LANGE, SAUNDERS, MILLON CORNETT

FINANCIAL INSTITUTIONS MANAGEMENT 4e

A risk management approach

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HELEN LANGE ANTHONY SAUNDERS MARCIA MILLON CORNETT

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Preface

While there are positive signs of improvement, the global financial markets are still dealing with many challenging aspects resulting from the global financial crisis (GFC), which commenced in 2007, and the European sovereign debt crisis which followed. Indeed, the turmoil in financial markets caused by both of these significant financial market disturbances serves to remind us of the importance of risk identification, measurement and management for the survival of financial institutions.

More generally, if we look at the past 25 years we see high drama in the financial services industry and, given the important role that financial institutions play in the economy, financial institution risk management is critical more broadly for the healthy conduct of an economy. The failure of all three parts of the risk management process, both in the lead-up to and during the GFC, suggests that either complacency or ignorance of risk measurement and risk management were present.

From 2007 to 2010 the financial services industry experienced the worst financial crisis since the Great Depression. Even without the GFC, the past 20 years have been dramatic for the financial services industry. During the 1990s and 2000s the boundaries between traditional industry sectors (such as commercial banking and investment banking) broke down, and competition became increasingly global in nature. Many forces are contributing to this breakdown in inter-industry and inter-country barriers, including financial innovation, technology, taxation and regulation. It is within this context that this book has been written. Although the traditional nature of each sector's product activity is analysed, greater emphasis is placed on *new* areas of activities, such as asset securitisation, off-balance-sheet banking and international banking, and on changes occurring as a result of the GFC, including regulation.

When the first Australian edition of this text was published in 1996, it was the proud start of a new-generation financial institution management textbook covering the Australian financial services industry from a risk and risk management perspective. At that time, traditional texts in the area presented an overview of the industry sector by sector, concentrating on balance sheet presentations and overlooking management decision making and risk management. Other texts have followed this model, so that now a risk-management approach to analysing modern financial institutions is well accepted.

This fourth edition of this text, with Helen Lange as lead author, continues the same innovative approach of the first three editions. It focuses on managing return and risk in modern financial institutions (FIs) based on sound financial theory, and approaches the management of financial institutions by focusing on the many, varied and very often related risks that they face. The central theme of *Financial Institutions Management* 4e is that the risks faced by FI managers and the methods and markets through which these risks are managed are similar, whether an institution is chartered as a bank, a building society, an investment bank or an insurance company. For these reasons, this is not just a textbook, but a comprehensive reference for those intending to follow a career in the financial services industry.

As in any shareholder-owned corporation, the goal of FI managers should be to maximise the value of the financial institution. However, pursuit of value maximisation does not mean that risk management can or should be ignored. Indeed, modern FIs are in the risk management business. As we discuss in this book, in a world of perfect and frictionless capital markets, FIs would not exist and individuals would manage their own financial assets and portfolios. But since real-world financial markets are not perfect, FIs provide the positive function of bearing and managing risk on behalf of their customers, through the pooling of risks and the sale of their services as risk specialists.

Intended audience

Financial Institutions Management 4e is aimed at upper-level undergraduate, postgraduate and MBA students. It also includes some more technical sections, which are identified with an endnote. *These sections may be included or omitted from the chapter reading, depending on the rigour of the course, without harming the continuity of the chapter.* However, whether included in the coursework or not, these sections and the material in the online appendices add significant value to those intending to pursue a career in the financial services industry.

Acknowledgments

The US editions of Saunders and Cornett have involved many experienced instructors in the United States. These people deserve our thanks for their thoughtful insights and contributions, which have helped make this book the respected text it is today. Their work has helped to shape this Australian edition.

I would also like to thank all of my Australian and New Zealand colleagues who encouraged us to write this fourth Australian edition. Of particular help were those reviewers whose painstaking comments and advice guided this edition through to its current state. They include:

- Alexandr Akimov, Griffith University
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Thank you also to those reviewers of previous editions, who have also assisted in shaping this book:

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- John Simpson, Curtin University
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Along with McGraw-Hill Education Australia, I would like to thank Sigitas Karpavicius (Flinders University), Chee Jin Yap (Swinburne University) and Kym Brown (Monash University), who prepared the digital material for this book.

I would like to make special mention of the research work provided by my husband, John Verhelst, which, together with his support and encouragement, kept me on track. His proofreading was a blessing for me and I expect also for McGraw-Hill, and certainly helped me to deliver a more polished first draft than would otherwise have been the case.

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Helen Lange

About the authors

Helen Lange is Emeritus Professor and Managing Consultant of her consulting company. She retired as Dean of Business Management Programs, Associate Professor of Finance and Director of the MBA program at U21Global in Singapore in 2009. Prior to Singapore, Helen held the position of Associate Professor at Macquarie University Graduate School of Management in Sydney. Helen received her PhD from Macquarie University, and is also an alumna of University of New South Wales (UNSW).

Helen has taught at undergraduate and graduate levels at UNSW (from 1989), and at graduate level at both Macquarie University (from 1994) and the University of Sydney (from 1996), specialising in courses relating to finance and financial institutions and, in particular, risk management. From 2003 to 2006, she held the position of visiting professor to the Multimedia University, Cyberjaya, Malaysia, with a focus on 'excellence in research', and was a visiting fellow at the Stern School of Business at New York University in 1997.

Prior to her academic career Helen had 15 years of extensive experience in the banking and finance industry. She is a fellow of FINSIA, and was a foundation director of the Australian Chapter of the Turnaround Management Association. Helen has published in the area of corporate finance, securitisation and banking, and consults in the areas of risk management and strategic financial management.

Anthony Saunders is the John M. Schiff Professor of Finance and the former Chair of the Department of Finance at the Stern School of Business at New York University (NYU). Professor Saunders received his PhD from the London School of Economics and has taught courses at NYU since 1978. Throughout his academic career, he has specialised in financial institutions and international banking. He has served as a visiting professor all over the world, including at INSEAD, the Stockholm School of Economics and the University of Melbourne.

Dr Saunders has held positions on the Board of Academic Consultants of the Federal Reserve Board of Governors as well as the Council of Research Advisors for the Federal National Mortgage Association. In addition, he has acted as a visiting scholar at the Comptroller of the Currency and at the Federal Reserve Banks of Philadelphia and New York. Currently, he is an academic consultant for the FDIC. He also held a visiting position in the research department of the International Monetary Fund. He is editor of the journal *Financial Markets, Instruments and Institutions.* His research has been published in all the major industry journals and in several books. In addition, he has authored or coauthored several books. In 2008 he was ranked as the most published author in the past 50 years in the top seven journals in finance.

Marcia Millon Cornett is a Professor of Finance at Bentley University in Waltham, Massachusetts, USA. She received her BS degree in Economics from Knox College in Galesburg, Illinois, and her MBA and PhD degrees in Finance from Indiana University in Bloomington, Indiana. Dr Cornett has published articles in the areas of bank performance, bank regulation and corporate finance in such journals as the *Journal of Finance* , the *Journal of Money, Credit and Banking* , the *Journal of Financial Economics* , *Financial Management* and the *Journal of Banking and Finance.* In 2008 she was ranked as the 124th most published author in the last 50 years in the top seven journals in finance. Dr Cornett served as an Associate Editor of *Financial Management* and is currently an Associate Editor for the *Journal of Financial Services Research* , *FMA Online* , the *Multinational Finance Journal* and the *Review of Financial Economics.* She is a member of the Financial Management Association, the American Finance Association, and the Western Finance Association.

New in this edition

This book has retained the structure established in the third edition, with the chapters positioned to reflect the typical educational flow. Further, and more significantly, this structure enables the discussion of each risk and its measurement to be immediately followed by an examination of the techniques that can be used to manage the risk, either in the same chapter or in the chapter immediately following.

New features in this edition include:

- Text, tables and figures have been thoroughly revised to reflect the most recently available data and information.
- A new feature 'After the GFC' has been added to chapter 10 , highlighting significant events since the global financial crisis.
- Boxes highlighting key issues arising from the 2014 Financial System Inquiry, reporting from both submissions and the Inquiry Interim Report.
- All questions and problems have been reviewed and updated, with many chapters containing additional new questions.
- Additional integrated mini case studies in many chapters.
- Each chapter contains highlighted examples.
- Internet references are included both throughout and at the end of each chapter, and web questions are included after the end-of-chapter questions.
- Major regulatory changes resulting from the full introduction of the Basel III reforms have been incorporated in all relevant chapters.
- More examples from the Asian region.

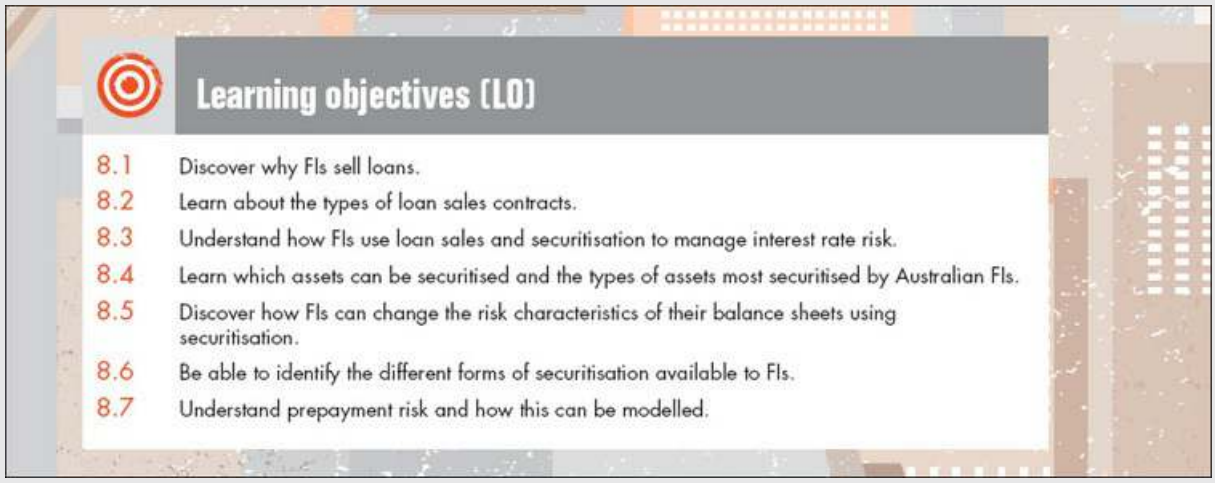
New features of specific chapters include:

- Chapter 1 includes a box reporting the major themes and issues arising from the Financial System Inquiry 2014. Appendix 1B describes the implementation of monetary policy by the Reserve Bank of Australia.
- In Chapter 2 , Appendix 2A provides a detailed discussion of bank financial statement analysis using a return-on-equity framework, with an example in the appendix and questions included in the end-of-chapter questions.
- Chapter 3 includes a report on shadow banking.
- Chapter 4 includes an example of the bank bill swap rate manipulation by some traders in Australia. This chapter also includes an additional web question.
- Chapter 9 , on market risk, contains a section on the actual measurement of market risk by Westpac Bank. It also has a new section on expected shortfall (ES), also referred to as conditional VaR, and expected tail loss. The chapter also includes an updated discussion of the BIS approach to market risk, as part of Basel III. The end-of-chapter questions and the integrated mini case study have been significantly revised.
- Chapter 10 includes a discussion of macro-prudential tools available to regulators to curb excessive credit growth. It also includes a new integrated mini case study.
- Chapter 13 includes a discussion of the liberalisation of the Chinese renminbi.
- Chapter 14 , on liquidity risk, updates the discussion of the Basel III liquidity reforms.
- Chapter 15 , on liability and liquidity management, has been updated to include the final version of APRA's liquidity regulations and the RBA's various liquidity facilities. This chapter also includes a discussion of global liquidity and its impact on the performance of Australian financial institutions.
- Chapter 17 contains a new section on FIs' advanced technology requirements, and a discussion of the future of global payments systems.
- Chapter 18 has been updated to reflect the latest regulatory reforms.

Text at a glance

Special features have been integrated throughout the text to encourage students' interaction with the text and to help them to absorb the material. Some of these features are:

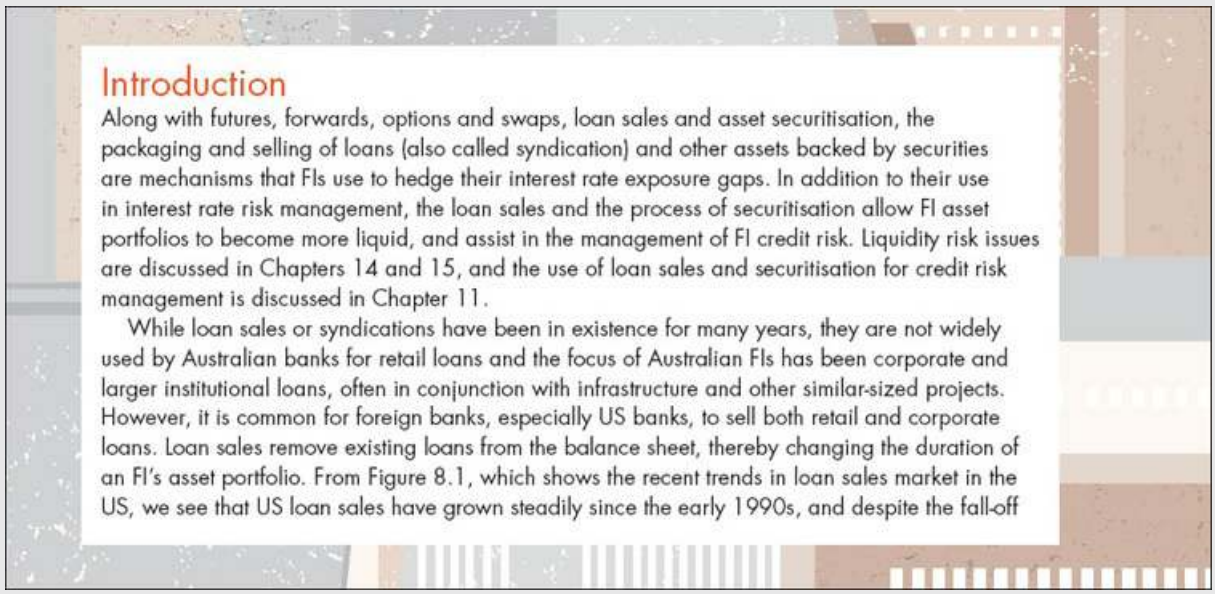
Learning objectives outline the skills you should have obtained upon completion of the chapter.



Learning objectives (LO)

8.1 Discover why FIs sell loans.
8.2 Learn about the types of loan sales contracts.
8.3 Understand how FIs use loan sales and securitisation to manage interest rate risk.
8.4 Learn which assets can be securitised and the types of assets most securitised by Australian FIs.
8.5 Discover how FIs can change the risk characteristics of their balance sheets using securitisation.
8.6 Be able to identify the different forms of securitisation available to FIs.
8.7 Understand prepayment risk and how this can be modelled.

Each chapter begins with a **short introduction** that sets the theme of the chapter you are about to explore.

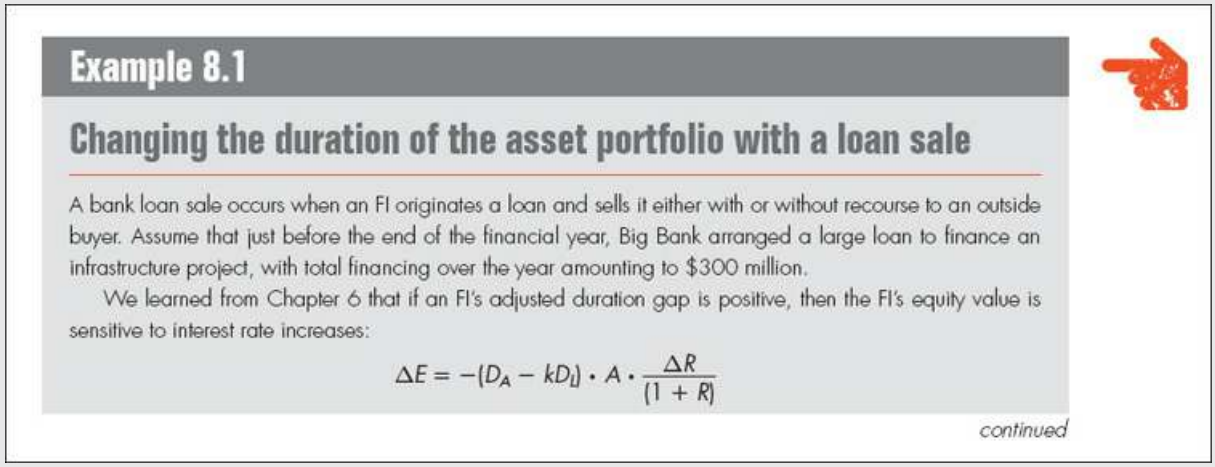


Introduction

Along with futures, forwards, options and swaps, loan sales and asset securitisation, the packaging and selling of loans (also called syndication) and other assets backed by securities are mechanisms that FIs use to hedge their interest rate exposure gaps. In addition to their use in interest rate risk management, the loan sales and the process of securitisation allow FI asset portfolios to become more liquid, and assist in the management of FI credit risk. Liquidity risk issues are discussed in Chapters 14 and 15, and the use of loan sales and securitisation for credit risk management is discussed in Chapter 11.

While loan sales or syndications have been in existence for many years, they are not widely used by Australian banks for retail loans and the focus of Australian FIs has been corporate and larger institutional loans, often in conjunction with infrastructure and other similar-sized projects. However, it is common for foreign banks, especially US banks, to sell both retail and corporate loans. Loan sales remove existing loans from the balance sheet, thereby changing the duration of an FI's asset portfolio. From Figure 8.1, which shows the recent trends in loan sales market in the US, we see that US loan sales have grown steadily since the early 1990s, and despite the fall-off

The chapter **examples** provide numerical demonstrations of the analytics described in various chapters.



Example 8.1

Changing the duration of the asset portfolio with a loan sale

A bank loan sale occurs when an FI originates a loan and sells it either with or without recourse to an outside buyer. Assume that just before the end of the financial year, Big Bank arranged a large loan to finance an infrastructure project, with total financing over the year amounting to $300 million.

We learned from Chapter 6 that if an FI's adjusted duration gap is positive, then the FI's equity value is sensitive to interest rate increases:

$$\Delta E = -(D_A - kD_L) \cdot A \cdot \frac{\Delta R}{(1 + R)}$$

continued

Bold **key terms** in the text are explained in the margins. They highlight the main terms and concepts throughout each chapter and aid in studying. These terms also appear in the glossary at the back of the book.


LO 8.4

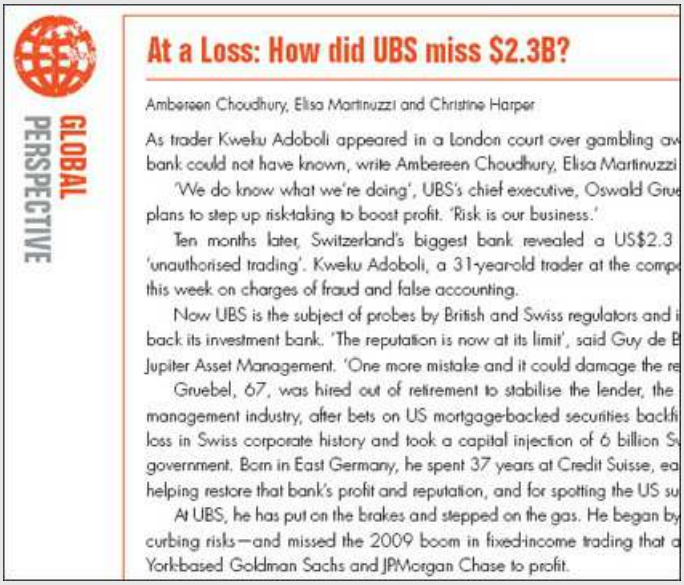
asset securitisation where securities are created based on a pool of underlying assets and the value and income payments of the securities are derived from the underlying assets

SECURITISATION

Along with futures, forwards, options
selling of loans and other assets backed
to hedge FI interest rate exposure ga
portfolios to become more liquid, pro
servicing agents for the assets sold) ar
capital requirements. More specifically,
assets on their balance sheets, and by p

This section investigates the role o

Perspective and feature boxes demonstrate the application of chapter material to current events. They include, Technological Perspective, Industry Perspective, Regulator's Perspective, Global Perspective, and Learnings from the Financial System Inquiry.


GLOBAL PERSPECTIVE

At a Loss: How did UBS miss $2.3B?

Ambereen Choudhury, Elisa Martinuzzi and Christine Harper

As trader Kweku Adoboli appeared in a London court over gambling av
bank could not have known, write Ambereen Choudhury, Elisa Martinuzzi

'We do know what we're doing', UBS's chief executive, Oswald Grue
plans to step up risk-taking to boost profit. 'Risk is our business.'

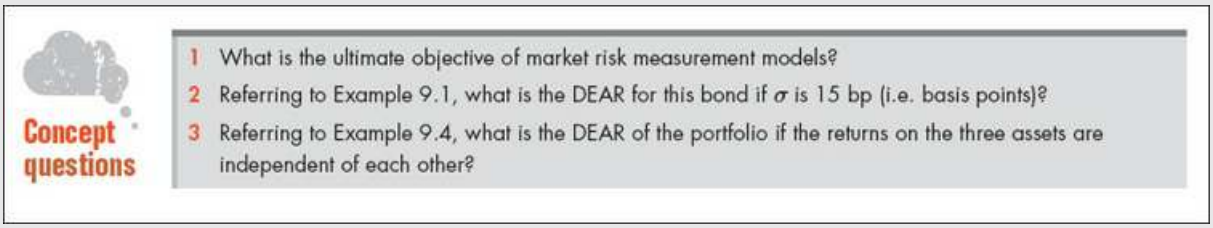
Ten months later, Switzerland's biggest bank revealed a US$2.3
'unauthorised trading'. Kweku Adoboli, a 31-year-old trader at the compe
this week on charges of fraud and false accounting.

Now UBS is the subject of probes by British and Swiss regulators and i
back its investment bank. 'The reputation is now at its limit', said Guy de B
Jupiter Asset Management. 'One more mistake and it could damage the re

Gruebel, 67, was hired out of retirement to stabilise the lender, the
management industry, after bets on US mortgage-backed securities backfi
loss in Swiss corporate history and took a capital injection of 6 billion S
government. Born in East Germany, he spent 37 years at Credit Suisse, ea
helping restore that bank's profit and reputation, and for spotting the US su

At UBS, he has put on the brakes and stepped on the gas. He began by
curbing risks—and missed the 2009 boom in fixed-income trading that a
York-based Goldman Sachs and JPMorgan Chase to profit.

Concept questions allow you to test yourself on the main concepts within each major chapter section.


Concept questions

1. What is the ultimate objective of market risk measurement models?
2. Referring to Example 9.1, what is the DEAR for this bond if σ is 15 bp (i.e. basis points)?
3. Referring to Example 9.4, what is the DEAR of the portfolio if the returns on the three assets are independent of each other?

Figures and tables are used to illustrate examples presented within the chapters.

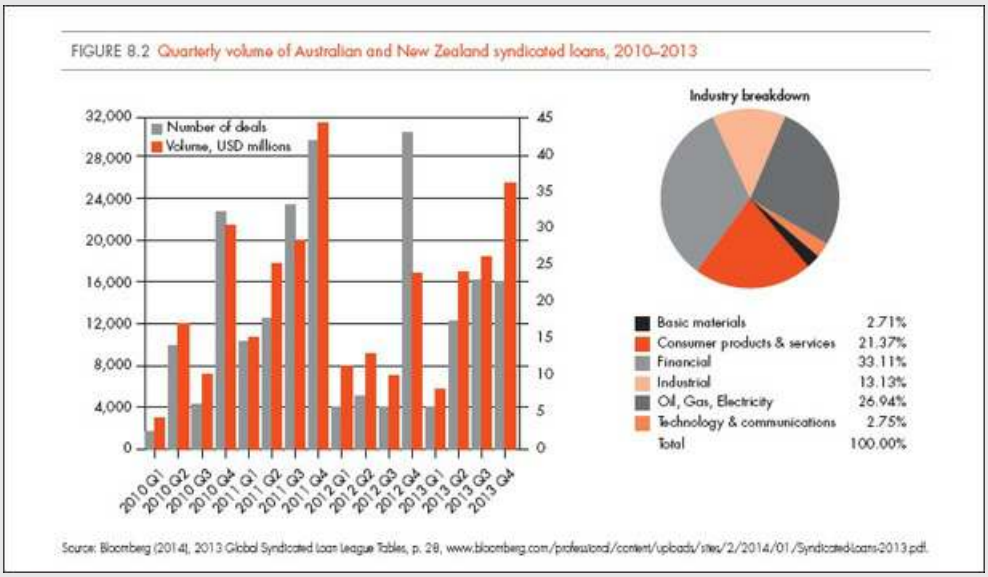
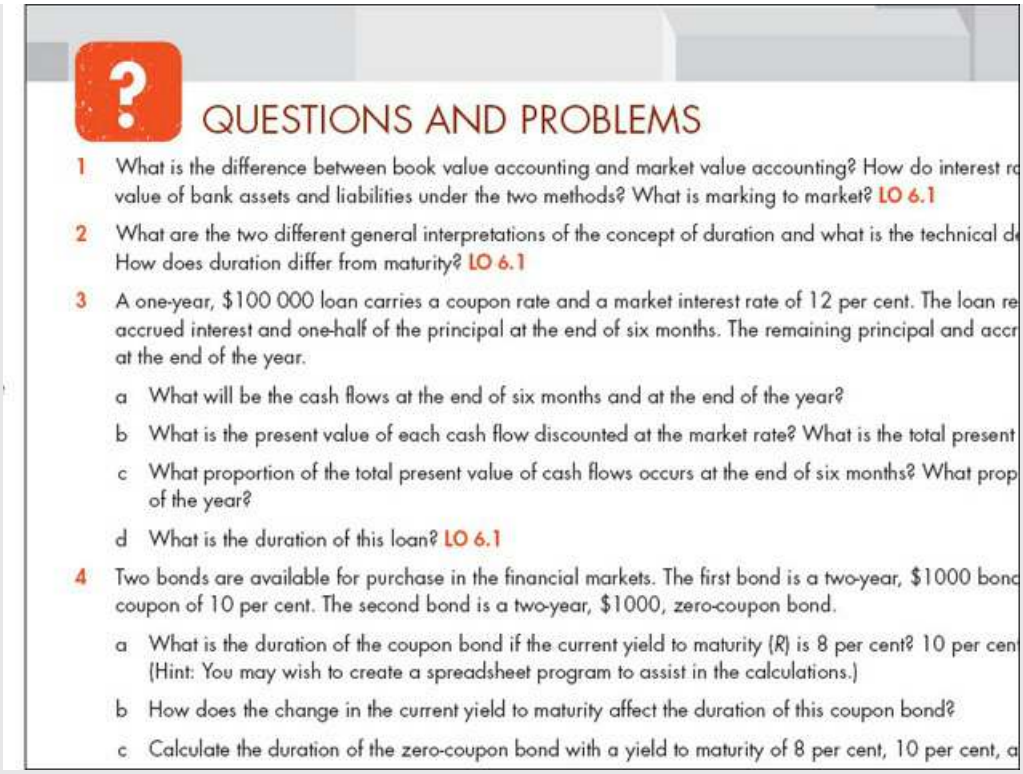


FIGURE 8.2 Quarterly volume of Australian and New Zealand syndicated loans, 2010–2013

Source: Bloomberg (2014), 2013 Global Syndicated Loan League Tables, p. 28, www.bloomberg.com/professional/content/uploads/sites/2/2014/01/SyndicatedLoans-2013.pdf.

Questions and problems, which are written for varied levels of difficulty, give you the opportunity to practise a variety of skills using the same data or set of circumstances.



QUESTIONS AND PROBLEMS

1 What is the difference between book value accounting and market value accounting? How do interest ra value of bank assets and liabilities under the two methods? What is marking to market? LO 6.1

2 What are the two different general interpretations of the concept of duration and what is the technical de How does duration differ from maturity? LO 6.1

3 A one-year, $100 000 loan carries a coupon rate and a market interest rate of 12 per cent. The loan re accrued interest and one-half of the principal at the end of six months. The remaining principal and accr at the end of the year.

a What will be the cash flows at the end of six months and at the end of the year?

b What is the present value of each cash flow discounted at the market rate? What is the total present

c What proportion of the total present value of cash flows occurs at the end of six months? What prop of the year?

d What is the duration of this loan? LO 6.1

4 Two bonds are available for purchase in the financial markets. The first bond is a two-year, $1000 bond coupon of 10 per cent. The second bond is a two-year, $1000, zero-coupon bond.

a What is the duration of the coupon bond if the current yield to maturity (*R*) is 8 per cent? 10 per cen (Hint: You may wish to create a spreadsheet program to assist in the calculations.)

b How does the change in the current yield to maturity affect the duration of this coupon bond?

c Calculate the duration of the zero-coupon bond with a yield to maturity of 8 per cent, 10 per cent, a

Web questions encourage you to research relevant websites and test your knowledge.

WEB QUESTIONS

36 Go to the Reserve Bank of Australia's website and update Table 10.1. LO 10.2

37 Go to the APRA website and see how the ranking of providers has changed since Table 10.3 was released. LO 10.1, 10.2

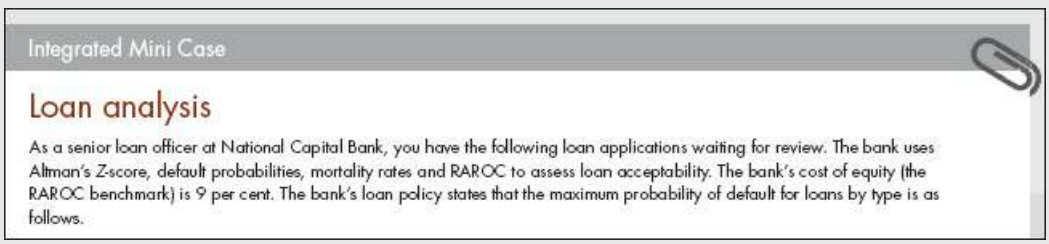
38 Go to the Moody's Analytics and Moody's Australia websites to see any recent examples of where the expected default frequency (EDF) has provided an early warning of significant changes in a company's default probability. LO 10.10

Pertinent websites appear throughout each chapter as well as at the end of each chapter. These guide you to the most recent issues and data on the internet.

PERTINENT WEBSITES

Moody's Analytics www.moodysanalytics.com
Moody's Australia www.moodys.com.au
Reserve Bank of Australia www.rba.gov.au
Standard & Poor's www.standardandpoors.com
Australian Treasury www.treasury.gov.au
Risk Management Association/USA www.rmahq.org
Financial Management Research Centre www.fmrc.com.au
Securities and Exchange Commission www.sec.gov
HIH Insurance Group www.hih.com.au

Integrated mini cases provide more complex and realistic analysis of many of the topics covered in the chapter.



Integrated Mini Case

Loan analysis

As a senior loan officer at National Capital Bank, you have the following loan applications waiting for review. The bank uses Altman's Z-score, default probabilities, mortality rates and RAROC to assess loan acceptability. The bank's cost of equity (the RAROC benchmark) is 9 per cent. The bank's loan policy states that the maximum probability of default for loans by type is as follows.

Appendices cover advanced and additional concepts. Additional appendices appear online.

Appendix 6B

LO 6.7

Incorporating convexity into the duration model[15]

In this chapter, we have established the following three characteristics of convexity:

1 *Convexity is desirable* The greater the convexity of a security or a portfolio of securities, the more insurance or interest rate protection an FI manager has against rate increases and the greater the potential gains following interest rate falls.

2 *Convexity and duration* The larger the interest rate changes and the more convex a fixed-income security or portfolio, the greater the error the FI manager faces in using just duration (and

Organisation and content

The focus of this text is on financial institutions (FIs), their return and risk, and the sources of that return and risk. Consequently, this book outlines the ways in which managers of modern FIs can expand return with a managed level of risk to achieve the best, or most favourable, return–risk outcome for FI owners.

Chapter 1 Why are financial institutions special? introduces the special functions of FIs and takes an analytical look at how financial intermediation benefits today's economy.

Chapter 2 The financial services industry: depository institutions and **Chapter 3 The financial services industry: other financial institutions** provide an overview of the Australian financial services industry, describing the key balance sheet and regulatory features of the major institution types within the industry. We discuss depository institutions in **Chapter 2** , and other institutions in **Chapter 3** .

Chapter 4 Risks of financial institutions previews the risk measurement and management section—the second part of the book—with an overview of the risks facing a modern FI.

Chapter 5 Interest rate risk measurement: the repricing model , Chapter 6 Interest rate risk measurement: the duration model, Chapter 7 Managing interest rate risk using off-balance-sheet instruments and **Chapter 8 Managing interest rate risk using loan sales and securitisation** examine interest rate risk in detail. **Chapters 5 and 6** describe interest rate risk measurement by investigating the net interest margin as a source of profitability and risk, with a focus on the effects of interest rate volatility and the mismatching of asset and liability durations on FI risk exposure. **Chapter 7** explores ways in which interest rate risk can be managed through the use of derivative instruments. Each derivative instrument is described before any discussion of its use in the management of interest rate risk. **Chapter 8** explores the use of loan sales and asset securitisation in management of interest rate risk.

Chapter 9 Market risk analyses market risk, which results when FIs actively trade bonds, equities and foreign currencies.

Chapter 10 Credit risk I: individual loan risk examines the measurement of credit risk on individual loans and bonds, and how this risk adversely affects an FI's profits through losses and provisions against the loan and debt security portfolio.

Chapter 11 Credit risk II: loan portfolio and concentration risk explores the risk of loan (asset) portfolios and the effects of loan concentrations on risk exposure. Ways of managing credit risk through the use of various credit models are discussed in some detail.

Chapter 12 Sovereign risk examines the special issue of sovereign risk, where FIs engage in sovereign lending and securities activities.

Chapter 13 Foreign exchange risk looks at how modern FIs do more than generate returns and bear risk through traditional maturity mismatching and credit extensions and pursue foreign exchange activities and overseas financial investments.

Chapter 14 Liquidity risk and **Chapter 15 Liability and liquidity management** examine ways in which FIs can insulate themselves from liquidity risk, which FIs face as a by-product of the provision of their interest rate and credit intermediation services. We analyse the special nature of this risk and the various approaches which FIs may take to manage it.

Chapter 16 Off-balance-sheet risk looks at how FIs are increasingly engaging in off-balance-sheet activities to generate fee income, and **Chapter 17 Technology and other operational risks** examines how FIs are making technological investments to reduce costs. Each of these has implications for the size and variability of an FI's profits and/or revenues.

Chapter 18 Capital management and adequacy, the final chapter, focuses on the fact that at the core of FI risk insulation is the size and adequacy of the owners' capital or equity investment in the FI, which is affected by all of the risks discussed in the book.

PART ONE
INTRODUCTION

CHAPTER 1 Why are financial institutions special?
CHAPTER 2 The financial services industry: depository institutions
CHAPTER 3 The financial services industry: other financial institutions
CHAPTER 4 Risks of financial institutions

Chapter 1
Why are financial institutions special?

Learning objectives (LO)

1.1 Understand why financial institutions (FIs) are different from commercial firms (which is why, for example, the failure of a large bank may have more serious effects on the economy than the failure of a large steel or car producer).

1.2 Learn how financial institutions—especially banks—provide a special set of services to households and firms, and the uniqueness of these services.

1.3 Discover why FIs' very specialness results in increased regulation and regulatory oversight that other corporations do not require, which imposes a regulatory burden on financial institutions.

1.4 Gain knowledge of how regulation can and does affect the efficiency with which FIs produce financial services.

1.5 Understand how the failure of FIs to perform the specialist functions of risk measurement and management can lead to systemic risk in the domestic and global financial systems.

1.6 Comprehend the causes of the sub-prime crisis in the US and how this led to the global financial crisis.

Introduction

The seeds of the modern Australian financial services industry were sown in Sydney in the early days of the colony. Australia's first bank, the Bank of New South Wales (now Westpac Bank), was established in 1817 and quickly expanded to all the other Australian states as well as New Zealand, Fiji and Papua New Guinea by the early twentieth century. In 1849 the formation of the Australian Mutual Provident Society (now AMP Limited) marked the start of Australia's life insurance industry. Other private financial companies (banks, life insurance companies and investment firms) flourished in the unregulated finance system until the Great Depression of the 1930s, when many failed. The Commonwealth Bank of Australia (now the Commonwealth Banking Corporation), established in 1911 by the Australian government to undertake both commercial (trading) and savings banking, was the only bank to have an Australian government guarantee.

The importance of the performance of the financial sector to the health of the Australian economy is reflected in the many government inquiries into the financial system. The first, the Napier Inquiry of 1935, [1] followed disquiet with the performance of the Australian banking industry during the Great Depression, and recommended the establishment of a private banking system regulated by a central bank responsible for monetary policy. The most recent, the Murray Inquiry, opened for submissions in December 2013 and delivered its final report in December 2014. [2]

The *Banking Act 1945* converted most of the Napier recommendations into law, creating an industry structure that remains largely unchanged. It also heralded modern banking regulation. From 1956, the larger private trading banks followed the lead of the Commonwealth Bank and established savings bank and finance company subsidiaries, in part to avoid regulatory restrictions and in part to develop new markets. Despite regulations, banks were protected by tight entry restrictions and profitability grew steadily.

The role of the central bank began in 1924 with the Commonwealth Bank being granted responsibility for currency note issue. Following this, 'in response to the pressures of the Great Depression in the early 1930s and later by formal, albeit temporary, expansion of its powers under wartime regulations', [3] it gained responsibility for foreign exchange control and a wide range of controls over the banking system generally (loan policy, interest rate restrictions and statutory reserve deposit requirements for private banks). [4] The separation of central banking powers from commercial and savings banking operations came with the *Reserve Bank Act 1959* and the establishment of the Reserve Bank of Australia (RBA) the following year.

By the 1960s, Australian trading banks formed the major financial institution (FI) group, followed by life insurance (with about 80 per cent of the asset base of trading banks). The life insurers' growth was partly driven by tax concessions granted to life insurance and superannuation business up to the 1980s. Despite its dominance, bank growth was restricted by tight qualitative and quantitative regulation, and from the 1950s the growth of non-bank financial institutions (NBFIs) was encouraged by the significant rise in demand for mortgage and household goods financing. For example, life insurers and building societies catered for mortgage demand not satisfied by banks due to regulated limits on lending, specialist finance companies satisfied gaps in the household consumable debt market, and merchant (investment) banks filled finance gaps unmet by banks for resources and other projects. [5]

Regulation of the Australian financial services industry, like that of other developed countries, has moved from qualitative and quantitative rules towards a system of risk-based regulation, which better recognises the pressures of competition, innovation and efficiency. The re-regulation of the banking system, along with financial sector reforms since the 1970s, has produced the system we have today. [6] Bank assets have grown considerably (see Chapter 2), and new product development has thrived. We now see a blurring of traditional financial institutional boundaries as competition across the sector has increased. National boundaries have also diminished in importance, with the financial services industry becoming truly global. These changes have presented challenges for managers of FIs as both products and the business environment have increased in complexity and risk. However, the many opportunities presented have resulted in the development of a highly profitable banking industry in Australia, with regulatory supervision assisting in the maintenance of stability.

The risk inherent in the FI sector is evidenced by the collapse of global financial markets in the late 2000s, second only to that experienced during the Great Depression. The global financial crisis (GFC) produced a major reshaping of FI sectors in many countries, particularly the US, Europe and the UK. It also saw the demise of many large, global FIs such as Lehman Brothers in the US and the Bank of Scotland in the UK. While Australia suffered from the volatility of world markets, its well-capitalised and highly rated banks contributed to the emergence from the GFC of a stronger financial system, both in absolute terms and relative to banking systems in other countries. In Australia, there were neither bank failures nor bank bail-outs during the GFC, limiting any drain on taxpayers' money. Regulators suggest that this was no accident and that the system benefited both from years of rigorous supervision by Australian financial regulators and from the whole industry's understanding of the importance of prudential supervision. [7]

As the competitive environment changes, attention is focused on profit and, more than ever, risk. The major themes of this book are the measurement and management of risks of FIs. FIs (which include banks, credit unions, insurance companies and managed funds) perform the essential function of channelling funds from those with surplus funds (suppliers of funds) to those with shortages of funds (users of funds). At the end of 2013, Australian FIs held assets totalling more than $5.4 trillion, more than 3.4 times Australia's nominal GDP.

Although we might categorise or group FIs as life insurance companies, banks, finance companies and so on, all FIs face common risks. Specifically, all FIs described in this chapter and in Chapters 2 and 3 hold some assets that are potentially subject to default or credit risk and tend to mismatch the maturities of their balance sheet assets and liabilities to a greater or lesser extent and are thus exposed to interest rate risk. Moreover, all FIs are exposed to some degree of liability withdrawal or liquidity risk, depending on the type of claims they have sold to liability holders. In addition, most FIs are exposed to some type of underwriting risk, either through the sale of securities or the issue of various types of credit guarantees on or off the balance sheet. Finally, all FIs are exposed to operating cost risks because the production of financial services requires the use of real resources and back-office support systems (labour and technology combined to provide services).

Because of these risks and the special role that FIs play in the financial system, FIs are singled out for special regulatory attention. In many ways, these are emphasised in the priorities and main themes of the Murray Inquiry 2014 set out in the Learnings from the Financial System Inquiry feature box which follows.

Learnings from the Financial System Inquiry

Major Themes and Issues	
1. Growth and consolidation	
Competition and contestability	The banking sector is competitive, albeit concentrated. The application of capital requirements is not competitively neutral.
	Regulation of credit card and debit card payment schemes is required for competition to lead to more efficient outcomes. However, differences in the structure of payment systems have resulted in systems that perform similar functions being regulated differently, which may not be competitively neutral.
Funding Australia's economic activity	Ongoing access to foreign funding has enabled Australia to sustain higher growth than otherwise would have been the case. The risks associated with Australia's use of foreign funding can be mitigated by having a prudent supervisory and regulatory regime and sound public sector finances.
	There are structural impediments for small- and medium-sized enterprises to access finance. These impediments include information asymmetries, regulation and taxation.
	Australia has an established domestic bond market, although a range of regulatory and tax factors have limited its development.
Superannuation efficiency and policy settings	There is little evidence of strong fee-based competition in the superannuation sector, and operating costs and fees appear high by international standards. This indicates there is scope for greater efficiencies in the superannuation system.
	If allowed to continue, growth in direct leverage by superannuation funds, although embryonic, may create vulnerabilities for the superannuation and financial systems.
	Superannuation policy settings lack stability, which adds to costs and reduces long-term confidence and trust in the system.
2. Post-GFC regulatory response	
Stability and the prudential framework	During the GFC, significant government actions in a number of countries, including Australia, entrenched perceptions that some institutions are too big to fail. These perceptions can be reduced in Australia by making it more credible to resolve these institutions without government support.
	A number of jurisdictions have implemented new macroprudential toolkits to assist with managing systemic risks. The effectiveness of these for a country like Australia is not yet well established and there are significant practical difficulties in using such tools.
	Australia has implemented some aspects of global prudential frameworks earlier than a number of jurisdictions. It has also used national discretion in defining capital ratios. When combined with other aspects of the prudential framework and calculated on a consistent basis, Australian banks' capital ratios (common equity tier 1) are around the middle of the range relative to other countries. However, differences such as those in definitions of capital do limit international comparability.
	To contribute to the effectiveness of the financial system, sound corporate governance requires clarity of the responsibility and authority of boards and management. There are differences in the duties and requirements of governing bodies for different types of financial institutions and, within institutions, substantial regulator focus on boards has confused the delineation between the role of the board and that of management.
Consumer outcomes and conduct regulation	The current disclosure regime produces complex and lengthy documents that often do not enhance consumer understanding of financial products and services, and impose significant costs on industry participants.
	Affordable, quality financial advice can bring significant benefits for consumers. Improving the standards of adviser competence and removing the impact of conflicted remuneration can improve the quality of advice. Comprehensive financial advice can be costly, and there is consumer demand for lower-cost scaled advice.
Regulatory architecture	The regulatory perimeters could be re-examined in a number of areas to ensure each is targeted appropriately and can capture emerging risks.
	Australia generally has strong, well-regarded regulators, but some areas for improvement have been identified to increase independence and accountability.
	During the GFC and beyond, Australia's regulatory coordination mechanisms have been strong, although there may be room to enhance transparency.
	Regulators' mandates and powers are generally well defined and clear; however, more could be done to emphasise competition matters. In addition, the Australian Securities and Investments Commission (ASIC) has a broad mandate, and the civil and administrative penalties available to it are comparatively low in relation to comparable peers internationally.
3. Emerging trends	
Ageing and retirement incomes	The retirement phase of superannuation is underdeveloped and does not meet the risk management needs of many retirees.
	There are regulatory and other policy impediments to developing income products with risk management features that could benefit retirees.
Technology opportunities and risks	Technological innovation is a major driver of efficiency in the financial system and can benefit consumers. Government and regulators need to balance these benefits against the risks, as they seek to manage the flexibility of regulatory frameworks and the regulatory perimeter. Government is also well positioned to facilitate innovation through coordinated action, regulatory flexibility and forward-looking mechanisms.
	Access to growing amounts of customer information and new ways of using it have the potential to improve efficiency and competition, and present opportunities to empower consumers. However, evidence indicates these trends heighten privacy and data security risks.
	The financial system's shift to an increasingly online environment heightens cyber security risks and the need to improve digital identity solutions. Government has the ability to facilitate industry coordination and innovation in these areas.
International integration	Although elements of Australia's financial system are internationally integrated, a number of potential impediments have been identified. Financial system developments in the region will require continuing government engagement to facilitate integration with Asia.

	Government efforts to promote Australia's policy interests on international standard setting bodies have been successful. Domestic regulatory processes could be improved to better consider international standards and foreign regulation.
	Coordination of Australia's international financial integration could be improved.

Source: Financial System Inquiry, *Interim Report,* 'Themes and major issues', 15 July 2014, found at fsi.gov.au/publications/interim-report/01-overview/themes-and-major-issues/ .

In this chapter, we first examine questions related to this specialness. In particular, what are the special functions that FIs—both depository institutions (banks, building societies and credit unions) and non-depository institutions (insurance companies, securities brokers, investment banks, finance companies and managed funds)—provide? These special functions are summarised in Table 1.1 . How do these functions benefit the economy? Second, we investigate what makes some FIs more special than others. Third, we look at how unique and long-lived the special functions of FIs really are. As a part of this discussion, we briefly examine how changes in the way FIs deliver services played a major part in the events leading up to the GFC of the late 2000s. A more detailed discussion of the causes, major events and regulatory and industry changes resulting from the financial crisis is provided in Appendix 1A to this chapter (online at www.mhhe.com/au/lange4e).

TABLE 1.1 Areas of financial institutions' specialness in the provision of services

Information costs	The aggregation of funds in an FI provides greater incentive to collect information about customers (such as corporations) and to monitor their actions. The relatively large size of the FI allows this collection of information to be accomplished at a lower average cost (so-called economies of scale) than would be the case for individuals.
Liquidity and price risk	FIs provide financial claims to household savers with superior liquidity attributes and with lower price risk.
Transaction cost services	Similarly to economies of scale in information production costs, an FI's size can result in economies of scale in transaction costs.
Maturity intermediation	FIs can better bear the risk of mismatching the maturities of their assets and liabilities.
Transmission of monetary supply	Depository institutions are the conduit through which monetary policy actions by the country's central bank (Reserve Bank of Australia) impact on the rest of the financial system and the economy.
Credit allocation	FIs are often viewed as the major, and sometimes only, source of financing for a particular sector of the economy, such as farming, small business and residential real estate.
Intergenerational wealth transfers	FIs, especially life insurance companies and superannuation funds, provide savers with the ability to transfer wealth from one generation to the next.
Payment services	The efficiency with which depository institutions provide payment services, such as cheque clearing, directly benefits the economy.
Denomination intermediation	FIs, such as managed funds, allow small investors to overcome constraints to buying assets imposed by large minimum denomination size.

FINANCIAL INSTITUTIONS' SPECIALNESS

LO 1.1, 1.2

To understand the important economic function of FIs, imagine a world in which these FIs do not exist. In such a world, households generating excess savings by consuming less than they earn would have only two choices: they could hold cash as an asset or invest in the securities issued by corporations. In general, corporations issue securities to finance their investments in real assets and to cover the gap between their investment plans and their internally generated savings, such as retained earnings.

Figure 1.1 shows such a world where household savings would flow to corporations and, in return, financial claims (equity and debt securities) would flow from corporations to households. In such an economy without FIs, the level of funds flowing between household savers and the corporate sectors is likely to be quite low, for several reasons. First, once they have lent money to a firm by buying its securities, households need to monitor or check the actions of that firm to ensure that the firm's management neither absconds with nor wastes the funds on unprofitable projects (that is, projects with negative net present values). Such monitoring actions are extremely costly for any given household because the collection of sufficiently high-quality information requires considerable time and expense, relative to the size of the average household saver's investments. Given this, it is likely that each household would prefer to leave the monitoring to others, and in the end, little or no monitoring would be done. The resulting lack of monitoring would reduce the attractiveness of, and increase the risk of, investing directly into corporate debt and equity.

Second, the relatively long-term nature of corporate equity and debt, and the lack of a secondary market in which households can sell these securities, creates a disincentive for household investors to hold the direct financial claims issued by corporations. Specifically, given the choice between holding cash and holding long-term securities, households may well choose to hold cash for **liquidity** reasons, especially if they plan to use their savings for consumption expenditures in the near future.

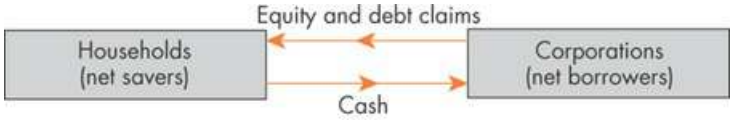
liquidity the ease of converting an asset into cash

Finally, even if financial markets existed (but without FIs to operate them) to provide liquidity services by allowing households to trade corporate debt and equity securities among themselves, investors also face a **price risk** on the sale of securities, and the secondary market trading of securities involves various transaction costs. That is, the price at which household investors can sell securities on secondary markets such as the Australian Securities Exchange (ASX) may well differ from the price they initially paid for the securities.

price risk the risk that the sale price of an asset will be lower than the purchase price of that asset

Because of monitoring costs, liquidity costs and price risk, the average household saver may view direct investment in corporate securities as an unattractive proposition and prefer either not to save or to save in the form of cash.

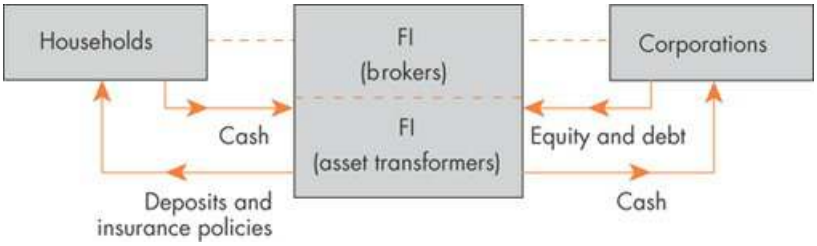
FIGURE 1.1 Flow of funds in a world without FIs



However, the economy has developed an alternative and indirect way to channel household savings to the corporate sector. This is to channel savings via FIs. Because of the costs of monitoring, liquidity and price risk, as well as for other reasons that are explained later, savers often prefer to hold the financial claims issued by FIs rather than those issued by corporations. Consider Figure 1.2 , which is a closer representation than Figure 1.1 of the world in which we live and the way funds flow in our economy. Notice how FIs are standing, or intermediating, between the household and corporate sectors. A **financial intermediary** fulfils two functions, and any given FI might specialise in one or the other or might do both simultaneously.

Financial intermediary an entity that acts as the 'middle person' between two parties in a financial transaction

FIGURE 1.2 Flow of funds in a world with FIs



FI function as broker

The first function of an FI is the brokerage or broking function. When acting as a pure broker, an FI acts as an agent for the saver by providing information and transaction services. For example, full-service securities firms (e.g. Bell Potter Securities, Morgan Stanley Australia and Goldman Sachs Australia) carry out investment research and make investment recommendations for their retail (or household) clients as well as conducting the purchase or sale of securities for a commission or fee. Discount brokers (e.g. CommSec, ETrade and Macquarie Edge) carry out the purchase or sale of securities at better prices and with greater efficiency than household savers could achieve by trading on their own. This efficiency results in reduced costs of trading, or **economies of scale** (see Chapter 17 for a detailed discussion). Similarly, independent insurance brokers identify the best types of insurance policies household savers can buy to fit their savings and retirement plans. In fulfilling a brokerage function, the FI plays an extremely important role by reducing research, transaction and information costs or imperfections between households and corporations. Thus, the FI encourages a higher rate of savings than would otherwise exist.

economies of scale the concept that the cost reduction in trading and other transaction services results from increased efficiency when FIs perform these services

FI function as asset transformer

The second function of an FI is the asset-transformation function. In acting as an **asset transformer** the FI issues financial claims that are far more attractive to household savers than claims directly issued by corporations. That is, for many households, the financial claims issued by FIs dominate those issued directly by corporations as a result of lower monitoring costs, lower liquidity costs and lower price risk. In acting as asset transformers, FIs purchase the financial claims issued by corporations—equities, bonds, and other debt claims called **primary securities** —and finance these purchases by selling financial claims to household investors and other sectors in the form of deposits, insurance policies and so on. The financial claims of FIs may be considered **secondary securities** because these assets are backed by the primary securities issued by commercial corporations that in turn invest in real assets. Specifically, FIs are independent market participants that create financial products whose 'value added' contribution to their clients is the transformation of financial risk.

asset transformer an FI issues financial claims that are more attractive to household savers than the claims directly issued by corporations

primary securities securities issued by corporations and backed by the real assets of those corporations

secondary securities securities issued by FIs and backed by primary securities

How can FIs purchase the direct or primary securities issued by corporations and profitably transform them into secondary securities more attractive to household savers? This question strikes at the very heart of what makes FIs both special and important to the economy. The answer lies in the ability of FIs to better resolve the three costs facing a saver who chooses to invest directly in corporate securities, namely monitoring costs, liquidity costs and price risk. These are discussed next.

Information costs

One problem faced by an average saver directly investing in a commercial firm's financial claims is the high cost of information collection. Household savers must monitor the actions of firms in a timely and complete fashion after purchasing securities. Failure to monitor exposes investors to **agency costs** —that is, the risk that the firm's owners or managers will take actions with the saver's money contrary to the promises contained in the covenants of its securities contracts. Monitoring costs are part of overall agency costs, since agency costs arise whenever economic agents enter into contracts in a world of incomplete information and thus costly information collection. The more difficult and costly it is to collect information, the more likely it is that contracts will be broken. In this case the saver (the so-called 'principal') could be harmed by the actions taken by the borrowing firm (the so-called 'agent'). One solution to this problem is for a large number of small savers to place their funds with a single FI. The FI groups these funds together and invests in the direct or primary financial claims issued by firms. This accumulation of funds resolves a number of problems.

agency costs costs relating to the risk that the owners and managers of firms that receive savers' funds will take actions with those funds contrary to the best interests of the savers

FI role as delegated monitor

The FI has a much greater incentive to collect information and monitor the actions of the firm because it has far more at stake than does any small, individual household. This alleviates the free-rider problem that exists when small household savers leave it to each other to collect information and monitor the actions of firms. In a sense, small savers have appointed the FI as a **delegated monitor** to act on their behalf. Not only does the FI have a greater incentive to collect information, the average cost of collecting the information is lower. For example, the cost to a small investor of buying a $100 broker's report may seem inordinately high for a $10 000 investment. For an FI with $10 million under management, however, the cost seems trivial. Such economies of scale of information production and collection enhance the advantages to savers of using FIs rather than directly investing themselves.

delegated monitor an economic agent appointed to act on behalf of smaller agents in collecting information and/or investing funds

FI role as information producer

Associated with the greater incentive to monitor and the costs involved in failing to monitor appropriately, FIs may develop new secondary securities that enable them to monitor more effectively. Thus, a richer menu of contracts may improve the monitoring abilities of FIs. The classic example of this is the bank loan to a business. Business loans are generally shorter term debt contracts rather than bond contracts. The short-term nature allows the FI to exercise more monitoring power and control over the borrower. In particular, the information the FI generates regarding the firm is frequently updated as its loan renewal decisions are made. When bank loan contracts are sufficiently short term, the banker becomes almost like an insider to the firm, given the banker's informational familiarity with its operations and financial conditions. Indeed, more frequent monitoring often replaces the need for the relatively inflexible and hard-to-enforce **loan covenants** found in bond contracts. Thus, by acting as delegated monitors and producing better and more timely information, FIs reduce the degree of information imperfection and asymmetry between the ultimate suppliers and users of funds in the economy.

loan covenants legal clauses in a loan contract that require the borrower to take or avoid certain actions

Liquidity and price risk

In addition to improving the flow and quality of information, FIs provide financial or secondary claims to household savers. Often, these claims have superior liquidity attributes compared to primary securities such as corporate equity and bonds. For example, depository institutions (banks, building societies and credit unions) issue transaction account deposit contracts with a fixed principal value (and sometimes a guaranteed interest rate) that can be withdrawn immediately on demand by household savers. Cash management funds issue shares (units) to household savers that allow those savers to enjoy almost fixed-principal (deposit-like) contracts while often earning interest rates higher than those on bank deposits. Even life insurance companies allow policyholders to borrow at very short notice against some of their policy types. The real puzzle is how FIs such as depository institutions can offer highly liquid and low price-risk contracts to savers on the liability side of their balance sheets, while investing in relatively illiquid and higher price-risk securities issued by corporations on the asset side. Furthermore, how can FIs be confident enough to guarantee that they can provide liquidity services to investors and savers when they themselves invest in risky asset portfolios? And why should savers and investors believe FIs' promises regarding the liquidity of their investments?

The answers to these questions lie in the ability of FIs to **diversify** away some but not all of their portfolio risks. The concept of diversification is familiar to all students of finance: basically, as long as the returns on different investments are not perfectly *positively* correlated, by exploiting the benefits of size FIs diversify away significant amounts of portfolio risk—especially the risk specific to the individual firm issuing any given security. Indeed, research has shown that diversifying across just 15 securities can bring significant diversification benefits to FIs and portfolio managers. Further, as the number of securities in an FI's asset portfolio increases beyond 15 securities, portfolio risk falls, albeit at a diminishing rate.

diversify the ability of an economic agent to reduce risk by holding a number of securities in a portfolio

What is really going on here is that FIs exploit the law of large numbers in their investments whereas, due to their small size, household savers are constrained to holding relatively undiversified portfolios. This risk diversification allows an FI to predict more accurately its expected return on an asset portfolio. A domestically and globally diversified FI may be able to generate an almost risk-free return on its assets. As a result, it can credibly fulfil its promise to households to supply highly liquid claims with little price or capital value risk. A good example of this is the ability of a bank to offer highly liquid demand deposits—with a fixed principal value—as liabilities, while at the same time investing in risky loans as assets. As long as an FI is sufficiently large to gain from diversification and monitoring, its financial claims are likely to be viewed as liquid and attractive to small savers compared to direct investments in the capital market.

Other special services

The preceding discussion has concentrated on three general or special services provided by FIs: reducing household savers' monitoring costs, increasing their liquidity and reducing their price risk exposure. Next, we discuss two other special services provided by FIs: namely, reduced transaction costs and maturity intermediation.

Reduced transaction costs

Just as FIs provide potential economies of scale in information collection, they also provide potential economies of scale in transaction costs. By grouping their assets in FIs that purchase assets in bulk—such as in managed funds and superannuation funds—household savers can reduce the transaction costs of their asset purchases. In addition, bid–ask (buy–sell) spreads are normally lower for assets bought and sold in large quantities.

Maturity intermediation

An additional dimension of FIs' ability to reduce risk by diversification is that they can better bear the risk of mismatching the maturities of their assets and liabilities than can small household savers. Thus, FIs offer maturity intermediation services to the rest of the economy. Specifically, through maturity mismatching, FIs can produce new types of contracts, such as long-term mortgage loans to households, while still raising funds with short-term liability contracts. Further, while such mismatches can subject an FI to interest rate risk (see Chapters 5 and 6), a large FI is better able to manage this risk through its superior access to markets and instruments for hedging, such as loan sales and securitisation (Chapter 8); futures; swaps; and options, caps and floors (Chapter 7).

Concept questions

1. What are the three major risks to household savers from direct security purchases?
2. What are two major differences between brokers (such as security brokers) and depository institutions (such as banks)?
3. What are primary securities and secondary securities?
4. What is the link between asset diversification and the liquidity of deposit contracts?

OTHER ASPECTS OF SPECIALNESS

LO 1.2

The theory of the flow of funds also points to three principal reasons for believing that FIs are special, along with two other associated reasons. In addition, academics, policymakers and regulators identify some other areas of specialness relating to certain specific functions of FIs or groups of FIs. We discuss these next.

The transmission of monetary policy

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The highly liquid nature of bank and other depository institution deposits has resulted in their acceptance by the public as the most widely used medium of exchange in the economy. Indeed, at the core of the three most commonly used definitions of the money supply in Australia—M1, M3 and broad money—lie depository institutions' deposit contracts. [8] Because the liabilities of depository institutions (DIs) are a significant component of the money supply that impacts the rate of inflation, they play a key role in the *transmission of monetary policy* from the central bank to the rest of the economy. That is, DIs are the conduit through which monetary policy actions impact the rest of the financial sector and the economy in general. During the GFC, some countries bailed out DIs and many increased the deposit insurance/guarantee so that the central banks could implement aggressive monetary policy actions to combat collapsing financial markets. For example, in 2008 the Australian government introduced a government deposit guarantee for deposits up to $1 million held in authorised DIs. From 1 February 2012, after the height of the crisis was over, the guarantee was reduced to $250 000. Monetary policy activities conducted by central banks generally include domestic market operations (also called open market operations), setting the cash rate (in Australia this is the base rate at which banks borrow and lend exchange settlement funds), and setting reserve requirements (the minimum amount of reserve assets that DIs must hold to back deposits held as liabilities on their balance sheets). The RBA's domestic market operations include the trading of cash and Treasury securities. [9] Appendix 1B to this chapter reviews the way in which monetary policy is implemented in Australia by the RBA. The International Perspective box in this chapter provides an insight into the role of the European Central Bank (ECB) in the transmission of monetary policy to support economic growth and development, the challenges of such a role when interest rates are close to zero, and the interlinked nature of global financial markets.

Credit allocation

A further reason why FIs are often viewed as special is that they are the major and sometimes only source of finance for a particular sector of the economy pre-identified as being in special need of finance. Policymakers in a number of countries, including Australia, have identified *residential real estate* as needing special subsidies. Such policies enhance the specialness of the FIs that most commonly service the needs of that sector. In Australia, some real estate lending has favourable capital gains tax advantages, and from time to time there have been first-home-buyer allowances offered. In addition, Australian DIs receive favourable capital adequacy requirements for real estate lending relative to other lending—although in part this is due to the high creditworthiness of lending for real estate in Australia. In a similar fashion, agriculture is often identified as an especially important area of the economy in terms of the overall social welfare of the population. We often find that governments directly encourage FIs to specialise in financing the agriculture sector. While this is no longer the case in Australia, in the past state rural development banks were specifically established to assist rural communities. In both other developed countries (such as the US government's creation of Federal Farm Credit Banks) and in developing countries, such special encouragement is also often found. [10]

INTERNATIONAL PERSPECTIVE

Officially, the 18-nation euro zone so far has been experiencing 'disinflation'—a falling rate of inflation. Consumer prices ticked up just 0.7 percent in January [2014] from a year earlier, matching the record low set in October [2013], according to an estimate by Eurostat, the European Union's statistical agency.

The European Central Bank tries to maintain an inflation rate of just below 2 percent.

When it takes hold, deflation—a decline in the general level of prices—undermines growth, and lowers corporate earnings and the values of assets like real estate. And in economies burdened by a debt overhang, as much of the euro zone still is, deflation can drive a self-reinforcing downward spiral, in which borrowers are bankrupted by their inability to repay loans on devalued assets.

That has played out in Japan, where land prices have fallen almost every year since the country's economic bubble burst in the early 1990s, with disastrous consequences for banks, companies and the finances of a generation of savers.

In contrast to inflation, which erodes the real value of loans, making it easier for borrowers to repay, deflation does the opposite. It makes money dearer, raising the burden of repaying existing loans—and adds to the stress on fragile banks that hold the loans when borrowers cannot repay. The ECB, which is undertaking a careful review of banks' finances in its new role as bank supervisor for Europe, is keenly aware of that danger.

The bank cut its main rate target in November to a historic low of 0.25 percent after inflation for October came in at a record low. But the bank's ability to use interest rates, the conventional tool for influencing prices, is limited by the fact that nominal interest rates cannot go below zero.

The ECB, which sets monetary policy for the euro zone, has argued that there are limits to what it can do.

'In a deflationary environment, monetary policy may thus not be able to sufficiently stimulate aggregate demand by using its interest rate instrument,' the ECB says on its website. 'This makes it more difficult for monetary policy to fight deflation than to fight inflation.'

[T]he International Monetary Fund was warning as early as last summer of the possibility of a debt-deflation spiral in the euro zone.

'There is nothing magical about the number zero, when inflation turns to deflation,' Olivier Blanchard, chief economist of the International Monetary Fund, noted in a recent blog post. 'But the lower the inflation rate goes, and a fortiori the larger the deflation rate, the more dangerous it is for the euro recovery,' Mr Blanchard wrote. 'To avoid that risk, accommodative monetary policy by the ECB remains of the essence.'

By whatever definition, some euro members are experiencing deflation now. Greece and Cyprus have been posting across-the-board price declines, and Portugal, Spain and Ireland are a whisker away from zero. Even in Germany, haunted by the historical hobgoblin of inflation fears, prices rose at an annual rate of just 1.2 percent last month.

[Chief European economist at Deutsche Bank in London Gilles] Moëc said the bank could use 'technical measures' to increase the amount of cash in the market . . . [or] it could 'send a signal' with a small rate cut, perhaps reducing its main rate down to 0.15 percent. He also suggested the ECB could take the extraordinary step of changing the interest rate it pays banks for their excess deposits—currently at zero—to minus 0.10 percent. That negative rate, in effect, would force banks to pay the ECB to hold their money.

Negative interest rates, however, have been employed only rarely by central banks, with uneven results. And Mr Moëc noted that with emerging markets currently looking precarious, negative rates could have unforeseen, and potentially destabilizing, consequences for both the euro currency and global markets.

Still, Mr Moëc said, taking such measures now would reassure the market that the bank is determined to stave off deflation—and if necessary would pave the way for a future 'quantitative easing' stimulus plan like those that have been employed by the [US] Federal Reserve (Fed), the Bank of Japan and the Bank of England. In those campaigns, which the Fed has begun 'tapering' off, the central banks bought hundreds of billions of dollars worth of bonds to flood the market with liquidity and keep borrowers afloat.

Source: Extract from David Jolly (2014), 'Economists sound the alarm on deflation in Europe', *New York Times*, 5 February, www.nytimes.com/2014/02/06/business/international/economists-sound-the-alarm-on-deflation-in-europe.html?_r=0 .

Intergenerational wealth transfers or time intermediation

The ability of savers to transfer wealth between youth and old age and across generations is also of great importance to the social well-being of a country. Because of this, life insurance and superannuation funds (see Chapter 3) are encouraged, via special taxation relief and other subsidy mechanisms, to service and accommodate those needs.

Payment services

DIs such as banks, building societies and credit unions (see Chapter 2) are special because the efficiency with which they provide payment services directly benefits the economy. Important payment services in Australia are provided by the Australian Payments Clearing Association (APCA) and the Reserve Bank Information and Transfer System (RITS). Arrangements for clearing most payment instruments in Australia are coordinated by APCA, a limited liability company

with a board of directors drawn from its shareholders—banks, building societies, credit unions and the RBA. APCA manages the clearing of cheques, direct entry payments, ATMs, debit cards and some high-value payments on a deferred net settlement basis. RITS is Australia's high-value payments system, which is used by banks and other approved institutions to settle their payment obligations on a real-time gross settlement basis. These systems provide the smooth transmission of funds throughout the economy and work to avoid any potential gridlock as large transactions are settled.

Other payments clearing systems independent of APCA and RITS include credit cards (MasterCard and VISA) and the BPAY system for payment of bills using the internet. There are also two securities settlement systems with separate payment arrangements: the Austraclear System (owned by the Australian Securities Exchange, or ASX) which settles trades in Treasury and other debt securities, and the ASX's Clearing House Electronic Sub-register System (CHESS) for settlement of equity trades. [11]

Denomination intermediation

Both money market and debt-equity managed funds and unit trusts are special because they provide services relating to denomination intermediation (see Chapter 3). Many assets are sold in very large denominations, putting them out of reach of individual savers or, if purchased, resulting in savers holding highly undiversified asset portfolios. For example, the minimum size of a negotiable certificate of deposit (NCD) and commercial paper (short-term corporate debt) is often $100 000 or higher. Individually, a saver may be unable to purchase such instruments. However, by buying shares in a managed fund along with other small investors, household savers overcome the constraints to buying assets imposed by large minimum denomination sizes. Such indirect access to these markets may allow small savers to generate higher returns on their portfolios as well.

Concept questions

1 What FI functions other than the flow of funds theory and intermediation lead to specialness?
2 Why do FI payment services make depository institutions special?
3 In what ways can managed funds assist in denomination intermediation?

SPECIALNESS AND REGULATION

LO 1.3, 1.4

In the preceding section, FIs were shown to be special because of the various services they provide to all sectors of the economy. Failure to provide these services or a breakdown in their efficient provision can be costly to both the ultimate sources (households) and users (firms) of savings. The GFC that commenced in the late 2000s is a prime example of how such a breakdown in the provision of financial services can cripple financial markets worldwide and bring the world economy into a deep recession.

The **negative externalities** affecting firms and households when something goes wrong in the FI sector of the economy provides a case for regulation. [12] That is, FIs are regulated to protect against any disruption in the provision of the services discussed above and the costs this would impose on the economy and society at large. For example, bank failures may destroy household savings and at the same time restrict a firm's access to credit. Insurance company failures may leave households totally exposed to the costs of catastrophic illnesses and the failure of superannuation funds may lead to sudden drops in income on retirement.

negative externality action by an economic agent that imposes costs on other economic agents

Further, individual FI failures may create doubts in savers' minds regarding the stability and solvency of FIs in general, and cause panics and possibly runs on sound FIs. Indeed, this possibility provided the reasoning in 2008 for the introduction of two Australian government deposit guarantee schemes—the financial claims scheme (FCS) discussed earlier and the guarantee scheme for large deposits (Guarantee Scheme). [13] (See Chapter 14 for a discussion of both schemes.) At the time of their introduction, the government was more concerned about the possibility of contagious runs rather than bank failures. Its objective was to instil confidence in the Australian banking system, both locally and globally, at a time of global uncertainty. This was a radical move and was the first time the government had provided explicit guarantees of all Australian deposits up to $1 million.

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Racial, sexual, age or other discrimination may unfairly exclude some potential financial service consumers from the marketplace and this type of market failure needs to be corrected by regulation, although such legislation may not be specific to FIs.

Although regulation may be socially beneficial, it also imposes private costs, or a regulatory burden, on individual FI owners and managers. For example, the Australian Prudential Regulation Authority (APRA) sets a limit of 25 per cent of the capital of an authorised depository institution (DI) for any credit exposures to any individual borrower even though the loan may have a positive net present value to the bank (see Prudential Standard APS221 *Large Exposures*). Consequently, regulation is an attempt to enhance the social welfare benefits and mitigate the social costs of the provision of FI services. The private cost of regulation relative to its private benefits, for the producers of financial services, is called the **net regulatory burden** . [14]

net regulatory burden the difference between the private costs of regulations and the private benefits for the producers of financial services

Six types of regulation seek to enhance the net social welfare benefits of FIs' services:

1 safety and soundness regulation
2 monetary policy regulation
3 credit allocation regulation
4 consumer and protection regulation
5 investor protection regulation
6 entry and chartering regulation.

Regulations are imposed differentially on the various types of FIs. For example, DIs are the most heavily regulated of the FIs. Finance companies, on the other hand, are subject to much fewer regulations. Regulation can also be imposed at the national or the state level and occasionally at the international level, as is the case with bank capital requirements (see Chapter 18).

Finally, some of these regulations are functional in nature, covering all FIs that carry out certain functions (such as payment services), while others are institution-specific (such as DI capital adequacy regulation). Because of the historically segmented nature of the Australian FI system, many regulations remain institution specific; for example, consumer protection legislation imposed on bank credit allocation. However, the rapidly changing nature of the financial system

and FIs has led to an increasing regulatory trend which is functionally based. This has certainly been the case in Australia where, for example, credit unions and building societies were previously regulated by the various state governments and are now subject to the same regulations by APRA as the banks, as all are DIs.

The role, structure and performance of the financial regulators have been a part of the Murray Inquiry into the financial system which reported in December 2014. The financial system inquiry's (FSI's) interim report provided initial insights into the Inquiry's thinking about the Australian regulators, and particularly their role in a specialised market subject to major change. Comments and observations relating to the structure of the regulators are reported in Learning from the Financial System Inquiry below.

LEARNING FROM THE FINANCIAL SYSTEM INQUIRY

Regulator structure and coordination

Australia's regulatory structure and coordination mechanisms performed well during the GFC, contributing to Australia's strong performance through the crisis. Following the GFC, other jurisdictions have adopted Australia's 'twin peaks' approach, with separate prudential and conduct regulators.

Submissions focused on coordination between the regulators, rather than their individual structures.

Preliminary assessment

Regulator cooperation and coordination

Observation

During the GFC and beyond, Australia's regulatory coordination mechanisms have been strong, although there may be room to enhance transparency.

The GFC demonstrated the importance of having strong coordination mechanisms to ensure domestic regulators form a consolidated view of risks in a particular sector and implement coordinated activities. Internationally, there has been a push to increase the coordination and cooperation mechanisms between domestic agencies.

A review of the Australian regulatory landscape highlights a clearly defined mechanism for cooperation and coordination actions between regulatory agencies. Underlying these structures is a culture of cooperation and collegiality.

Based on the issues raised by submissions, the Inquiry's assessment of regulator cooperation and coordination mechanisms has focused on the role, transparency and accountability of the Council of Financial Regulators (CFR). There was a strong sense from submissions that the CFR was the right body for high-level coordination, but that its role could be strengthened.

The Inquiry notes that beyond the CFR, a number of other mechanisms promote effective inter-agency cooperation and coordination on financial sector policy and enforcement issues through, for example, overlapping representation on the agencies' boards and bilateral memoranda of understanding (MOU) between CFR members.

Role and responsibilities of CFR

The CFR provides a forum for the main financial system agencies (i.e. the RBA, APRA, ASIC and Treasury) to facilitate coordination and information exchange on financial sector policy issues. As specified in its Charter, the CFR's ultimate objective is to contribute to the efficiency and effectiveness of financial regulation, by providing a high-level forum for cooperation and collaboration.

The CFR has proven to be a flexible, low-cost approach to coordination.a The current structure also provides for frank discussion and collaboration between its members. Importantly, the CFR has no regulatory functions separate from those of its members.

Submissions point to the interactions between the regulatory agencies and Treasury as being inclusive and fostering knowledge transfer, promoting the CFR's effectiveness. The CFR is also recognised internationally as a well-functioning coordination mechanism: the IMF has highlighted that the CFR plays a key role in coordinating financial regulation and stability issues.

However, submissions raise issues with the CFR's membership, transparency and accountability. Some stakeholders recommend the CFR should not be given any additional responsibilities beyond coordination, as this would dilute and blur the responsibilities of individual regulators. The following discussion addresses these points.

Membership

The Inquiry recognises that the four CFR members do not have direct responsibility to address some objectives relevant to the financial system; for example:

- Anti-competitive behaviour—regulated by the ACCC
- AML and counter-terrorism financing—regulated by AUSTRAC
- Compliance-based regulation of SMSFs—regulated by the ATO

However, broad inter-agency cooperation and coordination mechanisms enable the four CFR member agencies to seek input from other agencies as required. To the extent the CFR members see relevance in doing so, other agencies are invited to participate in Council meetings. For example, the ACCC has been invited to participate on issues relating to contestability and competitiveness.

Transparency and accountability

The CFR has a website with information on how it operates, as well as publications by its members. In addition, many of the issues discussed by the CFR to date are reported on in the RBA's semi-annual Financial Stability Review, with input from other CFR member agencies.

Policy options for consultation

There are a range of options for potentially increasing the role, transparency and external accountability mechanisms of the CFR. If options were pursued, it would be important that the CFR remained a vehicle for coordination and cooperation, and did not assume powers that appropriately sit with the relevant member agencies.

Formalise the role of the CFR within statute

Some submissions suggest legislating the CFR's powers and functions. On one hand, legislating the CFR would mandate continued inter-agency cooperation if informal collaboration breaks down in the future. On the other hand, the RBA's submission highlights that the CFR is best seen as the collaborative dimension of the regulatory agencies' activities, rather than as a separate body with its own ability to make the regulatory agencies cooperate.

A number of factors should be considered before pursuing this option. In particular:

- Legislation cannot be relied on to promote a culture of cooperation, trust and mutual support between domestic regulatory agencies. These have been highlighted as essential elements of an effective financial stability framework, especially during a crisis.
- If powers were formalised in statute, this could suggest that the regulatory functions are separate from those of its members and could engender confusion as to whether the regulatory agencies' obligations to coordinate arose from their respective charters or that of the CFR.

Increase CFR membership to include the ACCC, AUSTRAC and the ATO

Some submissions felt consideration could be given to widening the CFR's membership to include other financial sector regulators, such as the ACCC, AUSTRAC and the ATO, who are currently only invited to participate in Council meetings as and when required. Widening its membership would strengthen the Council's ability to perform its role as a coordination body on a whole-of-sector basis.

The effectiveness of the CFR relies on maintaining the clarity of its scope and frankness in discussions. For this purpose, extending its membership to other agencies with much broader mandates may divert its focus.

Increase the reporting by the CFR

To increase transparency and accountability, the CFR could produce a report each year setting out its activities for the year under review.

The Inquiry would value views on the costs, benefits and trade-offs of the following policy options or other alternatives:

- No change to current arrangements.
- Consider increasing the role, transparency and external accountability mechanisms of the CFR:
  - Formalise the role of the CFR within statute.
  - Increase the CFR membership to include the ACCC, AUSTRAC and the ATO.
  - Increase the reporting by the CFR.

Source: Financial System Inquiry, *Interim Report,* 'Regulator Structure and Coordination', 15 July 2014, found at fsi.gov.au/publications/interim-report/07-regulatory-architecture/regulator-structure-coordination/ .

[a] Reserve Bank of Australia and Australian Prudential Regulation Authority 2012, *Macroprudential Analysis and Policy in the Australian Financial Stability Framework,* Australia.

Safety and soundness regulation

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To protect depositors and borrowers against the risk of FI failure (for example, due to a lack of diversification in asset portfolios), regulators have developed layers of protective mechanisms. These mechanisms are intended to ensure the safety and soundness of the FI and thus to maintain the credibility of the FI and thereby the financial system, in the eyes of its borrowers and lenders. For example, in addition to the Financial Services Council (FSC), which protects Australian deposits up to $250 000, under the *Banking Act* the RBA may use its powers for the protection of bank depositors. As such, the RBA may assume control and carry on the business of any bank that it finds is unable to meet its obligations, until such time as the bank's deposits have been repaid. Indeed, even during the worst of the GFC, there were no deposit runs at banks or other DIs in Australia. This showed that the safety and soundness regulations in place protected all depositors in Australia from losing their money. This was not the case in other countries, such as the UK. [15]

The first layer of protection consists of requirements that encourage FIs to diversify their asset portfolios. Australian banks are required to report large credit exposures to APRA. For example, bank loans that represent more than 10 per cent of the banking group's capital must be reported quarterly to APRA and a bank must receive approval from APRA before entering into an exceptionally large exposure (that is, loans that are greater than 25 per cent of the banking group's capital).

The second layer of protection concerns the minimum level of capital or equity funds that the owners of an FI need to contribute to the funding of its operations. For example, regulators of DIs and insurance companies require a minimum ratio of capital to (risk) assets. The higher the proportion of capital contributed by owners, the greater the protection against insolvency risk to outside liability claimholders, such as depositors and insurance policyholders. This is because losses on a DI's asset portfolio (due, for example, to a lack of diversification) are legally borne by the equity holder first, and only after equity is totally wiped out by outside liability holders such as depositors. [16] Consequently, by varying the required degree of equity capital, FI regulators can directly affect the degree of risk exposure faced by non-equity claimholders in FIs. (See Chapter 18 for a discussion of the role of capital in FIs.)

The third layer of protection is the provision of guarantees such as the Australian government's FCS for small Australian depositors up to $250 000, discussed previously in this chapter, and a similar scheme for general insurance policyholders. In addition, the provision of a 'safety valve', in the form of the RBA's open market operations in the cash and Treasury securities markets, provides FIs with immediate exchange settlement funds if required.

The fourth layer of regulation is monitoring and surveillance itself. Regulators subject all FIs—whether banks, building societies and credit unions, superannuation funds, insurance companies, mutual funds and securities firms—to varying degrees of monitoring and surveillance (see Chapters 2 and 3). [17] Supervision involves on-site examination as well as regular reporting by FIs on a timely basis for off-site evaluation. Just as savers appoint FIs as delegated monitors to evaluate the behaviour and actions of ultimate borrowers, society appoints regulators to monitor the behaviour and performance of FIs. While in Australia regulatory supervision was found to be effective, given the resilience of Australia's financial system through the GFC, regulators in some countries increased supervision and surveillance of any FI whose failure could have serious systemic effects.

Finally, note that regulation is not without costs for those FIs regulated. For example, society's regulators may require FIs to have more equity capital than private owners believe is in their best interests. Similarly, producing the information requested by regulators is costly for FIs because it involves the time of managers, lawyers and accountants. Again, the socially optimal amount of information may differ from an FI's privately optimal amount, and both may differ from the amount required by regulators. [18] As noted earlier, the differences between the private benefits to an FI from being regulated—such as the FCS in Australia or deposit insurance schemes in other countries—and the private costs it faces from adhering to regulation—such as examinations—is called the *net regulatory burden*. The higher the net regulatory burden on FIs, the more inefficiently they produce any given set of financial services from a private (FI) owner's perspective.

Monetary policy regulation

Another motivation for regulation concerns the special role banks play in the transmission of monetary policy from the RBA (Australia's central bank) to the rest of the economy. The implementation of monetary policy in Australia is conducted by the RBA and the process is well defined (see Appendix 1B to this chapter). The challenge is that while the central bank directly controls only the quantity of notes and coin in the economy—called **outside money** —the bulk of the money supply consists of deposits—called **inside money** . In theory, a central bank can vary the quantity of cash or outside money and directly affect a bank's reserve position as well as the amount of loans and deposits it can create without formally regulating the bank's portfolio. In practice, regulators have chosen to impose formal controls. In most countries, regulators commonly impose a minimum level of required cash or near cash reserves to be held against deposits. Some argue that imposing such reserve requirements makes the control of the money supply and its transmission more predictable. Such reserves also add to an FI's net regulatory burden if they are more than the institution believes are necessary for its own liquidity purposes. In general, whether they are banks or insurance companies, all FIs would choose to hold some cash reserves—even non-interest-bearing—to meet the liquidity and transaction needs of their customers directly. For well-managed FIs, however, this optimal level is normally low, especially if the central bank does not pay interest on required reserves. For example, in Australia, the RBA pays interest at the rate of 0.25 per cent lower than the target cash rate on overnight balances in exchange settlement accounts (ESAs). As a result, FIs often view required reserves as similar to a tax and as a positive cost of undertaking their business of intermediation.

outside money the part of the money supply directly produced by the government or central bank, such as notes and coin

inside money the part of the money supply produced by the private banking system

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While in Australia no specific minimum reserve requirement is specified by APRA, APRA specifies the assets that constitute 'high-quality liquid assets', free from encumbrances which should be held by authorised DIs. In addition, the ESAs of all Australian banks must be in credit at all times. APRA also requires each authorised DI to have a liquidity management strategy that complies with APRA guidelines. Further, since 1 January 2015, authorised DIs must satisfy the liquidity coverage ratio and, from 1 January 2018, the net stable funding ratio (see Chapter 15). [19]

Credit allocation regulation

Credit allocation regulation supports the FIs' lending to socially important sectors such as housing and farming. These regulations may require an FI to hold a minimum amount of assets in one particular sector of the economy or, alternatively, to set maximum interest rates, prices or fees to subsidise certain sectors. No such regulations exist in Australia, but we find examples of asset restrictions in the US where the qualified thrift lender test requires savings organisations to hold 65 per cent of their assets in residential mortgage-related assets to retain a thrift charter. Examples of interest rate restrictions are the laws in many US states which set the maximum interest rates that can be charged on mortgages and/or consumer loans. Examples of similar, but now abandoned, Australian regulations are:

- the RBA's maximum bank-issued housing loan rate restriction of 13.5 per cent, which was abolished in the late 1980s
- the interest rate ceilings on trading bank and saving bank deposits, which were abolished in December 1980
- the 20/30 rule, which gave superannuation funds a tax advantage if they invested at least 20 per cent of their portfolio in Commonwealth Government securities and at least 10 per cent of their portfolio in semi-government securities.

Such price and quantity restrictions may have justification on social welfare grounds—especially if society has a preference for strong (and subsidised) housing and farming sectors. However, they can also be harmful to FIs that have to bear the private costs of meeting many of these regulations, and to the economy more generally, as the flow of funds is distorted with some positive net present value projects missing out on funding. To the extent that the net private costs of such restrictions are positive, they add to the costs and reduce the efficiency with which FIs undertake intermediation.

Consumer and investor protection regulation

While in most countries, consumer and investor protection regulations are administered by different agencies, in Australia, the Australian Securities and Investments Commission (ASIC) is the regulatory authority that, among other things, is responsible for consumer and investor protection in the financial system (since 11 March 2002). The broad consumer and investor protection provisions are set out in the *Australian Securities and Investments Commission Act 2001* and administered by ASIC, including provisions prohibiting misleading and deceptive conduct and unconscionable conduct with respect to credit facilities. [20] Under the Act, all licensed financial services businesses must operate efficiently, honestly and fairly. In addition, their staff and representatives must be properly trained and supervised. Consumer protection issues in the financial sector are dealt with consistently across the financial services industry, enabling consumers to compare the relative benefits of different financial products. Consumers can also access an independent complaints scheme at no cost. In addition to the supervision of ASIC, there are a number of other laws and regulations which protect the rights of and assist the financial services consumer/investor.

1 **Australian Consumer Law:** From 1 January 2011, Australia introduced a single, national consumer law: the Australian Consumer Law (ACL), which applies in all states and territories. Previously, consumer law had been state based. The ACL includes unfair contract terms law, law guaranteeing consumer rights when buying goods and services, product safety law, law for unsolicited consumer agreements, rules for lay-by agreements and new penalties, enforcement powers and consumer redress options. [21]
2 **MoneySmart:** The MoneySmart website, run by ASIC, offers free, simple guidance for the financial services consumer about the best investment choices. ASIC developed the website with the help of an experienced team of financial planners and consumer educators. The website covers superannuation, banking, investing, borrowing and credit, insurance, budgeting, scams, retirement income planning and unclaimed money.
3 ***National Consumer Credit Protection Act 2009*** : This legislation resulted from an agreement between the Australian government and each of the state governments to nationalise and reform consumer credit protection. The legislation provides for a comprehensive national licensing regime for all providers of consumer credit and services; responsible lending conduct; improved sanctions and enhanced powers for the regulator (ASIC); expanded consumer protection; and expanded scope under the new National Credit Code.
4 **National Credit Code:** The national regime largely replicates the previous state-based Uniform Consumer Credit Code. The National Credit Code applies in general to consumer lending by FIs and is also administered by ASIC.
5 **ePayments Code:** The ePayments Code provides a consumer protection regime for electronic payment products. ASIC administers the Code which regulates electronic payments, including ATM, EFTPOS and credit card transactions, online payments, internet and mobile banking, and BPAY. It provides key consumer protections in cases of fraud and unauthorised transactions and plays an important role in the regulation of electronic payment facilities in Australia. [22]
6 **Financial Ombudsman Service:** The Financial Ombudsman Service, established on 1 January 2010, provides accessible and independent dispute resolution for consumers and financial services providers. The service is free to consumers and provides an alternative to legal proceedings.

Australian FIs are also bound by the national *Privacy Act 1988* , and by any other applicable state laws and codes affecting personal information. In addition, most banks have their own privacy policies. With the encouragement of regulators, Australian banks have also established a Code of Banking Practice, an industry customer charter which sets out best banking practice standards and the industry's key commitments and obligations to customers on standards of practice, disclosure and principles of conduct for their banking services. The Code applies to personal and small business bank customers. [23] In addition to the Code of Banking Practice, the Australian banking industry has a number of other codes or industry standards which are set out by the industry member association, the Australian Banking Association. [24]

www.asic.gov.au
www.asic.gov.au/credit
www.fos.org.au
www.bankers.asn.au

Many analysts believe that community, consumer and investor protection laws impose a considerable net regulatory burden on FIs without providing offsetting social benefits that enhance equal access to mortgage and lending markets. However, as deregulation proceeds and with a continuation of the trend towards consolidation and universal banking, it is not unexpected to have seen such laws extended over recent years.

Entry regulation

The entry of FIs to the market is also regulated. Increasing or decreasing the cost of entry into a financial sector affects the profitability of firms already competing in that industry. Thus, the industries heavily protected against new entrants by high direct costs (such as through capital contribution) and high indirect costs of entry (for example, by restricting the number of individuals who can establish FIs) produce bigger profits for existing firms than those industries in which entry is relatively easy. In addition, regulations define the scope of permitted activities under a given charter. The broader the set of financial service activities permitted under a given charter, the more valuable that charter is likely to be. Thus, barriers to entry and regulations pertaining to the scope of permitted activities affect the *charter value* of an FI and the size of its net regulatory burden. In Australia, for example, only locally incorporated banks and foreign bank subsidiaries, branches or representative offices can gain authorities to operate in Australia under the *Banking Act 1959* (amended in 1997), and APRA requires all institutions that have been authorised to comply with its prudential requirements.

Concept questions

1 Why should more regulation be imposed on FIs than on other types of private corporations?
2 Define the concept of net regulatory burden.
3 What five major types of regulation do FIs face?

THE CHANGING DYNAMICS OF SPECIALNESS

LO 1.2, 1.3

At any moment in time, each FI supplies a set of financial services (brokerage related, asset transformation related, or both) and is subject to a given net regulatory burden. As the demands for the special features of financial services change due to changing preferences, macroeconomic conditions and technology, one or more areas of the financial services industry becomes more or less profitable. Similarly, changing regulations can increase or decrease the net regulatory burden faced in supplying financial services in any given area. These demand, cost and regulatory pressures are reflected in changing market shares in different financial service areas as some contract and others expand. Clearly, an FI seeking to survive and prosper must be flexible enough to move to growing financial service areas and away from those that are contracting. If regulatory activity restrictions inhibit or reduce the flexibility with which FIs can alter their product mix, this will reduce their competitive ability and the efficiency with which financial services are delivered. That is, activity barriers within the financial services industry may reduce the ability to diversify and such barriers potentially add to the net regulatory burden faced by FIs.

Trends in Australia

In Table 1.2 , we see the changing shares of total assets of Australian FIs from 1953 to 2013. A number of important trends are clearly evident. Most apparent is the decline in the total share of banks from the 1950s (66.4 per cent in 1953) to the low point in 1980 (42.1 per cent) and through to 2000 (44.8 per cent), after which their share began to rise, to a high of 59.5 per cent in 2012. While building societies gained significant market share in 1980 (7.6 per cent), they have declined in significance by 2013 (0.4 per cent), caused principally by rationalisation of the industry as well as the common regulation of all DIs under APRA. The trend is better viewed from the total authorised depository institution (ADI) share which increased from 51.3 per cent in 1990 to 60.9 per cent by 2012.

The share of life offices and superannuation funds has risen from 21.0 to 26.6 per cent over the period covered by the table. The aggregate numbers disguise the decline in life insurance, and we see that while in 1990, the shares of both life insurance and superannuation were fairly equal (11.8 and 11.0 per cent, respectively), by 2013, the share of superannuation had grown to 22.6 per cent, whereas that of the life insurers had fallen to 4.1 per cent. Compulsory superannuation has been a major contributor to the growth of the share of superannuation funds, and given both this plus the proposed increase in the rate of the compulsory employer contribution from 9 per cent to 12 per cent of salary from now until 2021–22, the share of FI assets by superannuation funds should continue to increase.

TABLE 1.2 Percentage shares of assets of Australian FIs, 1953 to 2013 (as at end of June) [a]

Institutions	1953 %	1960 %	1970 %	1980 %	1990 %	2000 %	2005 %	2010 %	2011 %	2012 %	2013 %
Authorised depository institutions	–	–	–	–	51.3	46.9	51.1	59.7	59.7	60.9	59.5
Banks [b]	66.4	54.5	46.2	42.1	46.8	44.8	49.4	58.2	57.9	59.5	58.2
Building societies	3.1	3.7	3.1	7.6	3.3	0.8	0.6	0.5	0.6	0.4	0.4
Credit unions	na	na	na	na	1.2	1.3	1.2	1.0	1.2	0.9	0.8
Other financial institutions	–	–	–	–	48.7	53.1	48.9	40.3	40.3	40.4	41.0
Finance companies	2.2	8.8	10.1	12.8	8.0	4.3	3.1	2.3	2.2	2.1	2.1
Money market corporations	0.0	0.2	2.3	4.7	7.7	3.9	2.9	1.4	1.4	1.0	0.8
Life insurance	na	na	na	na	11.8	10.6	6.7	4.2	4.3	4.1	4.1
Superannuation funds	na	na	na	na	11.0	17.3	17.3	19.4	20.6	20.6	22.6
Life insurance and superannuation funds [c]	21.0	23.3	25.1	18.7	22.8	27.9	24.0	23.6	24.8	24.7	26.6
Managed funds other than superannuation	0.3	1.2	0.7	0.9	6.2	9.3	8.8	6.8	6.1	5.5	5.5
General insurance	na	na	na	na	3.1	3.8	3.3	2.8	2.9	3.3	3.3
Securitisation vehicles	0.0	0.0	0.0	0.0	0.8	4.0	6.7	3.3	2.9	2.6	2.4

[a] Years from 1953 to 1980 do not add to 100% as not all financial institutions' data is available.
[b] Excludes the Reserve Bank but includes development banks.
[c] Data for life insurance and superannuation funds was not shown separately prior to 1990.
Source: *Reserve Bank of Australia Bulletin,* Statistical Table B1, www.rba.gov.au/statistics/tables/#assets_liabilities .

There was a fairly dramatic upward trend in the share of managed funds from 1953 (0.3 per cent) to 2005 (8.8 per cent), but this has since declined to 5.5 per cent in 2013. Prior to 1990, there were no securitisation vehicles and their growth to 6.7 per cent of the assets of Australian FIs in 2005 represents their significant role, principally in the provision of housing finance. The sub-prime crisis in the US caused significant brand damage to securitised assets, leading to a fall in demand for securitised assets globally. Indeed, as a part of the economic stimulus package in response to the GFC, the Australian government in recognition of (1) their importance in the provision of housing and other finance in Australia and (2) the strong performance of the collateral underlying Australian mortgage-backed securities, provided support for securitisation vehicles to ensure their liquidity throughout the crisis. [25]

While there were some marked changes over the past six decades, we note that the structure of the Australian financial system has been relatively stable compared with many other developed countries, and this is especially the case over the eight years to 2013, despite the pressures from the GFC. While we note

some shift in saver preference from deposits to investments that closely mimic diversified investments (such as those provided by managed funds) up to the mid-2000s, we see this preference reversed with the GFC. In addition, Australians are saving more. The Australian savings ratio (net of depreciation) fell for two decades to a low point of close to zero per cent in the mid-2000s. However, since 2007, in part in reaction to the GFC, it has grown as high as 12 per cent of household disposable income, and in 2013 was holding near 11 per cent. [26]

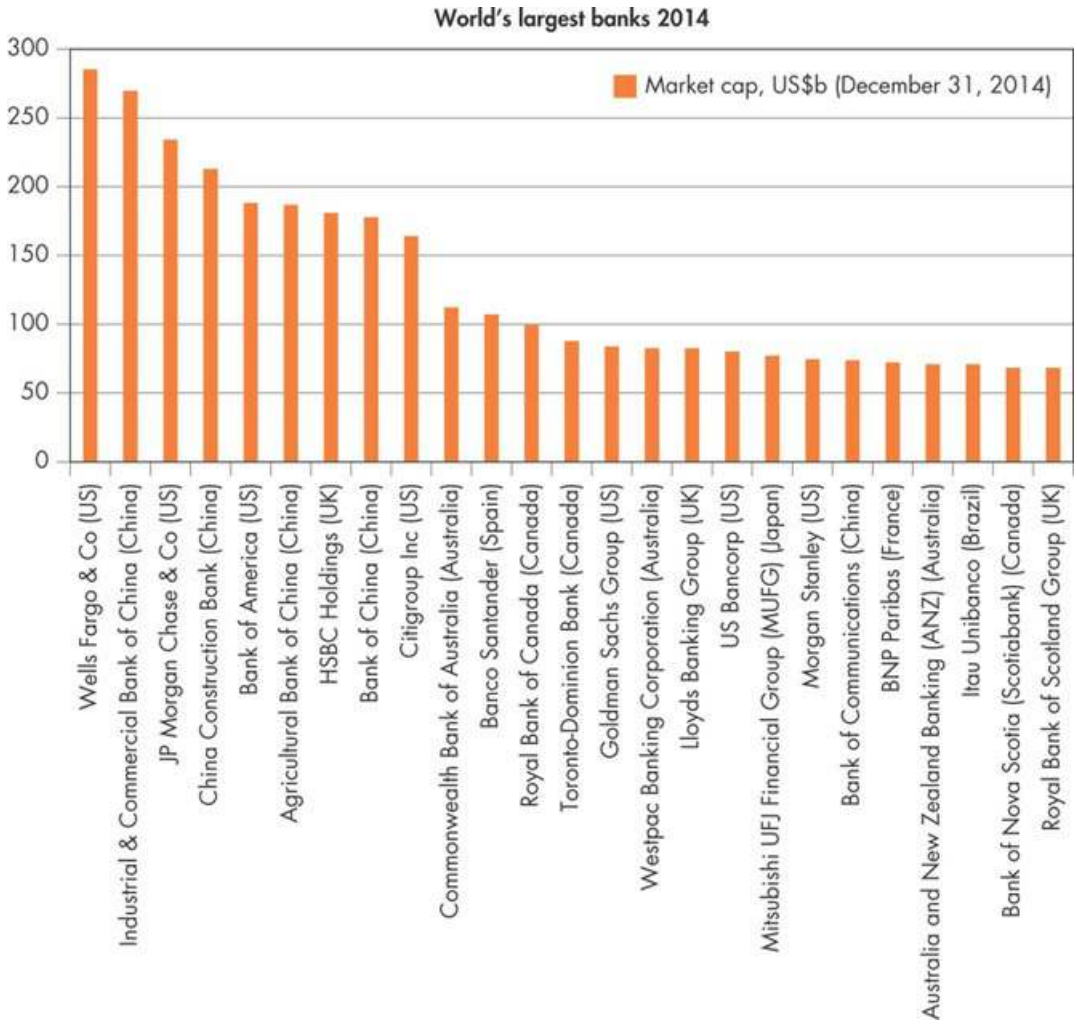
Global trends

Australian banks must now compete not only with other domestic FIs but also with foreign FIs that provide services (such as payment services and denomination intermediation) comparable to those of Australian FIs. For example, Figure 1.3 lists the 25 largest banks in the world measured by market capitalisation at 31 December 2014. Note that three of Australia's four major banks (bolded) are ranked at 10, 15 and 22, demonstrating the strength of Australian banks globally. Foreign banks dominate the top 25 list and the presence of many foreign banks in Australia provides both domestic as well as global competition for Australian FIs. As at December 2013, there were 70 banks operating in Australia: 21 Australian and 49 foreign bank subsidiaries or branches of foreign banks. The assets held by the foreign bank subsidiaries and branches as at December 2013 were $444 billion, representing 11.88 per cent of total bank assets held in Australia. Note that of the top 10 banks in Figure 1.3 , Chinese banks hold four spots (Industrial and Commercial Bank of China, China Construction Bank, Agricultural Bank of China and Bank of China), with US banks (Wells Fargo Bank, JPMorgan Chase, Bank of America and Citigroup) holding four positions, and the UK (HSBC Holdings) and Australia (Commonwealth Bank of Australia), each holding one position. Of the nine non-Australian banks in the top 10, all except Wells Fargo Bank have operations (either foreign subsidiary banks or branches of their parent bank) in Australia.

The rise of financial services holding companies

To the extent that the financial services market is efficient and reflects the forces of demand and supply, these forces indicate trends in savers' preferences, as savers switch from one type of investment to another. Changing trends may also indicate shifts in the net regulatory burden on FIs. Traditional FIs are now unable to produce their services as cost efficiently as they could previously and so most banks have grown into large conglomerates of financial services. For example, typical of large international banks, Australia's four major banks have subsidiary banks, insurance companies, fund management companies and finance companies. And while there are firewalls between the various businesses, the banks are now full-service financial institutions. Thus, while Table 1.2 lists assets of FIs by functional area, the financial services holding company has become the dominant form of financial institution in terms of total assets. The large banks are global enterprises with operations in many countries other than Australia, with integrated operations. This, along with the global nature of financial markets, means that major crises in other countries impact the Australian financial services industry and through it, the Australian financial system. For example, the sub-prime crisis in the US in the late 2000s, which led to the GFC, changed and reshaped the financial services industry globally. Of significant note is that the GFC highlighted a disturbing trend: that is, a shift away from risk identification, measurement and management in some sectors of the global financial markets. We discuss this below.

FIGURE 1.3 World's largest banks by market capitalisation (US$b) at 31 December 2014



Source: www.relbanks.com/worlds-top-banks/market-cap

Concept questions

1 Is the share of depository institution assets growing as a proportion of total FI assets in Australia?
2 What are the fastest growing FIs in Australia?
3 How did the GFC affect the market share of FIs in Australia?

THE SHIFT AWAY FROM RISK MEASUREMENT AND MANAGEMENT AND THE GLOBAL FINANCIAL CRISIS

LO 1.5, 1.6

During the 1990s and into the 2000s, there was a shift in the global banking model from 'originate and hold' to 'originate and distribute'. In the traditional banking model, DIs take short-term deposits and other sources of funds and use them to fund longer term loans to businesses and consumers. DIs typically hold these loans to maturity and thus have an incentive to screen and monitor borrower activities even after a loan is made. However, the traditional model exposes the institution to potential liquidity, interest-rate and credit risks. In an attempt to avoid these risk exposures and to generate improved return-risk trade-offs, DIs globally have tended to shift their business towards more of an underwriting model in which they originate or warehouse loans and then quickly sell them. This trend was originally most prevalent in the US but was also common in other countries. Australian regulations prevented banks from engaging in this trend until the late 1990s and early 2000s, and thus the impact of their move to the new business model was far lower than for banks in other developed countries. However, like banks in other countries, Australian banks organised themselves to facilitate the new activities. In addition, many credit unions and building societies took full advantage of the new model and increased their securitised asset distribution to meet increasing consumer demand for finance.

The 'originate and distribute' model shifts risk from the balance sheets of FIs to other parts of the financial system. Since the FIs under the new model were acting as underwriters, and thus were not exposed to the credit, liquidity and interest rate risks of traditional banking, they had less incentive to screen and monitor the activities of borrowers to whom they originated loans. During the lead-up to the GFC in 2007, FIs globally failed to act as specialists in risk measurement and management. Specific regulations covering securitised assets and prudential supervision of DIs reduced this trend in Australia. However, the impact of the failure of FIs to act as specialists in risk measurement and management is potentially critical to any country's financial system. Example 1.1 discusses the case of the US sub-prime mortgage crisis.

Example 1.1

The sub-prime mortgage crisis in the United States

In the US, in addition to FIs moving away from risk measurement, a boom ('bubble') in the housing market began building in 2001, particularly after the terrorist attacks of 11 September. The immediate response by US regulators to the attacks was to create stability in the financial markets by providing liquidity to FIs. For example, the US Federal Reserve lowered the short-term money market rate that banks and other FIs pay in the federal funds market and even made lender of last resort funds available to non-bank FIs such as investment banks. Perhaps not surprisingly, low interest rates and the increased liquidity provided by the Federal Reserve resulted in a rapid expansion in consumer, mortgage and debt financing. Demand for residential mortgages and credit card debt rose dramatically. As the demand for mortgage debt grew, especially among those who had previously been excluded from participating in the market because of their poor credit ratings, FIs began lowering their credit quality cut-off points. Moreover, to boost their earnings in the market popularly known as the '*sub-prime market* ', it was common for banks and other mortgage supplying institutions to offer relatively low 'teaser' rates on adjustable rate mortgages (ARMs), that is, exceptionally low initial interest rates, which substantially increased after the initial rate period expired two or three years later, if market rates rose.

Under the traditional originate and hold banking model, US banks might have been reluctant to aggressively pursue low credit quality borrowers for fear that the loans would default. However, under the originate and distribute model of banking, asset securitisation and loan syndication allowed banks to retain little or no part of the loans, and hence the default risk on loans they originated. Thus, as long as the borrower did not default within the first months after a loan issuance, and the loans were sold or securitised without recourse back to the bank, the issuing bank could ignore longer term credit risk concerns. The result was the deterioration in credit quality at the same time as there was a dramatic increase in consumer and corporate leverage.

Eventually, in 2006, housing prices in the US started to fall. At the same time, the Federal Reserve started to raise interest rates in the money market as it began to fear a rise in inflation. Since many sub-prime mortgages originated in the 2001–2005 period had floating rates, the cost of meeting mortgage commitments rose to unsustainable levels for many low income households. The confluence of falling house prices, rising interest rates and rising mortgage costs led to a wave of mortgage defaults and foreclosures in the sub-prime market, that only reinforced the downward trend in house prices. As this happened, the poor quality of the collateral and credit quality underlying sub-prime mortgage pools became apparent, with default rates far exceeding those apparently anticipated by the ratings agencies in setting their initial sub-prime mortgage securitisations ratings.

These effects built throughout 2006. By February 2007, the proportion of sub-prime mortgage-backed securities delinquent by 90 days or more was 10.09 per cent, substantially higher than the 5.37 per cent rate in May 2005. The number of sub-prime mortgages that were more than 60 days behind on their payments was 17.1 per cent in June 2007 and more than 20 per cent in August 2007. As sub-prime borrowers had difficulty repaying their existing mortgages, they found it impossible to refinance prior to the higher step-up interest rate kicking in after the initial 'teaser' period. By September 2007, the National Association of Realtors was projecting a decline of 24 per cent in new home sales, and 8.6 per cent in existing home sales. The financial crisis had begun. Appendix 1A to this chapter (online at www.mhhe.com/au/lange4e) provides a detailed discussion of the causes of, major events during, and regulatory and industry changes in the US resulting from the GFC.

The economy relies on FIs to act as specialists in risk measurement and management. Example 1.1 is clear evidence of this, as in the aftermath of the failure of US FIs to perform these critical functions, the financial crisis in the US became a crisis of confidence in global financial systems generally. The result was a worldwide breakdown in credit markets, as well as increased equity market volatility and a critical crisis of confidence that disrupted global financial markets from 2007 to 2013. At the time of writing, confidence in the global financial markets remains cautious, with continuing concerns over a sovereign debt crisis in Europe and potential currency concerns in some developing countries.

Concept questions

1 Is the share of bank, building society and credit union assets growing as a proportion of total FI assets in Australia?
2 What are the fastest growing FIs in Australia?
3 What were the causes of the global financial crisis?

SUMMARY

This chapter describes the various factors and forces impacting on FIs and the specialness of the services they provide. These forces suggest that FIs, which have historically relied on making profits by performing traditional special functions, such as asset transformation and the provision of liquidity services, will continue to expand their products by selling financial services that interface with direct security market transactions, such as asset management, insurance and underwriting services. This is not to say that specialised or niche FIs cannot survive, but rather that only the most efficient FIs will prosper as the competitive value of a specialised FI charter declines.

The major theme of this book is the measurement and management of FI risks. In particular, although we might categorise or group FIs and label them 'life insurance companies', 'banks', 'finance companies' and so on, in fact the risks that they face are more common than different. Specifically, all the FIs described in this chapter (1) hold some assets that are potentially subject to default or credit risk and (2) tend to mismatch the maturities of their balance sheets to a greater or lesser extent and are thus exposed to interest rate risk. Moreover, all are exposed to some type of underwriting risk, whether through the sale of securities or by issuing various types of credit guarantees on or off the balance sheet. Finally, all are exposed to operating cost risks because the production of financial services requires the use of real resources and back-office support systems.

We provide an overview of depository institutions (banks, building societies and credit unions), industry trends and their regulation in Chapter 2 . In Chapter 3 , our focus turns to other FIs including life insurers, superannuation funds, managed funds and finance companies. In Chapter 4 we preview the risk measurement and management sections with an overview of the risks faced by a modern FI. Finally, in Chapters 5 to 18 of this book we investigate the ways in which managers of FIs measure and manage this inventory of risks to produce the best return–risk trade-off for shareholders in an increasingly competitive and contestable market environment.

KEY TERMS

agency costs
asset transformer
delegated monitor
diversify
economies of scale
financial intermediary
inside money
liquidity
loan covenants
negative externalities
net regulatory burden
outside money
price risk
primary securities
secondary securities

QUESTIONS AND PROBLEMS

1 What are five risks common to financial institutions? LO 1.1
2 Explain how economic transactions between household savers of funds and corporate users of funds would occur in a world without FIs. LO 1.1 , 1.2
3 Identify and explain three economic disincentives that probably would dampen the flow of funds between household savers of funds and corporate users of funds in an economic world without FIs. LO 1.2
4 Identify and explain the two functions in which FIs may specialise that would enable the smooth flow of funds from household savers to corporate users. LO 1.1 , 1.2
5 In what sense are the financial claims of FIs considered *secondary securities,* while the financial claims of commercial corporations are considered *primary securities?* How does the transformation process, or intermediation, reduce the risk, or economic disincentives, to savers? LO 1.2
6 Explain how FIs act as delegated monitors. What secondary benefits often accrue to the entire financial system because of this monitoring process? LO 1.2
7 What are five general areas of FI specialness that are caused by providing various services to sectors of the economy? LO 1.2
8 What are agency costs? How do FIs solve the information and related *agency costs* when household savers invest directly in securities issued by corporations? What is the 'free-rider' problem? LO 1.2
9 How do large FIs solve the problem of high information collection costs for lenders, borrowers and financial markets in general? LO 1.2
10 How do FIs alleviate the problem of liquidity risk faced by investors who wish to invest in the securities of corporations? LO 1.2
11 How do FIs help individual savers diversify their portfolio risks? Which type of financial institution is best able to achieve this goal? LO 1.2
12 How can FIs invest in high-risk assets with funding provided by low-risk liabilities from savers? LO 1.2
13 How can individual savers use FIs to reduce the transaction costs of investing in financial assets? LO 1.2
14 What is maturity intermediation? What are some of the ways in which the risks of maturity intermediation are managed by FIs? LO 1.2
15 What are five areas of institution-specific FI specialness and which types of institutions are most likely to be the service providers? LO 1.2
16 How do depository institutions such as banks assist in the implementation and transmission of monetary policy? LO 1.3
17 What is meant by 'credit allocation regulation'? What social benefit is this type of regulation intended to provide? LO 1.3
18 Which intermediaries best fulfil the intergenerational wealth transfer function? What is this wealth transfer process? LO 1.2
19 What are two of the most important payment services provided by FIs? To what extent do these services efficiently provide benefits to the economy? LO 1.2 , 1.3
20 What is denomination intermediation? How do FIs assist in this process? LO 1.2
21 What is negative externality? In what ways does the existence of negative externalities justify the extra regulatory attention received by FIs? LO 1.3 , 1.4
22 If financial markets operated perfectly and without cost, would there be a need for FIs? LO 1.1 , 1.2 , 1.3

23 Why are FIs among the most regulated sectors in the world? When is the net regulatory burden positive? LO 1.3 , 1.4

24 What forms of protection and regulation do the regulators of FIs impose to ensure their safety and soundness? LO 1.3 , 1.4

25 In the transmission of monetary policy, what is the difference between *inside money* and *outside money?* How does the Reserve Bank of Australia try to control the amount of inside money? How can this regulatory position create a cost for depository institutions? LO 1.3 , 1.4

26 What are some examples of credit allocation regulation? How can this attempt to produce social benefits create costs for a private institution? LO 1.3 , 1.4

27 How do regulations regarding barriers to entry and the scope of permitted activities affect the *charter value* of FIs? LO 1.3 , 1.4

28 What reasons have been given for the growth of superannuation funds and investment companies at the expense of 'traditional' banks and life insurance companies? LO 1.3

29 What significant events in the US in particular, but which spread globally, resulted from the trend for banks to shift from the traditional banking model of 'originate and hold' to a model of 'originate and distribute'? LO 1.4 , 1.5

30 How did the boom in the housing market in the early and mid-2000s exacerbate FIs' transition away from their role as specialists in risk measurement and management? LO 1.4 , 1.5

WEB QUESTIONS

31 Go to the APRA website, and list the features and bank 'specialness' described in this chapter, and identify the related regulation and legislation for each of the 'specialness' features. LO 1.3 , 1.4

32 Go to the website of the Reserve Bank of Australia and find details of the way the RBA implements monetary policy. See www.rba.gov.au/monetary-policy/about.html , for example, and answer the following questions:

1 What are the tools used by the RBA to implement monetary policy?

2 How does a decrease in the target cash rate affect credit availability and money supply?

3 Which of the monetary tools available to the RBA is used most often? Why? LO 1.3 , 1.4

33 Watch the *Inside Business* interview with ANZ Bank CEO Mike Smith at www.abc.net.au/insidebusiness/content/2013/s3882862.htm . Smith's response to a question about the bank's returns from its Asian business provides some insight into the reasons for its global strategy. Why does the ANZ have an Asian presence? LO 1.2 , 1.5

PERTINENT WEBSITES

Australian Bankers Association www.bankers.asn.au
Australian Securities and Investments Commission www.asic.gov.au
Australian Prudential Regulation Authority www.apra.gov.au
Reserve Bank of Australia www.rba.gov.au
Bell Potter Securities www.bellpotter.com.au
Morgan Stanley Australia www.morganstanley.com/about/offices/Australia.html
Goldman Sachs (Australia) www.gs.com.au
CommSec www.comsec.com.au
ETrade www.etrade.com.au
Macquarie Edge www.macquarie.com/edge
Federal Farm Credit Banks www.farmcredit-ffcb.com
Mastercard www.mastercard.com.au
Visa www.visa.com.au

ENDNOTES

1 S.Wallis, B.Beerworth, J.Carmichael, I.Harper and L.Nicholls, *Financial System Inquiry Final Report ,* Chapter 14 , Commonwealth of Australia, March 1997, http://fsi.treasury.gov.au/content/downloads/FinalReport/chapt14.doc .

2 See the Australian Treasury website for the Inquiry announcement (http://jbh.ministers.treasury.gov.au/media-release/023-2013) and the Terms of Reference, (www.treasury.gov.au/ConsultationsandReviews/Consultations/2013/financial-system-inquiry-tor).

3 See Reserve Bank of Australia, *A Brief History ,* www.rba.gov.au/about-rba/history/index.html accessed 3 February 2012.

4 The central banking powers of the Commonwealth Bank of Australia relating to the administration of monetary and banking policy and foreign exchange control were formalised in 1945 under the new *Commonwealth Bank Act* and the *Banking Act .*

5 See more detail in S.Wallis, B.Beerworth, J.Carmichael, I.Harper and L.Nicholls, *Financial System Inquiry Final Report ,* Chapter 14 , Commonwealth of Australia, March 1997, http://fsi.treasury.gov.au/content/downloads/FinalReport/chapt14.doc .

6 See S.Wallis, B.Beerworth, J.Carmichael, I.Harper and L.Nicholls, *Financial System Inquiry Final Report ,* Commonwealth of Australia, March 1997, http://fsi.treasury.gov.au/content/downloads/FinalReport/ .

7 See, for example, Dr Ken Henry, Secretary, Australian Treasury, *The Australian Banking System—Challenges in the Post Global Financial Crisis Environment ,* address to the Australasian Finance and Banking Conference, 15 December 2010.

8 The definitions of the monetary aggregates are as follows:
- M1 is unchanged and defined as currency plus bank current deposits of the private non-bank sector.
- M3 is defined as M1 plus all other Australian depository institution (DI) deposits of the private non-DI sector (including certificates of deposit).
- Broad money is defined as M3 plus non-deposit borrowings from the private sector by all financial intermediaries (AFIs), less the holdings of currency and bank deposits by RFCs and cash management trusts.

Refer to the RBA website: www.rba.gov.au/statistics/frequency/fin-agg/2006/fin-agg-0406-expl-note.html .

9 To gain an understanding of the Reserve Bank of Australia's role in open market operations, which also assist in supporting the liquidity of the financial market, see B.Fitz-Gibbon and M.Gizycki, Reserve Bank of Australia Research Discussion Paper 2001–07, 'A history of last resort lending and other support for troubled financial institutions in Australia', October 2001, www.rba.gov.au/rdp/RDP2001-07.pdf .

10 See, in particular, Kym Anderson, 'Distorted agricultural incentives and economic development: Asia's experience', 2009, siteresources.worldbank.org/INTTRADERESEARCH/Resources/544824-1163022714097/3139581-1255722069727/Asia_ag_distortions_0309.pdf , and Hugh Jiang, 'Review of Vietnamese agricultural policy', *Transnational Corporations Review,* Vol. 1, No. 3, p. 17, 2009.

11 Detail on the structure and operations of the Australian payments system can be found in *Payment Systems in Australia* (Red Book, www.rba.gov.au/PaymentsSystem/Publications/BISCommitteeOnPaymentAndSettlementSystems/australia.pdf), and the activities of the Reserve Bank's Payments System Board are reported in its annual reports.

12 A good example of a negative externality is the costs faced by small businesses in a one-bank town if the local bank fails. These businesses could find it difficult to get financing elsewhere and their customers could be similarly disadvantaged. As a result, the failure of the bank may have a negative or contagious effect on the economic prospects of the whole community, resulting in lower sales, production and employment.

13 Note that the Guarantee Scheme for large deposits was temporary only and was closed in March 2010.

14 Other regulated firms, such as gas and electric utilities, also face a complex set of regulations that impose a net regulatory burden on their operations.