Introduction to

BANKING

2nd Edition

Barbara Casu
Claudia Girardone
Philip Molyneux

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Introduction to Banking

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Second Edition

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To Martin, Lila, Milan, Kika and Beth. And to my parents and sister (BC)

To Marc, Matteo and Leonardo. To my parents Nieves and Sandro (CG)

To Delyth, Alun, Catrin, Gareth, Gethin, Lois and Rhiannon (PM)

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Preface

It is well enough that people of the nation do not understand our banking and monetary system, for if they did, I believe there would be a revolution before tomorrow morning.

Henry Ford

The aim of this textbook is to provide a comprehensive introduction to theoretical and applied issues relating to the global banking industry. Despite the fears of Henry Ford, we do not think reading this book will cause a revolution, but we do hope it will at least provide you with an enjoyable and interesting insight into the business of banking.

A major motivation for writing this text has been to fill a gap in the market. For a number of years we have all taught banking courses and we have become aware of students' frustration about the lack of a comprehensive yet accessible textbook that deals with a broad spectrum of introductory banking issues. Most introductory texts that cover banking issues tend to be broad-based, focusing on economics and finance, and these (in our view) do not provide sufficient detail or coverage of the theoretical and institutional detail that is essential for an accurate understanding of critical banking issues. While there are textbooks that provide such coverage targeted at advanced undergraduates and the postgraduate market, there is no text that has comprehensive coverage of such issues for those new to the study of banking. In addition, many textbooks that cover banking as part of a broadly based money and banking course tend to give only limited attention to international experiences. As such, we have written this text to provide (we hope) an essential teaching and learning resource for anyone who has to lecture introductory undergraduates as well as for professional banking courses.

The first edition of this book (2006) described a world where the banking industry experienced marked changes and deregulation allowed banking firms to diversify into broader financial services areas. Commercial banks became full-service financial firms, offering a range of non-traditional financial services including insurance, securities business, pensions and the like. Many banks dropped the word 'Bank' from their titles to emphasise their much broader role in the provision of financial services to households and corporations. In addition, various trends such as industry consolidation, securitisation and disintermediation were having a significant effect, resulting in a smaller number of major players operating in credit, capital and money markets business that increasingly overlapped. As banking systems opened up, many institutions were pursuing international strategies, thereby changing the traditional focus on banking as a mainly domestic business. This rapidly evolving environment posed both threats and opportunities to bank managers and owners. The former had to be increasingly aware of both domestic and international developments in the management process, and in particular of the various risk–return trade-offs in all areas of a bank's activities. Capital needed to be managed effectively to adhere to minimum regulatory requirements and also to generate returns in excess of the cost of capital to boost shareholders' returns. The market pressure on banks to generate good returns for shareholders was a key element of bank strategy – bankers were forced to cut costs, boost revenues (mainly through fee and commission income sources) and manage their capital resources much more efficiently.

This golden era of banking came to an abrupt end in the summer of 2007, when the demise of the US sub-prime mortgage lending market led to financial losses, government bailouts of banks (and other financial institutions), a credit crunch and a prolonged economic recession, mainly in developed countries, ensued. Since the onset of the crisis in 2007, there has been a large body of research investigating its causes and consequences. What had started as trouble in a small segment of the US financial markets became a fully fledged global financial crisis, following the demise of the US investment bank Lehman Brothers in September 2008. The unfolding of the sub-prime crisis and how it became a financial crisis, and its impact on European countries in the form of a sovereign debt crisis, can be described in various phases or waves that include (i) the US sub-prime crisis (August 2007 to September 2008); (ii) the systemic or global crisis (September 2008 to March 2009); (iii) the economic crisis (March 2009 to January 2010); and (iv) the sovereign debt crisis (January 2010 to June 2012). In this textbook, we will refer to the sub-prime crisis period as the 2007 crisis, to the global financial crisis period as the 2008–2009 crisis and to the sovereign debt crisis or eurozone crisis as the period 2010–2012. Because of the timing of different events, the period of financial market turbulence is also indicated as the 2007–2009 financial turmoil.

These crisis years have had a tremendous impact on the world of banking and have brought about dramatic changes in the global financial architecture. Against this background of global changes, the need to revise the book became apparent. As the dust has begun to settle on the crisis periods and the new shape of the world's banking markets has started to take form, we have thoroughly revised this textbook to account for all these recent changes.

The text is organised into five main parts:

- Part 1 Introduction to banking
  - Chapter 1 What is special about banks?
  - Chapter 2 Bank activities and services
  - Chapter 3 Types of banking
  - Chapter 4 International banking

This part of the text provides an introduction to the nature of financial intermediation and covers the main reasons why banks exist, focusing on key issues such as adverse selection, moral hazard and delegated monitoring. It also covers the information production, liquidity transformation and consumption smoothing role of banks as well as various other issues relating to the bank intermediation process. We then go on to give a detailed account of the main activities and services provided by banks, changes in the payment systems and the growing importance of ethical investments and sustainable banking strategies. As the financial sector in many countries comprise a wide range of different types of banking firms, these are then explained, covering commercial banks, mutual banks, investment banks, private banks and different forms of banking activity such as universal versus specialist banking and 'interest-free' Islamic banking. Given the increasing role of banks on the global scene, the final chapter of this part (Chapter 4) looks at the main features of international banking, highlighting the reasons why banks locate overseas or conduct international activity. We also outline the main services provided by international banks, covering payments, credit, money and capital markets activity and highlighting the role of the Euromarkets – Eurobonds and Eurocurrency activity – and also syndicated lending.

The main aim of Part 1 is to familiarise students with the reasons why banks exist, the main services they offer, recent trends impacting on business areas, types of banking firms and the

differences between domestic and international banking business. This part provides the reader with the relevant knowledge of global banking business and should heighten awareness of contemporary banking issues that put the following parts into context.

- Part 2 Central banking and bank regulation
  - Chapter 5 Theory of central banking
  - Chapter 6 Central banks in practice
  - Chapter 7 Bank regulation and supervision
  - Chapter 8 Bank failures and banking crises

As the banking system is the main conduit of monetary policy, it is important that students of banking are aware of the main roles of a central bank, its monetary policy role and its other functions. The first chapter of Part 2 deals with the theory of central banking, outlining the roles and functions of central banks, as well as the rationale for their existence. We also discuss the conduct of monetary policy, distinguishing between instruments, targets and goals, as well as the benefits of central bank independence. Chapter 6 moves on to discuss how the Bank of England, the European Central Bank and the US Federal Reserve conduct monetary policy and the role of banks in this process. Chapter 7 focuses on bank regulation and supervision. We discuss the pivotal role played by banks in the economy to understand the rationale for regulation, and outline the aims and objectives of regulation and different types of regulation. We next discuss the elements of the financial safety net as well as the limitations of regulation and the possible reasons behind regulatory failure. In this chapter we also review the causes for regulatory reform and discuss key international policy initiatives, such as the Basel Capital Adequacy Accords. The final chapter of Part 2 focuses on bank failures and banking crises. This chapter is new to the second edition. The impact of the global financial and eurozone crises on the world's banking markets made it all the more relevant to include a detailed discussion of the determinants of bank failure. We then discuss the main strategies used to identify problem banks, with a focus on early warning systems (EWS) for bank soundness and the recently introduced stress tests. We outline the key issues of bank restructuring and the regulatory toolkits to intervene in the banking sector. Finally, we discuss the causes and consequences of banking and financial crises.

By the end of Part 2 students should be aware of the pivotal role played by monetary policy and supervisory regulation and their impact on the banking sector (and economy as a whole). The reader should be familiar with the rationale for central banking, the main tools and instruments of monetary policy and how various major central banks undertake their operations. Students should be able to identify the reasons why banks are so heavily regulated and why adequate solvency and liquidity are critical to maintain a safe and sound banking system. In particular, readers should understand the important role played by capital in the banking sector as well as the relevance of the Basel Capital Accords. Readers should become aware of the determinants of bank failure as well as the toolkits at regulators' disposal to supervise bank risk taking. Readers should also become familiar with the causes of banking and financial crises as well as effective crisis-management mechanisms.

- Part 3 Issues in bank management
  - Chapter 9 Banks' balance sheet and income structure
  - Chapter 10 Bank financial management
  - Chapter 11 Banking risks
  - Chapter 12 Bank risk management

Part 3 of the text is organised to provide a detailed insight into the financial features of banking firms. The first chapter focuses on the balance sheet and income features of both commercial and investment banks, highlighting the main differences between the two types of institutions. Substantial attention to detail is paid to the components of the financial statements of these types of banks. In addition, we outline the role of traditional ratio analysis for evaluating bank performance and asset quality as well as performance indicators relating to shareholder value creation. Chapter 10 provides a detailed introduction to bank financial management issues, covering asset and liability management, capital management, liquidity management and off-balance sheet management. The important role played by derivative business is introduced, together with a discussion of loan sales and securitisation. We then go on to discuss the various forms of risks faced by banks (including credit, interest rate, foreign exchange, market, operational and other risk types). The final chapter in the part introduces a number of key approaches to bank risk management. It also includes a discussion of the growing importance of banks' corporate governance frameworks in setting the standards of good practice and risk culture within banking organisations.

By the end of Part 3 students should be familiar with the main components of banks' balance sheet and income statements, be aware of off-balance sheet activity and be able to analyse bank performance and other issues using traditional ratio analysis. In addition, they should have an insight into how banks manage their on- and off-balance sheet positions and be familiar with the main risks faced in banking operations. After reading this part, students should be familiar with the main risk-management approaches undertaken in banking.

- Part 4 Comparative banking markets
  - Chapter 13 Banking in the UK
  - Chapter 14 Banking in Europe
  - Chapter 15 Banking in the US
  - Chapter 16 Banking in Japan
  - Chapter 17 Banking in emerging markets

Part 4 focuses on the features of various banking systems, highlighting the main institutional features of these systems (types of banks, non-bank deposit firms, role of other financial firms) as well as various structural trends (number of banks, branches, mergers and acquisitions (M&As) activity, market concentration and such like). We have tried to cover systems that (we hope) will be of interest to as wide an audience as possible, covering the UK, Europe, the US, Japan and various emerging banking markets. We have paid particular attention to regulatory developments in the wake of the global financial and eurozone crises. The emerging regulatory financial architecture is discussed in detail for the UK, the European Union and the United States. It is interesting to note that similar trends are apparent in most of these systems, namely, a decline in the number of banks, consolidation and concentration, the increased role of foreign banks, the broadening of banks' business into other financial services areas, greater disintermediation and the ongoing and omnipresent role of regulatory change. The final chapter provides a discussion of the relationship between finance and growth, illustrating how a sound and efficient financial system can aid economic development. We also offer a detailed insight into various emerging banking systems which we hope will be of interest and also of practical use for anyone curious to learn about banking sector features and developments across the globe. These include a discussion of the main forces of change and how these have influenced the structure of the banking industries in emerging

and transition economies in terms of deregulation and the liberalisation process, the role of the state, M&As and the entry of foreign banks.

By the end of Part 4 students should be familiar with the institutional features of the banking/financial systems of the UK, the US, Europe, Japan and various emerging markets and transition economies. They should be aware of how the institutional features of the different banking systems are changing and the trends that are common to all systems. A full understanding of these characteristics will give students the relevant framework to analyse and discuss the structural and performance features of these (and other) banking systems.

- Part 5 Advanced topics in banking
  - Chapter 18 Banks and markets
  - Chapter 19 Mergers and acquisitions
  - Chapter 20 Bank competition and financial stability

This part is new to the second edition of this textbook. Part 5 focuses on some key issues in banking markets. Specifically, in the first chapter of this part we focus on the bank intermediation process, on the increasing integration of banks and markets, and we discuss the growth of the 'shadow banking' system. The aim of this chapter is to outline the key linkages between banks and markets, with a particular focus on the recent rise and fall of securitisation. We then move on to explain the main processes involved in issuing mortgage-backed securities (MBS) (and other asset-backed securities (ABS)). We note the broad impact of securitisation on bank activities and highlight how it has come under increased regulatory scrutiny. The next chapter in this part focuses on mergers and acquisitions in banking markets, providing a classification of the different types of bank mergers as well as a summary of the main reasons why banks merge. We outline the trends in bank M&A activity as well as the impact of M&As on bank performance. The final chapter focuses on the possible trade-off between banking sector competition and stability. We provide a comparative analysis of the different measures of competition in banking markets. Next we discuss different indicators of bank risk, including accounting indicators and market-based measures of risk. We then explore the link between competition and risk in banking systems and outline the competition-fragility view, which posits that competition induces increased risk taking and therefore is detrimental for stability, and the competition-stability view, which argues that competition promotes financial stability.

By the end of Part 5 students should be familiar with some of the current issues in banking and with the academic literature that has sought to investigate these issues empirically.

We have written this text to provide an introductory grounding to the theory and practice of banking and we hope it will serve as a useful guide for anyone studying banking subjects at an introductory level and for those who are perhaps considering a career in the banking/financial services industry.

We hope you enjoy reading the text and we encourage correspondence regarding any omissions or any recommendations regarding improvement of the content.

Barbara Casu (Cass Business School, City University London)
Claudia Girardone (Essex Business School, University of Essex)
Phil Molyneux (Bangor Business School, Bangor University)

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Figures

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List of abbreviations and acronyms

$bn	billions of United States dollars
£bn	billions of Great Britain pounds
€bn	billions of euros
$mil	millions of United States dollars
£mil	millions of Great Britain pounds
€mil	millions of euros
2-BCD	EU Second Banking Co-ordination Directive
ABCP	asset-backed commercial paper
ABS	asset-backed securities
ACH	automated clearing house
ACP	Autorité de contrôle prudentiel
AES	advanced execution services
AGP	asset guarantee programme
AIG	American International Group
AIM	Alternative Investment Market
ALCO	asset and liability committee
ALM	asset–liability management
AMA	advanced measurement approach
ANZ	Australia and New Zealand Banking Group Ltd
APACS	Association for Payment Clearing Services
APF	asset purchase facility
APRA	Australian Prudential Regulation Authority
ARM	adjustable-rate mortgage
ASEAN	Association of Southeast Asian Nations
ASF	American Securitisation Forum
ATM	automated teller machine
B2B	business-to-business
BACS	Banks Automated Clearing System
BBA	British Bankers' Association
BBAA	British Business Angels Association
BBVA	Banco Bilbao Vizcaya Argentaria
BCB	Banco Central do Brasil
BCBS	Basel Committee on Banking Supervision
BCCSs	bill and cheque clearing systems
BCRA	Banco Central de la Republica Argentina
BFP	Business Finance Partnership
BHC	bank holding company
BHCA	Bank Holding Company Act
BIP	Bank Insolvency Procedure
BIS	Bank for International Settlements

BoE	Bank of England
BOJ-NET	Bank of Japan Financial Network System
bps	basis points
BRRD	Bank Recovery and Resolution Directive
BSC	Banking Supervision Committee
BTS	Binding Technical Standards
BU	Banking Union
BU	bottom-up approach
BVCA	British Private Equity & Venture Capital Association
C&CC	cheque and clearing company
C/I	cost-to-income ratio
CAD	EU Capital Adequacy Directive
CAGR	compound annual growth rate
CAMELS	Capital, Asset, Management, Earnings, Liquidity, Sensitivity to Market Risk
CAP	Capital Assistance Programme
CAPM	capital asset pricing model
CBA	Commonwealth Bank of Australia
CBFA	Commission Bancaire, Financière et des Assurances
CBO	collateralised bond obligations
CBPP	covered bond purchase programme
CBR	Central Bank of the Russian Federation
CBRC	China Banking Regulatory Commission
CC	Competition Commission
CCAR	comprehensive capital analysis and review
CCB	China Construction Bank
CCBM	Correspondent Central Banking Model
CCBS	Centre for Central Banking Studies
CCCL	Cheque and Credit Clearing Company Limited
CD	certificate of deposit
CDCI	Community Development Capital Initiative
CDFIs	Community Development Financial Institutions
CDIC	Canada Deposit Insurance Corporation
CDO	collateralised debt obligations
CDS	credit default swaps
CEBS	Committee of European Banking Supervisors
CEE	Central and Eastern Europe
CEIOPS	Committee of European Insurance and Occupational Pensions Supervisors
CEO	chief executive officer
CESR	Committee of European Securities Regulators
CFO	chief financial officer
CFPB	Consumer Financial Protection Bureau
CGFS	Committee on the Global Financial System
CGS	credit guarantee scheme
CHAPS	Clearing House Automated Payments System
CHIPS	Clearing House Interbank Payments System
CI	credit institutions
CIBC	Canadian Imperial Bank of Commerce

CLO collateralised loan obligations
CLS Continuous Linked Settlement
CME Chicago Mercantile Exchange
CMGs crisis management groups
CML Council of Mortgage Lenders
COAGs cross-border co-operation agreements
CORF corporate operational risk function
CP commercial paper
CPP Capital Purchase Programme
CPSS Committee on Payment and Settlement Systems
CRA credit-rating agencies
CRAM country risk assessment model
CRD Capital Requirements Directive
CRDs cash ratio deposits
CRIS control risks information services
CR-n n-firms concentration ratio
CRR Capital Requirements Regulation
CV conjectural variations
DD distance to default
DEFRA Department for Environment, Food & Rural Affairs
DFAST Dodd–Frank Act stress tests
DG duration gap
DGS deposit guarantee scheme
DIS deposit insurance scheme
DMO debt management office
DNB De Nederlandsche Bank
DTI debt-to-income ratio
DTIs deposit-taking institutions
DWF discount window facility
EBA European Banking Authority
EBC European Banking Committee
ECB European Central Bank
ECOFIN Economic and Financial Affairs Council
ECSC European Coal and Steel Community
ECTR extended collateral term repo facilities
EDF expected default frequency
EDI electronic data interchange
EDP excessive deficit procedure
EEA European Economic Area
EEC European Economic Community
EFDI European Forum of Deposit Insurers
EFN European Forecasting Network
EFSF European Financial Stability Facility
EFTPOS electronic fund transfer at point of sale
EIOPA European Insurance and Occupational Pensions Authority
EIOPC European Insurance and Occupational Pensions Committee
EIRIS Ethical Investing Research Service

EIU	Economist Intelligence Unit
EL	expected loss
ELs	eligible liabilities
ELA	emergency liquidity assistance
EM	equity multiplier
EMI	European Monetary Institute
EMS	European Monetary System
EMU	economic and monetary union
EPS	earnings per share
ERM	Exchange Rate Mechanism
ERM II	Exchange Rate Mechanism II
ESAs	European Supervisory Authorities
ESC	European Securities Committee
ESCB	European System of Central Banks
ESRC	European Systemic Risk Council
ESF	European Securitisation Forum
ESFS	European Financial Stability Facility
ESFS	European System of Financial Supervision
ESFS	European System of Financial Supervisors
ESM	European Stability Mechanism
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
ESS	efficient scale hypothesis
ESX	efficient structure hypothesis (x-efficiency)
EU	European Union
Euro area	EU member states that have adopted the euro
Eurozone	EU member states that have adopted the euro
EVA	economic value added
EVCA	European Private Equity & Venture Capital Association
EVE	economic value of equity
EWS	early warning systems
F gap	financing gap
FAC	Federal Advisory Council
FCA	Financial Conduct Authority
FCC	Financial Conglomerates Committee
FDI	foreign direct investment
FDIC	Federal Deposit Insurance Corporation
Fed	Federal Reserve Bank
FEDNET	Federal Reserve's national communications network
FFIEC	Federal Financial Institutions Examination Council
FHFA	Federal Housing Finance Agency
FHLMC	Federal Home Loan Mortgage Corporation (Freddie Mac)
FICC	Fixed Income, Currencies and Commodities Department
FINMA	Swiss Financial Market Supervisory Authority
FLS	Funding for Lending Scheme
FMSA	Federal Agency for Financial Market Stabilisation
FNMA	Federal National Mortgage Association (Fannie Mae)

FOMC	Federal Open Market Committee
FPC	Financial Policy Committee
FPS	Faster Payments Service
FR	Federal Reserve
FRA	forward rate agreement
FRB	Federal Reserve Board
FRNs	floating rate notes
FROB	Fondo de Reestructuración Ordenada Bancaria
FRS	Federal Reserve System
FSA	Financial Services Agency (Japan)
FSA	Financial Services Authority (UK)
FSAP	Financial Services Action Plan
FSB	Financial Stability Board
FSCS	Financial Services Compensation Scheme
FSF	Financial Stability Forum
FSMA	Financial Services and Markets Act 2000
FSOC	Financial Stability Oversight Council
FSU	Former Soviet Union
FTP	fund transfer pricing
FXYCS	Foreign Exchange Yen Clearing System
G10	Group of Ten
GAO	Government Accountability Office
GCC	Gulf Co-operation Council
GDP	gross domestic product
GNI	gross national income
GNMA	Government National Mortgage Association (Ginnie Mae)
GSE	government-sponsored enterprise
G-SIBs	global systemically important banks
G-SIFIs	global systemically important financial institutions
HHI	Herfindahl–Hirschman index
HICP	Harmonised Index of Consumer Prices
HKMA	Hong Kong Monetary Authority
HNWI	high net worth individual
HQLA	high-quality liquid assets
IADI	International Association of Deposit Insurers
IAIS	International Association of Insurance Supervisors
IASB	International Accounting Standards Board
IBFs	international banking facilities
ICAEW	Institute of Chartered Accountants in England and Wales
ICB	Independent Commission on Banking
ICBC	Industrial and Commercial Bank of China
ICICI	Industrial Credit and Investment Corporation of India
ICRG	International Country Risk Guide
IDIC	Indonesia Deposit Insurance Corporation
IFC	International Finance Corporation
IFRS	International Financial Reporting Standards
ILTROs	indexed long-term repo open market operations

IM	information memo
IMA	Investment Management Association
IMF	International Monetary Fund
IMM	International Money Market
IOSCO	International Accounting Standards Board
IPAB	Instituto para la Protección al Ahorro Bancario
IPO	initial public offering
IRB	internal ratings based
IRS	interest rate swap
ISAs	individual savings accounts
ISD	Investment Services Directive
ISP	internet service provider
KA	key attributes
KDIC	Korea Deposit Insurance Corporation
KPIs	key performance indicators
KYC	Know Your Customer
L gap	liquidity gap
LBO	leveraged buyouts
LBS RMS	London Business School Risk Measurement Service
LCBGs	large and complex banking groups
LCDS	loan credit default swaps
LCFIs	large and complex financial institutions
LCR	least-cost resolution
LCR	liquidity coverage ratio
LDA	loss distribution approach
LGD	loss given default
LGE	loss given event
LIBOR	London Interbank Offered Rate
LOC	letter of credit
LOLR	lender of last resort
LPFCs	limited-purpose finance companies
LRAC	long-run average cost
LRMC	long-run marginal cost
LSAPs	large-scale asset purchases
LTRO	longer-term refinancing operation
LTV	loan-to-value ratio
M gap	maturity gap
M&As	mergers and acquisitions
M1	narrow money
M2	intermediate money
M3	broad money
MAC	material adverse change
MAS	Monetary Authority of Singapore
MBBGs	Major British Banking Groups
MBS	mortgage-backed securities
MC	marginal cost
MCOB	mortgage conduct of business

MEW	mortgage equity withdrawal
MFIs	monetary financial institutions
MHFG	Mizuho Financial Group
MiFID	Markets in Financial Instruments Directive
MIP	macroeconomic imbalance procedure
MLA	mandated lead arranger
MMF	money market fund
MMOLR	market maker of last resort
MNC	multinational company
MPC	Monetary Policy Committee
MPs	Members of Parliament
MROs	main refinancing operations
MTFG	Mitsubishi Tokyo Financial Group
MUFJ	Mitsubishi UFJ Financial Group
MVE	market value of equity
NAB	National Australia Bank
NBB	National Bank of Belgium
NCAs	national competent authorities
NCB	national central bank
NCUA	National Credit Union Administration
NDTI	non-deposit taking institution
NEIO	New Empirical Industrial Organisation
NIF	note issuance facilities
NII	net interest income
NIM	net interest margin
NIM-8	five Central and Eastern European countries and three Baltic States
NMSs	new member states
NOPAT	net operating profit after tax
NPLs	non-performing loans
NRAM	Northern Rock Asset Management
NSFR	net stable funding ratio
NYSE	New York Stock Exchange
OBA	open bank assistance
OBS	off-balance-sheet
OCC	Office of the Comptroller of the Currency
OECD	Organisation for Economic Co-operation and Development
OFHEO	Office of Federal Housing Enterprise Oversight
OFT	Office of Fair Trading
OIS	overnight index swap
OLA	Orderly Liquidation Authority
OMOs	open market operations
OSFs	operational standing facilities
OTC	over the counter
OTS	Office of Thrift Supervision
P&A	purchase and assumption
P&L	profit and loss
P2P	peer-to-peer

P/B	price to book value
PBC	People's Bank of China
PC	personal computer
PD	probability of default
PIN	personal identification number
PLL	provision for loan losses
POP	persistence of profits
PPI	payment protection insurance
PPIP	public–private investment programme
PPT	partial property transfers
PRA	Prudential Regulation Authority
PSPs	private sector purchasers
PwC	PricewaterhouseCoopers
QE	quantitative easing
R&D	research and development
RAMSI	Risk Assessment Model of Systemic Institutions
RAPM	risk-adjusted performance measurement
RAR	risk–asset ratio
RAROC	risk-adjusted return on capital
RBI	Reserve Bank of India
RBS	Royal Bank of Scotland
RBSG	Royal Bank of Scotland Group
REPO	repurchase agreement
RMBS	residential mortgage-backed securities
RMP	relative market power
ROA	return on assets
ROCHs	recognised overseas clearing houses
ROE	return on equity
ROIEs	recognised overseas investment exchanges
RPD	relative profit differences
RSA	rate-sensitive assets
RSL	rate-sensitive liabilities
RTGS	real-time gross settlement
S&LA	Savings and Loan Association
S&Ls	savings and loans
S&P	Standard & Poor's
SAMA	Saudi Arabian Monetary Agency
SBA	scenario-based approach
SCAP	Supervisory Capital Assessment Programme
SCP	structure-conduct-performance
SDGS	Single Deposit Guarantee Scheme
SDM	Single Deposit Guarantee Mechanism
SEE	South-Eastern Europe
SEPA	Single Euro Payments Area
SFT	securities financing transaction
SGP	Stability and Growth Pact
SHIBOR	Shanghai Interbank Offered Rate

SIFIs	systemically important financial institutions
SIFMA	Securities Industry and Financial Markets Association
SIVs	structured investment vehicles
SLS	special liquidity scheme
SMEs	small and medium enterprises
SMFG	Sumitomo Mitsui Financial Group
SMP	Securities Markets Programme
SMTB	Sumitomo Mitsui Trust Bank Ltd
SPV	special-purpose vehicle
SRB	Single Resolution Board
SRF	Single Bank Resolution Fund
SRM	Single Resolution Mechanism
SRR	special resolution regime
SRU	Special Resolution Unit
SSM	Single Supervisory Mechanism
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TAF	term auction facility
TARGET	Trans-European Automated Real-time Gross settlement Express Transfer system
TARP	Troubled Asset Relief Program
T-bills	Treasury bills
T-bonds	Treasury bonds
TBTDA	too-big-to-discipline-adequately
TBTF	too-big-to-fail
TD	top-down approach
TIP	targeted investment programme
TITF	too important to fail
TITF	too interconnected to fail
TPO	temporary public ownership
TRS	total-return swaps
TSTF	too systemic to fail
UCITS	Directive Undertaking for Collective Investment in Transferable Securities
UKFI	UK Financial Investments Limited
UKPA	UK Payments Administration Ltd
VaR	value at risk
WBC	Westpac Banking Corporation
WOCCU	World Council of Credit Unions
WSE	Warsaw Stock Exchange
WTO	World Trade Organization
YTD	year to date
YTM	yield to maturity

AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic

DE	Germany
DK	Denmark
EE	Estonia
ES	Spain
FI	Finland
FR	France
GB	Great Britain (which consists of England, Wales and Scotland)
GR	Greece
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LV	Latvia
MT	Malta
NL	the Netherlands
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
UK	United Kingdom (which consists of Great Britain together with Northern Ireland)
US	United States (of America)

PART 1

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Chapter 1

What is special about banks?

Learning objectives

- To understand the role of financial intermediaries in the economy
- To understand lenders' and borrowers' different requirements and how banks can help to bridge such differences
- To understand how financial intermediaries reduce transaction, information and search costs
- To analyse the theories of financial intermediation

1.1 Introduction

The first question one may ask when reading this book is: 'What is special about banks?' This chapter aims to offer some insights into the nature of the banking business and what makes banks 'special'. A bank is a financial intermediary that offers loans and deposits, and payment services. Nowadays banks offer a wide range of additional services, but it is these functions that constitute banks' distinguishing features. Because banks play such an important role in channelling funds from savers to borrowers, in this chapter we use the concepts of 'bank' and 'financial intermediary' almost as synonyms as we review the role of banks and their main functions: size transformation, maturity transformation and risk transformation. The difference between banks and other financial intermediaries is introduced in Chapter 2. The second part of this chapter gives an overview of some important concepts in information economics as they apply to banking. The final sections present five theories to explain why banking exists and the benefits of financial intermediation.

1.2 The nature of financial intermediation

To understand how banks work, it is necessary to understand the role of financial intermediaries in an economy. This will help us to answer the question about why we need banks. Financial intermediaries' and financial markets' main role is to provide a mechanism by which funds are transferred and allocated to their most productive opportunities.

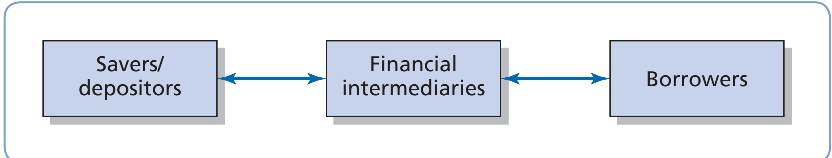

Figure 1.1 The intermediation function

A bank is a financial intermediary whose *core* activity is to provide loans to borrowers and to collect deposits from savers. In other words, banks act as *intermediaries* between borrowers and savers, as illustrated in Figure 1.1.

By carrying out the intermediation function, banks collect surplus funds from savers and allocate them to those (both people and companies) with a deficit of funds (borrowers). In doing so, they channel funds from savers to borrowers, thereby increasing economic efficiency by promoting a better allocation of resources.

Arguably, savers and borrowers do not need banks to intermediate their funds: in **direct finance**, as shown in Figure 1.2, borrowers obtain funds directly from lenders in financial markets.

A **financial claim** is a claim to the payment of a future sum of money and/or a periodic payment of money. More generally, a financial claim carries an obligation on the issuer to pay interest periodically and to redeem the claim at a stated value in one of three ways:

1 on demand;
2 after giving a stated period of notice;
3 on a definite date or within a range of dates.

Financial claims are generated whenever an act of borrowing takes place. Borrowing occurs whenever an economic unit's (individuals, households, companies, government bodies, etc.) total expenditure exceeds its total receipts. Therefore borrowers are generally referred to as **deficit units** and lenders are known as **surplus units**. Financial claims can take the form of any **financial asset**, such as money, bank deposit accounts, bonds, shares, loans, life insurance policies, etc. The lender of funds holds the borrower's financial claim and is said to hold a financial asset. The issuer of the claim (borrower) is said to have a **financial liability**.

The borrowing–lending process illustrated in Figure 1.2 does not require the existence of financial intermediaries. However, two types of barriers can be identified to the direct financing process:

1 The difficulty and expense of matching the complex needs of individual borrowers and lenders.
2 The incompatibility of the financial needs of borrowers and lenders.

Lenders are looking for safety and liquidity. Borrowers may find it difficult to promise either.

Figure 1.2 Direct finance

Lenders' requirements:

- The *minimisation of risk*. This includes the minimisation of the risk of default (the borrower not meeting repayment obligations) and the risk of assets dropping in value.
- The *minimisation of cost*. Lenders aim to minimise their costs.
- *Liquidity*. Lenders value the ease of converting a financial claim into cash without loss of capital value; therefore they prefer holding assets that are more easily converted into cash. One reason for this is the lack of knowledge of future events, which results in lenders preferring short-term to long-term lending.

Borrowers' requirements:

- Funds *at* a particular specified date.
- Funds *for* a specific period of time; preferably *long-term*. (Think of the case of a company borrowing to purchase capital equipment which will achieve positive returns only in the longer term or of an individual borrowing to purchase a house.)
- Funds at the *lowest possible cost*.

In summary, the majority of lenders want to lend their assets for short periods of time and for the highest possible return. In contrast, the majority of borrowers demand liabilities that are cheap and for long periods.

Financial intermediaries can bridge the gap between borrowers and lenders and reconcile their often incompatible needs and objectives. They do so by offering suppliers of funds safety and liquidity by using funds deposited for loans and investments. Financial intermediaries help minimise the costs associated with direct lending – particularly **transaction costs** and those derived from **information asymmetries** (these concepts will be analysed in more detail in Section 1.4).

Transaction costs relate to the costs of searching for a counterparty to a financial transaction;[1] the costs of obtaining information about them; the costs of negotiating the contract; the costs of monitoring the borrowers; and the eventual enforcements costs should the borrower not fulfil its commitments. In addition to transaction costs, lenders are faced with the problems caused by asymmetric information. These problems arise because one party has better information than the counterparty. In this context, the borrower has better information about the investment (in terms of risk and returns of the project) than the lender. Information asymmetries create problems in all stages of the lending process.

Transaction costs and information asymmetries are examples of market failures; that is, they act as obstacles to the efficient functioning of financial markets. One solution is the creation of organised financial markets. However, transaction costs and information asymmetries, though reduced, remain. Another solution is the emergence of financial intermediaries. Organised financial markets and financial intermediaries co-exist in most economies; the flow of funds from units in surplus to units in deficit, in the context of direct and **indirect finance**, is illustrated in Figure 1.3.

Having discussed the advantages of financial intermediation over direct finance, it is necessary to point out that financial intermediaries create additional costs for borrowers and

[1] Transaction costs can be defined as the costs of running the economic system (Coase, 1937). In particular, it is common to distinguish between co-ordination costs (e.g. costs of search and negotiation) and motivation costs (e.g. costs due to asymmetric information and imperfect commitment). Transaction costs can be measured in time and money spent in carrying out a financial transaction.

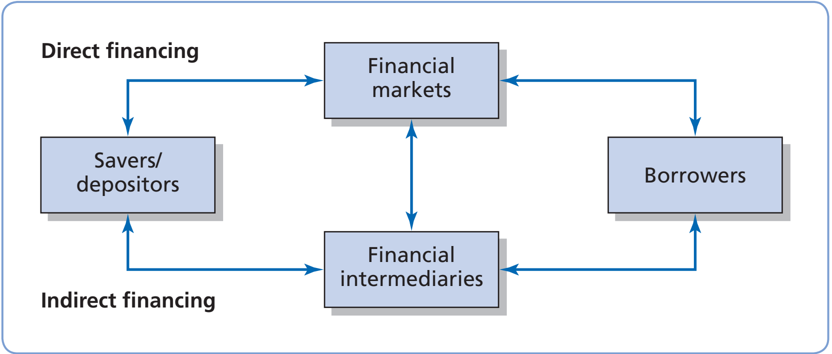

Figure 1.3 Direct and indirect finance

lenders who use their services. Therefore, in order to be able to state that intermediated finance is more advantageous than direct finance, it is necessary that the benefits of such activity outweigh the costs associated with intermediation.

The role of financial intermediation has now become more complex as financial intermediaries perform additional roles, such as brokerage services (i.e. buying and selling stocks and bonds for clients), leasing and factoring. Prior to the 2007–2009 financial turmoil, banks also engaged in a wide process of securitisation (i.e. the pooling and repackaging of illiquid financial assets into marketable securities), thus creating an extra layer of intermediation, as illustrated in Figure 1.4. When financial intermediaries hold claims issued by other financial intermediaries, then an extra layer of financial intermediation is created. Nowadays, given the increased complexity of credit flows, it is not uncommon to have more than two layers of intermediation.

In the decade leading up to the 2007–2009 financial crisis, financial markets also witnessed the rapid growth of a different form of financial intermediation, which became known as **shadow banking**. The term 'shadow banking' was first used at the 2007 Jackson Hole Symposium, an annual meeting sponsored by the Federal Reserve Bank of Kansas City. The Financial Stability Board (2011) defines shadow banking broadly as 'credit intermediation involving entities and activities outside the regular banking system'. This is, however, a very broad definition and both the scope and the economic relevance of shadow banking are still little understood. This has spurred an academic and policy debate on the role of banks in the financial system, and renewed the need to understand banks' operations, their economic

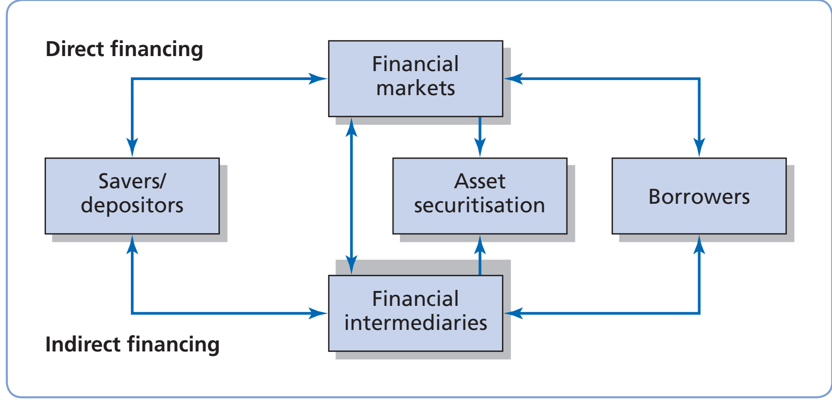

Figure 1.4 Modern financial intermediation

role, their risk-management systems as well as the activities that are carried out outside the scope of the current regulatory framework. It is widely recognised that the two shadow banking activities that are most important economically and in terms of financial stability are securitisation and collateral intermediation (Claessens *et al.*, 2012). These issues will be discussed in more detail in Chapter 18.

1.3 The role of banks

To understand fully the advantages of the intermediation process, it is necessary to analyse what banks do and how they do it. We have seen that the main function of banks is to collect funds (deposits) from units in surplus and lend funds (loans) to units in deficit. Deposits typically have the characteristics of being small-size, low-risk and high-liquidity. Loans are of larger size, higher risk and illiquid. Banks bridge the gap between the needs of lenders and borrowers by performing a transformation function:

(a) size transformation;

(b) maturity transformation;

(c) risk transformation.

(a) Size transformation

Generally, savers/depositors are willing to lend smaller amounts of money than the amounts required by borrowers. For example, think about the difference between your savings account and the money you would need to buy a house. Banks collect funds from savers in the form of small-size deposits and repackage them into larger-size loans. Banks perform this size-transformation function exploiting **economies of scale** associated with the lending/borrowing function because they have access to a larger number of depositors than any individual borrower (see Section 1.4.2).

(b) Maturity transformation

Banks transform funds lent for a short period of time into medium- and long-term loans. For example, they convert demand deposits (i.e. funds deposited that can be withdrawn on demand) into 25-year residential mortgages. Banks' liabilities (i.e. the funds collected from savers) are mainly repayable on demand or at relatively short notice. Banks' assets (funds lent to borrowers), meanwhile, are normally repayable in the medium to long term. Banks are said to be 'borrowing short and lending long' and in this process they are said to 'mismatch' their assets and liabilities. This mismatch can create problems in terms of **liquidity risk**, which is the risk of not having enough liquid funds to meet one's liabilities.

(c) Risk transformation

Individual borrowers carry a risk of default (known as credit risk), that is the risk that they might not be able to repay the amount of money they borrowed. Savers wish to minimise risk and prefer their money to be safe. Banks are able to minimise the risk of individual loans by diversifying their investments, pooling risks, screening and monitoring borrowers and holding capital and reserves as a buffer for unexpected losses.

The tools and techniques used by banks to perform these transformations and to minimise the risks inherent with such transformations will be illustrated in Chapter 12.

1.4 Information economies

As discussed earlier, banks provide an important source of external funds used to finance business and other activities. One of the main features of banks is that they reduce transaction costs by exploiting scale and scope economies and often they owe their extra profits to superior information. Sections 1.4.1 and 1.4.2 look into information economies as they apply to the banking industry.

1.4.1 Transaction costs

Banks traditionally differ from other financial intermediaries for two main reasons: (1) bank liabilities (i.e. deposits) are accepted as a means of exchange; and (2) banks are the only intermediaries that can vary the level of deposits and can create and destroy credit. Modern views on financial intermediation indicate as a crucial function of financial intermediaries the transformation of primary securities issued by firms (deficit units) into secondary securities that are more attractive to surplus units.

In this context, financial intermediation can be explained in terms of reduction of transaction costs: secondary securities will be less risky, more convenient and more liquid than primary securities because banks benefit from economies of scale in transaction technologies and are able to carry out a rational diversification of risks. This allows them to offer lower loan rates relative to direct financing. However, most bank assets are illiquid (non-negotiable) and this can be explained by issues relating to asymmetric information (see Section 1.4.3).

1.4.2 Economies of scale and economies of scope

Financial intermediaries reduce transaction, information and search costs mainly by exploiting economies of scale. By increasing the volume of transactions, the cost per unit of transactions decreases. Moreover, by focusing on growing in size, financial intermediaries are able to draw standardised contracts and monitor customers so that they enforce these contracts. They also train high-quality staff to assist in the process of finding and monitoring suitable deficit units (borrowers). It would be difficult, time-consuming and costly for an individual to do so.

Financial intermediaries can reduce risks by 'pooling', or aggregating, individual risks so that in normal circumstances, surplus units will be depositing money as deficit units make withdrawals. This enables banks, for instance, to collect relatively liquid deposits and invest most of them in long-term assets. Another way to look at this situation is that large groups of depositors are able to obtain liquidity from the banks while investing savings in illiquid but more profitable investments (Diamond and Dybvig, 1983).

Economies of scope refer to a situation where the joint costs of producing two complementary outputs are less than the combined costs of producing the two outputs separately. Let us consider two outputs, Q_1 and Q_2, and their separate costs, $C(Q_1)$ and $C(Q_2)$. If the joint cost of producing the two outputs is expressed by $C(Q_1,Q_2)$, then economies of scope are said to exist if:

$$C(Q_1, Q_2) < C(Q_1) + C(Q_2) \quad (1.1)$$

This may arise when the production processes of both outputs share some common inputs, including both capital (for example, the actual building the bank occupies) and labour (such as bank management). Consider, for example, the economies derived from the joint supply of banking and insurance services. A bank might sell both mortgages and life insurance policies that go with them, therefore creating cross-selling opportunities for the bank (for more details on bancassurance, see Section 3.2.1). However, the literature indicates that economies of scope are difficult to identify and measure.

1.4.3 Asymmetric information

Information is at the heart of all financial transactions and contracts. Three problems are relevant:

- Not everyone has the same information.
- Everyone has less than perfect information.
- Some parties to a transaction have 'inside' information that is not made available to both sides of the transaction.

Such 'asymmetric' information can make it difficult for two parties to do business together, and this is why regulations are introduced to help reduce mismatches in information.

Transactions involving asymmetric (or private) information are everywhere. A government selling a bond does not know what buyers are prepared to pay; a bank does not know how likely a borrower is to repay; a firm that sells a life insurance policy does not know the precise health of the purchaser (even though they have a good idea); an investor that buys an equity in Apple does not know the full details of the company's operations and prospects. These types of informational asymmetries can distort both firms' and users' incentives that result in significant inefficiencies.

Information is at the centre of all financial transactions and contracts. Decisions are made beforehand (*ex ante*) on the basis of less than complete information and sometimes with counterparties who have superior information with the potential for exploitation. In any financial system, information is not symmetrically distributed across all agents, which implies that different agents have different information sets. Put another way, full and complete information is not uniformly available to all interested parties. In addition, not all parties have the same ability to utilise the information that is available to them. In particular, parties have more information about themselves (including their intentions and abilities) than do others. The problem arises because information is not a free good and the acquisition of information is not a costless activity. If either were the case, there would never be a problem of asymmetric information.

Asymmetric information, and the problems this gives rise to, are central to financial arrangements and the way financial institutions behave to limit and manage risk. Information asymmetries, or the imperfect distribution of information among parties, can generate **adverse selection** and **moral hazard** problems, as explained in Section 1.4.3.1. Another type of information asymmetry relates to the **agency costs** between the principal (e.g. bank) and the agent (e.g. borrower). These issues are analysed in Section 1.4.3.2.

1.4.3.1 Adverse selection and moral hazard

One problem that often arises from asymmetric information is adverse selection. The better informed economic agent has a natural incentive to exploit his informational advantage. Those who are uninformed should anticipate their informational handicap and behave accordingly.