familiar already with the history of several major financial crises. For example, the 1997–98 Asian Crisis saw currency values fall dramatically in several countries. Banks were unable to meet their obligations to creditors, because their assets were denominated in the devalued local currencies, but their liabilities were denominated in US dollars. During the 2007–09 global financial crisis, several major banks and other financial institutions failed, and the entire banking and financial system came close to collapse.

In this module we examine the contribution made by banking and capital markets, and also the risks they represent, but we enable you to take a step back from events, and to think about core principles underlying the operation of banking and financial markets. Since theoretical knowledge is never fully established or ‘proven’, we enable you to examine opposing points of view, as well as to evaluate critically a number of important published studies.

While studying this module, you will develop an understanding of the functioning of the financial sector as a whole, and become familiar with some of the most important theoretical and historical developments. This should enable you to be more effective in your own research on financial institutions, and provide you with a deeper understanding of core principles of banking and finance. This understanding should help you make the right decisions in a professional capacity. The module focuses on developing a deeper understanding, and it is not a ‘how to do it’ course – it does not aim to teach applied business skills for use in the financial sector.

There are several overarching themes running through the module. One theme concerns the nature and purpose of financial intermediation. A second theme concerns the impact of imperfect information on the efficient functioning of banking and capital markets. A third theme is the inherent fragility of banks, as well as financial intermediaries in general and the financial system.

Theme 1: The nature and purpose of financial intermediation

Banks are so familiar and ubiquitous in everyday life we seldom ask the most basic question of all: why do financial intermediaries in general, and banks in particular, exist? It appears to be a simple question that must have a

simple answer, but some simple questions turn out to be more difficult than they appear.

Try it yourself. Pause for a minute and try to answer the question ‘why do banks exist?’

You might say it is because they operate the payments system, enabling us to receive and make payments easily. And that is, indeed, an important service provided by banks. But why do banks exist as financial intermediaries, accepting deposits from savers and using these funds to provide loans to borrowers? Why could savers and borrowers not transact directly with one another, cutting out the need for any financial intermediary? Another aspect of this theme concerns the distinction between banks and capital markets in their roles of managing risk, disseminating information and funding investment. More generally, what are the relative strengths and weaknesses of bank-oriented *versus* market-oriented financial systems as channels for the flows of funds between savers and borrowers?

Theme 2: Imperfect information

Asymmetric information is a feature of many of the transactions and contracts entered into by banks and other financial institutions. Asymmetric information gives rise to problems of adverse selection and moral hazard. *Adverse selection* arises when one party to a transaction has less information about the quality of the item being traded than the other party. It becomes difficult for the party with less information to know whether the price is fair, and faced with this situation they may withdraw from the transaction.

For example, a firm wishing to borrow from a bank to finance a new investment project might know more about the project’s prospects, and its risks, than the bank can know. The bank is aware of the borrower’s advantage in terms of access to relevant information, and elects for safety by abstaining from lending. Unable to raise finance, the firm is unable to proceed with its investment project.

Moral hazard arises when people are allowed to escape the consequences of the risks they take, and are more likely to behave recklessly as a consequence. For example, having lent the funds needed to finance an investment project, how can the bank be certain that the borrower is managing the project prudently? Much of our modern understanding of finance is based on the recognition that there are incentives to construct regulations and private financial and corporate governance arrangements that minimise the problems arising from asymmetric information. Well-developed financial systems are successful because they incorporate such mechanisms.

Theme 3: The fragility of the financial system

Banks and other financial institutions are eager to convey an impression of strength and solidity; but throughout history, the financial system has been susceptible to periodic bursts of instability, culminating in banking and

financial crises. Banks accept deposits, which can be withdrawn at short notice, to finance loans and other investments, which often cannot be liquidated rapidly if needed to satisfy the demands of depositors for withdrawals. This financial intermediation business model makes even the strongest and longest-established banks inherently vulnerable to the possibility of collapse. At a systemic level, one recurring manifestation of the tendency for instability is the common failure of credit markets to operate sustainably. Phases of exuberance, when credit is cheap and banks seem to lend excessively, are interspersed with phases of credit rationing, when credit is tight and banks are unwilling to lend. We will examine the theoretical reasons why banks may lend either too little or too much, with destabilising consequences for banks themselves, and for the financial system. This discussion is illustrated with historical examples of banking and financial crises. We also examine the regulatory architecture that is designed to enhance financial stability and prevent the onset of banking and financial crises.

2 The Module Authors

John Goddard is Professor and Head of Aberystwyth Business School in Aberystwyth University. Originally trained as an economist, he holds a Bachelor's degree from Lancaster University, and a Master's from the University of London. He worked for several years in life insurance, before pursuing an academic career that includes previous appointments at Leeds University, Abertay University, Swansea University and Bangor University. His areas of research include the economics of the banking industry, financial markets and institutions, and the economics of professional football. He has teaching experience in the areas of finance, economics and statistics. He is co-author of the textbook *Industrial Organization: Competition, Strategy, Policy* (Pearson, 2017), and the introductory guide *Banking: A Very Short Introduction* (Oxford University Press, 2016).

Bassam Fattouh graduated in Economics from the American University of Beirut. He obtained his Master's degree and PhD from the SOAS, University of London. He is a Professor in Finance and Management and Academic Director for the MSc in International Management for the Middle East and North Africa at the Department for Financial and Management Studies, SOAS. He is also Senior Research Fellow and Director of the Oil and Middle East Programme at the Oxford Institute for Energy Studies at the University of Oxford. He has published in leading economic journals, including the *Journal of Development Economics*, *Economics Letters*, *Economic Inquiry*, *Macroeconomic Dynamics* and *Empirical Economics*. His research interests are mainly in the areas of finance and growth, capital structure and applied non-linear econometric modelling, as well as oil pricing systems.

Luca Deidda completed his doctoral studies in 1999, while he was a lecturer in the Department of Economics at Queen Mary and Westfield College, University of London. He joined the Centre for Financial and Management

Studies at SOAS in that same year, as lecturer in financial studies. His research focuses on financial and economic development, markets under asymmetric information and welfare effects of financial development. He is currently working at the Università di Sassari, Sardinia.

Norman Williams taught at the University of Greenwich in the areas of bank management, international capital markets, the economic context of banking, managerial finance, and finance. His research concerned pensions, investment management, banking, capital and financial markets, and property markets. He also worked in HM Treasury, the Bank of England, and Barclays Capital.

3 Study Resources

This study guide is your main learning resource for the module and it directs your study through eight study units. The units include readings from the key texts and from supplementary resources which are included in the module readings.



Key texts

The first reference for this module is a book by Kent Matthews and John Thompson:

Matthews K and J Thompson (2014) *The Economics of Banking*. 3rd Edition. Chichester UK, John Wiley & Sons.

This concise title provides coverage of topics covered in every unit of the module, and you will be directed to read relevant chapters and sections as you progress through the study guide. The extent and depth of coverage in this book varies between topics, and where appropriate you will be directed to other sources for additional reading on specific topics.

The second reference for this module is a book by Xavier Freixas and Jean-Charles Rochet:

Freixas X and J-C Rochet (2008) *Microeconomics of Banking*. 2nd Edition. Cambridge MA, The MIT Press.

This text provides a more advanced treatment of the topics covered in Unit 2, Unit 3, Unit 4, Unit 7 and Unit 8.

You should read the indicated chapters and sections of the key texts in conjunction with the study guide, as directed in each unit, to strengthen your understanding and to gain an alternative perspective on many of the topics.

These texts, like the study guide, present some of the theoretical content of the module using mathematical notation. Some of this content involves elementary calculus, including differentiation and optimisation.

Module readings

In most units we also provide readings of articles and other material. These are different from a key text, which is more oriented to giving an overview of different authors' points of view. When you study a reading, you should be prepared to consider the author's point of view so that if you disagree with it you can express your reasons for this disagreement; and if you agree with it, you can equally explain why. In other words, you should critically evaluate the readings. The other function which many of the readings have is that they include more empirical material and case studies, which complements the study of theoretical principles in the units and the key texts.

4 Module Overview

Unit 1 Banks and Financial Markets

- 1.1 Introduction
- 1.2 Financial Intermediaries, Financial Markets, and the Flow of Funds
- 1.3 The Financial System and the Flow of Funds
- 1.4 Comparative Financial Systems
- 1.5 Law, Politics and Financial Systems
- 1.6 Bank-oriented versus Market-oriented Financial Systems
- 1.7 Conclusion

Unit 2 Financial Intermediation

- 2.1 Introduction
- 2.2 Principles of Financial Intermediation
- 2.3 Financial Intermediation and Transaction Costs
- 2.4 The Financial Intermediary as a Means of Alleviating Asymmetric Information Problems
- 2.5 The Financial Intermediary as a Liquidity Insurer for Depositors
- 2.6 Conclusion

Unit 3 Risk Management

- 3.1 Introduction
- 3.2 Interest Rate Risk
- 3.3 Market Risk
- 3.4 Credit Risk
- 3.5 Liquidity Risk
- 3.6 Conclusion

Unit 4 Credit Rationing

- 4.1 Introduction
- 4.2 Financial Repression
- 4.3 Credit Rationing due to Adverse Selection: The Stiglitz–Weiss Model
- 4.4 Over-lending
- 4.5 Credit Rationing due to Moral Hazard
- 4.6 Conclusion

Unit 5 Shadow Banking and Securitisation

- 5.1 Introduction
- 5.2 Shadow Banking: Entity-based Classification
- 5.3 Shadow Banking: Activity-based Classification
- 5.4 Traditional Banking and Shadow Banking
- 5.5 The Role of Shadow Banking in the Global Financial Crisis 2007–09
- 5.6 Regulation of Shadow Banking
- 5.7 Conclusion

Unit 6 Competition and Efficiency in Banking Markets

- 6.1 Introduction
- 6.2 The Theory of the Banking Firm
- 6.3 Measures of Competition in Banking
- 6.4 The Structure-Conduct-Performance Paradigm
- 6.5 The New Empirical Industrial Organisation
- 6.6 Measures of Banking Efficiency
- 6.7 Mergers and Acquisitions in Banking
- 6.8 Conclusion

Unit 7 Banking and Financial Crises

- 7.1 Introduction
- 7.2 Bank Runs in the Diamond and Dybvig Model
- 7.3 The Asian Financial Crisis 1997–98
- 7.4 Risk-shifting and Asset Price Bubbles
- 7.5 The Global Financial Crisis 2007–09
- 7.6 Deposit Insurance and Moral Hazard
- 7.7 Conclusion

Unit 8 Bank Regulation

- 8.1 Introduction
- 8.2 Systemic Risk
- 8.3 Lender of Last Resort
- 8.4 Deposit Insurance
- 8.5 Risk-adjusted Capital Adequacy Requirements
- 8.6 Stress Testing
- 8.7 Conclusion

Unit 1 Banks and Financial Markets

The module begins by identifying the key characteristics of the financial systems operating in different countries. In a bank-oriented financial system, savers lend their funds to financial intermediaries in the form of deposits, and the intermediaries provide finance to borrowers in the form of loans. Savers are predominantly households, and borrowers are predominantly firms. In a market-oriented financial system, firms issue equity and debt securities that are either purchased directly by households, or by institutional investors such as pension funds and mutual funds on the households' behalf.

It has been suggested that a country's legal system has a major influence on the evolution of either a bank-oriented or a market-oriented financial system. Common law legal systems are considered to be more conducive to the evolution of a market-oriented financial system, because they typically provide a greater degree of investor protection than civil law systems.

Other explanations focus on historical and political factors, including the possibility that parties with vested interests in maintaining a bank-oriented system may inhibit the development of sophisticated financial markets. We compare the effectiveness of bank-oriented and market-oriented financial systems in areas such as corporate governance, managing risk and disseminating information.

Unit 2 Financial Intermediation

Why do we require financial intermediaries? Why aren't the functions of banks performed more efficiently by savers or lenders interacting directly with borrowers in financial markets? A traditional answer is that banks fulfil the functions of size, maturity and risk transformation: deposits are, on average, small in value, short-term, and low-risk; while the average bank loan is for a larger amount, long-term, and higher in risk. Alternatively, banks may be able to reduce the transaction costs of acquiring information and negotiating contracts. As noted above, asymmetric information describes a situation where one party to a financial transaction has more information than the other party, making it difficult for both parties to agree terms on which they can transact. Banks' lending policies may help overcome these problems. According to the 'coalition of borrowers' hypothesis, borrowers signal the quality of their investment projects to lenders by retaining an equity stake in their projects. Alternatively, according to the 'delegated monitoring' hypothesis, a bank centralises and reduces the costs lenders would otherwise incur in monitoring borrowers. Finally, according to the 'liquidity insurance' hypothesis, the role of the bank from a depositor's perspective is to help smooth uncertain future outlays on consumption.

Unit 3 Risk Management

One of the most important functions of banks is risk management. Acceptance of risk can be viewed as a fundamental part of a bank's business model, because it involves the transformation of short-term liabilities into long-term assets. Credit risk is the risk that borrowers default on their loan repayment commitments. The theoretical credit risk spread (the difference between the return on a risky asset and a risk-free asset) may be calculated using an exogenously determined default probability; or imputed using option-pricing theory. Practical methods for costing credit risk include credit-scoring models, distance-to-default, and an adaptation of Value at Risk. Other types of risk include interest-rate risk, which is the risk that changes in the interest rate adversely affect the values of a bank's assets and liabilities. Market risk is the risk that the bank incurs losses on its investments in stocks, bonds or other securities. Liquidity risk is the risk that

a bank is unable to fund its lending or meet depositors' demands for withdrawals. Mechanisms devised to contain liquidity risk include reserve requirements, deposit insurance, and the central bank lender-of-last-resort facility.

Unit 4 Credit Rationing

A common complaint from business is that creditworthy investment projects are sometimes unable to raise finance. Several modern theories of credit rationing are based on the idea of information asymmetry between borrowers and lenders. The probability that a loan is eventually repaid may be affected by adverse selection, if clients with low-risk projects are deterred from borrowing by a higher interest rate; or by moral hazard, if a higher interest rate reduces the incentive for borrowers to take effective measures to maximise the probability that their projects succeed. It may become impossible for banks to specify an interest rate at which their willingness to lend matches the amounts that clients wish to borrow. In other words, the market for credit may fail to clear. It is also possible that banks may lend *more* than they should, by funding some projects that are not capable of delivering a return that covers the cost of capital.

Unit 5 Shadow Banking and Securitisation

The shadow banking system performs many of the same activities as the traditional banking system, but operates largely beyond the scope of regulation. Key activities are securities financing transactions, including repo and securities lending, and securitisation. Shadow banking entities are susceptible to runs, in the same way as traditional banks, but in the shadow banking system the participants are financial institutions, and withdrawals take the form of increasing 'haircuts', or a refusal to renew or roll over repo agreements. The design of appropriate regulatory arrangements for shadow banking institutions remains a topic for debate.

Unit 6 Competition and Efficiency in Banking Markets

Much early empirical research on competition in banking was based on the notion of price competition that underpins the theory of the firm in microeconomics. A more recent approach draws inferences about the nature of competition from observed pricing behaviour. Measurement of efficiency in banking focuses on two dimensions of efficiency. First, to what extent do banks obtain the full benefits of economies of scale? And second, is there scope for banks to achieve enhanced technical efficiency, by producing a higher level of output from a given set of inputs, or improved allocative efficiency, by changing the mix of inputs? A process of consolidation has greatly reduced the number of banks operating in most industrialised countries. Consolidation may be motivated by profit or by other objectives. Enhanced efficiency may be an important motive for mergers and acquisitions in banking; although the empirical evidence is mixed as to whether post-merger efficiency gains are usually achieved.

Unit 7 Banking and Financial Crises

Several theoretical explanations for banking and financial crises focus on the events that can trigger a run on a bank. According to one highly influential theoretical model, a sudden collective loss of depositor confidence may see depositors rushing to withdraw their funds, in order to avoid being at the back of the queue for repayment. Other explanations focus on moral hazard problems, which encourage investors drawing on borrowed funds to pay more than the underlying value for a risky asset, in the knowledge that if the asset underperforms, the bank as lender will bear part of the cost. Banks are also subject to a moral hazard problem, if their lending decisions are influenced by the prospect that the government 'safety net' may provide a bailout if investments fail to deliver their expected returns. Moral hazard problems of this kind can give rise to asset price bubbles in equities or real estate, of a kind that is often seen prior to the onset of a banking or financial crisis. Several crises, including the Asian crisis of 1997–98 and the global financial crisis of 2007–09, contain features that appear consistent with the theory.

Unit 8 Bank Regulation

Systemic risk, or risk to the stability of the financial system as a whole, is the main justification for a relatively intrusive supervisory and regulatory regime that is commonly applied to the banking industry. Key elements of the regulatory regime, known as the 'safety net', are lender-of-last-resort support from the central bank for banks that are fundamentally solvent but facing a shortage of liquidity; and government-backed deposit insurance to strengthen depositor confidence and reduce the prospect of a run on the bank. These forms of state-sponsored support raise moral hazard concerns about the risk appetites of banks. Risk-weighted capital regulation ensures that bank balance sheets contain safety buffers that can absorb unanticipated losses without destroying the bank's solvency. Stress tests are a useful tool for assessing the resilience of a bank's capitalisation to unanticipated shocks.

5 Learning Outcomes

When you have completed your study of this module, you will be able to:

- explain the functions of financial intermediaries, and evaluate the strengths and weaknesses of bank-oriented and market-oriented financial systems.
- critically evaluate theories of the banking firm which focus on the role of the bank as a provider of liquidity insurance for depositors, and as a delegated monitor of borrowers.
- explain the methods available to a bank to manage credit risk, interest rate risk, market risk and liquidity risk.
- explain why credit markets may fail to clear, and critically evaluate theories of credit rationing and overlending.

- discuss the methods used by shadow banking institutions to raise finance, and the risks to financial stability presented by shadow banking.
- critically evaluate methods for measuring the efficiency of banks, and the intensity of competition in deposits and loans markets.
- explain how a loss of depositor confidence, and asset price bubbles, can trigger banking and financial crises.
- critically evaluate the effectiveness of regulatory arrangements for the banking industry in promoting financial stability.