1

Introduction to financial markets and institutions

After studying this chapter, you should be able to:

- **1.1** Outline the role of financial markets.
- **1.2** Describe the basic allocation of funds process.
- **1.3** Examine indirect and direct financing.
- **1.4** Describe generally the objectives of financial regulation in Australia.
- **1.5** Discuss the design of Australia's regulatory environment.

Financial institutions and markets play a significant role in the Australian economy. The primary purpose of financial markets and institutions is to balance the supply of and demand for funds in the economy. There are many facets to a well-functioning financial system. First, a healthy financial system ensures that financial institutions and markets perform their roles in allocating funds effectively and efficiently. Second, government regulation is aimed at protecting investors and maintaining the stability of the financial system. Underpinning these requirements is the need for reliable financial statistics—integral to the investment process and the measurement of monetary claims on the economy by households, businesses, corporations and governments. Chapter 1 provides an outline of the role of financial markets and institutions, and a description of the flow of funds. We examine the forms of financing and answer why people save (see 'Finance in Focus: Low household savings'). Finally, we describe some of the objectives and recent outcomes of the regulatory environment that govern financial markets and institutions in Australia (see 'Finance in Focus: Macroprudential controls and interest-only loans').

Finance in Focus

Chronology of major financial market events

This is the second edition of the popular university finance textbook, *Fundamental of Financial Markets and Institutions in Australia*. Since the first edition, Australian financial markets and institutions have experienced a turbulent period of growth, volatility and scandal. In chronological order, some of the major events since 2007 are:

- 2007—Australian Commonwealth Government net debt instruments on issue was $53.25 billion.
  - —The **Global Financial Crisis (GFC)** begins to evolve; marked by extreme stresses, volatility and uncertainty in the financial markets between the period from mid-2007 to early 2009.
- 2008—The **Reserve Bank of Australia (RBA)** cuts Australia's cash rate by 0.25% in early September. This would be the start of a series of cuts to the cash rate over the remaining months of 2008; reducing the level of the cash rate from 7.25% to 4.25%.
  - —The collapse of Wall Street's fourth biggest investment institution, Lehman Brothers, in September provided the largest shock to world financial markets with almost A$1 trillion in assets at risk. The collapse of the 100-year-old institution heralded the peak of the GFC, and was the catalyst for Australia's response to the events unfolding.
  - —In the wake of the Lehman Brothers collapse, the Australian Commonwealth Government, under the then Prime Minister Kevin Rudd, legislates a fiscal stimulation package of $52 billion and guarantees Australian bank deposits with **Authorised deposit-taking institutions (ADIs)** and some debt instruments.
  - —The United States, Great Britain, Ireland and Iceland implement similar fiscal packages and guarantees as world financial markets and economies implode.
  - —The Dow Jones Industrial Average (DJIA) falls heavily in October, and the major central banks, including the United States Federal Reserve, the Bank of England and the European Central Bank, cut their key interbank interest rates by 0.5%.
  - —Shares on the **Australian Securities Exchange (ASX)** fall sharply, along with other stock exchanges across the world; both the All Ordinaries (All Ords) Index and the Standard & Poor's/ASX 200 (S&P/ASX 200) Index fell significantly.
  - —The G20 meets in November.
- 2009—The RBA cuts the cash rate by a further 1% in February, and again by 0.25% in April.
  - —The G20 agrees in April to a global financial and economic stimulus package of $5 trillion.
  - —The RBA, believing the worst is over, begins increasing the cash rate by 0.25% in October. This was the start of a series of increases over the next few years.
- 2010—The European Crisis begins to unfold. The European Central Bank (ECB) bails out Greece, whose debt is downgraded to junk status, and austerity measures are intensified to cut spending. Ireland is similarly bailed out.
  - —The RBA increases the cash rate to 4.75% in November, which stays at this level until the beginning of November 2011.
- 2011—The ECB bails out Portugal. Greece is bailed out again, and implements further austerity measures in the following years.

Global Financial Crisis (GFC) An economic and financial event (2007–2009) that originated with the bursting of the US housing bubble. The financial crisis began in July 2007 when investors lost confidence in many financial companies and the securities they issued. This contagion spread around the world, having a crippling effect on the world financial system and economy (including interbank markets).

Reserve Bank of Australia (RBA) The central bank of Australia.

authorised deposit-taking institutions (ADIs) An organisation authorised by the Australian Prudential Regulation Authority (APRA) to accept deposits. These organisations include approved banks, credit unions and building societies.

Australian Securities Exchange (ASX) The primary Australian marketplace for trading equities, government bonds and other fixed-interest securities.

—The RBA cuts the cash rate to 4.5% in November. This begins a series of cuts to the cash rate, over the next five years, finishing at 1.5% in August 2016. This was in light of slow and persistent wage growth, subdued inflation and below-trend gross domestic product (GDP).

- 2012—European unemployment rates go sky-high. Spain's youth unemployment exceeds 50%, and Spanish interest rates are the highest on record.
- 2013—The Murray Inquiry is established. The inquiry examined how the Australian financial system could be positioned to best meet Australia's evolving needs and support Australia's economic growth.
- 2016—Australian bank rate rigging scandal. **The Australian Securities and Investment Commission (ASIC)** accuses the major Australian banks of manipulating the key interbank rates otherwise known as the bank bill swap (BBSW) rates. The BBSW rates scandal in Australia followed similar scandals such as the one in Great Britain with the London interbank offered rate (LIBOR).
- 2017—The Australian Commonwealth Government net debt instruments on issue exceed $500 billion.
  —The Hayne Royal Commission is established. The very public commission probed into misconduct within the banking, superannuation and financial services industry.
- 2018—Australia entertains its sixth prime minister since the GFC.
  —The **Australian Prudential Regulation Authority (APRA)** removes the interest-only lending cap in December; removing both the 10% annual growth cap on investor lending, introduced in December 2014, and the 30% cap to new interest-only loans, introduced in March 2017.

Australian Securities and Investment Commission (ASIC) Australia's corporate, markets and financial services regulator.

Australian Prudential Regulation Authority (APRA) An independent statutory authority that supervises institutions across banking, insurance and superannuation.

1.1 The role of financial markets

LEARNING OBJECTIVE 1
Outline the role of financial markets.

In this section, we outline the role of financial markets. **Financial markets** facilitate the transfer of funds from lenders to borrowers. Economic agents, such as individuals, businesses, corporations and governments, accumulate funds where their income exceeds their consumption and investment expenditure, while others borrow funds where their consumption and expenditure exceed their income. What are some of these instruments that allow borrowers and lenders to transact? Corporations can borrow by issuing a **share** or part-ownership of a company, of which ordinary shares (equities) are the most common. Governments or corporations can borrow by issuing a **debt instrument**, which is a promise to make certain payments to the lender on specified dates in the future. A debt instrument does not give the holder any ownership rights in the issuer. The facilitation of funds is the key role of financial markets, and in the next section we look at the facilitation of funds in more detail.

financial markets Markets that facilitate a transfer of funds from lenders to borrowers.

share Part-ownership of a company of which common shares (equity) are the most common.

debt instrument A promise to make certain payments to the lender on specified dates in the future.

Concept Check

1 What is the role of financial markets?

2 What are two of the main methods for a corporation to raise funds?

LEARNING OBJECTIVE 2
Describe the basic allocation of funds process.

1.2 The basics of funds flows

We begin by providing a simple, but more detailed, explanation of how the facilitation of funds (flow of funds) works between borrowers (deficit units) and lenders (surplus units).

1.2.1 Deficit and surplus units

To illustrate the decisions which produce deficit and surplus units, it is useful to consider the case of a household. First, a household's income and expenditure can be set out as follows:

$$\text{Saving} = \text{Income} - \text{Consumption expenditure}$$

$$\text{Saving} - \text{Investment expenditure} = \text{Surplus to financial markets}$$

saving Income minus expenditure.

net worth (wealth) Assets minus liabilities.

real investment expenditure Newly built durable assets, such as a home, a factory or machinery produced in the current period.

financial investment (asset) A monetary claim on the real economy, and includes, but is not limited to, a share, a debt instrument or a bank deposit.

Saving is income minus expenditure. An alternative measure is saving is equal to the change in the household's net worth (more commonly called 'wealth'), which can, of course, be negative if the household's consumption expenditure exceeds its income. **Net worth (wealth)** is assets minus liabilities.

At this point, it is necessary to differentiate between two meanings of the word 'investment'. In common everyday usage, it describes the purchase of any asset, including such things as a home, a share, a debt instrument or a bank deposit. However, when economists speak of 'investment', they include only the purchase of new **real investment expenditure** or newly built durable assets, such as a home, a factory or machinery produced in the current period. Real economic investment therefore refers to the acquisition of real durable physical assets that increases the productive capacity of the economy in the future. On the other hand, a **financial investment** is a monetary claim (asset) on the real economy, and includes, but is not limited to, a share, a debt instrument or a bank deposit.

A household's decision regarding its expenditure, saving and net worth can also be considered in terms of the sources and uses of funds. There are three sources of funds. The first source of funds for a household is saving. The second source of funds for a household is borrowing from financial institutions. For example, a household may borrow by taking out a housing mortgage loan or a consumer loan, or use credit-card debt. The third source of funds is the sale of existing assets. The household can sell either real economic assets (e.g. a house), financial assets (e.g. shares or debt instruments) or run down bank deposits (withdrawal of money).

The three sources of funds obtained can be used in the following ways. Funds can be used to purchase real assets (e.g. a house). Purchases can be divided into two categories: real economic investment (house construction) or the purchase of existing assets (a house). The household can also lend its funds to other economic units by acquiring financial assets (a share, a debt instrument or a bank deposit). Alternatively, a household may reduce its outstanding liabilities (e.g. by repaying some of its housing loan or credit-card debt).

Of course, a household might both borrow and lend during a given period. For example, it could reduce its credit card debt (which attracts a higher interest rate) and increase its mortgage debt (which attracts a lower interest rate) in an equal amount. This form of financing does not contribute to net worth.

If the household's saving is greater than its investment expenditure, it must use the difference to increase its asset holdings or to reduce its outstanding liabilities.

The household is then said to be a **surplus economic unit** or a net lender of funds to financial markets.

surplus economic unit A net lender of funds.

If the household consumes more than its income, it is **dissaving** or reducing its net worth (wealth). As noted previously, reducing net worth can take the form of the sale of assets or the incurring of liabilities. If the household reduces its holdings of assets or accepts an increased amount of liabilities, it is a **deficit economic unit** or a net borrower of funds from the financial markets. Households are usually net lenders (surplus units) on average, but, in a given period, some households will be net borrowers. For example, they become net borrowers when they purchase a house, but are subsequently net lenders as they pay off the mortgage.

dissaving Where consumption exceeds income.

deficit economic unit A net borrower of funds.

Some information on household assets and liabilities can be obtained from the 2014 Household, Income and Labour Dynamics in Australia (HILDA) Survey conducted by the Melbourne Institute of Applied Economic and Social Research (see Reserve Bank of Australia, 2014a; 2014b; 2014c; 2016). The 2014 HILDA Survey shows how household's financial circumstances have changed since 2010. According to RBA research, based on the 2014 HILDA Survey, a typical household surveyed had the following financial composition:

2014 Average medium household financial position*

	%
Financial assets	21.0
Non-financial assets	79.0
	100.0
Debt	10.0
Net wealth	90.0
	100.0

* This is calculated as an average of the medium value of financial and non-financial assets. The medium value of debt for households owing 'any debt' is used for net wealth calculations.

Source: Reserve Bank of Australia (2014a; 2014b; 2014c); and Authors.

These figures show that the medium value of assets is dominated by non-financial assets; namely, the prized Australian home. The medium financial asset of households is dominated by superannuation holdings, while debt is dominated by investment property debt followed closely by owner-occupied housing debt (as reflected in column two of Table 1.1).

Table 1.1 also gives more details on the percentages of assets and liabilities from the total households surveyed:

- 98% held deposits
- 86% held a primary house or residential property, and
- 47% held a home loan or investor property loan.

The second largest financial asset—the first being deposits—is superannuation, which is held by 84% of households. In part, this reflects the impact of compulsory superannuation. Also, a fairly large percentage of households (31%) hold equity investments, which reflects a great interest by households in holding shares. Many of these shares were obtained in the sale (floats) of previously publicly owned institutions, or by mutual organisations converting themselves into listed companies (demutualisations); for example, Telstra, NRMA, AMP, the Commonwealth Bank, Qantas, and more recently in Medibank. These companies were all heavily geared to retail (household) investors. Relatively few households have trusts, but these have a large value.

TABLE 1.1 Household financial and non-financial assets and debt, 2014 (HILDA Survey)

	Households holding asset or debt (%)	Median holdings ($000) (2014 prices)
Financial assets		
Equity	31	18
Cash	1	57
Trusts	3	50
Deposits	98	12
Life insurance	6	50
Superannuation	84	90
Non-financial assets		
Primary residence	65	500
Other residential property	21	450
Business assets	10	69
Vehicles	92	18
Collectibles	14	10
Debt		
Owner-occupied home Loan	36	245
Investor property loan	11	277
Business debt	3	80
Credit card debt	24	4
HECS	20	17
Other personal debt	36	13
Any debt	69	120

Source: Reserve Bank of Australia (2014a; 2014b; 2014c).

1.2.2 Saving

In theory, interest rates should have an influence on saving. A higher interest rate means that the return on funds invested is higher, and this should make saving a more attractive option than spending. Despite this, there is little evidence that interest rates have a strong impact on the level of saving. There are a number of possible explanations for this lack of responsiveness. For example:

- interest returns are eroded by taxation and inflation, and the actual return is not high enough to provide an incentive for saving; and
- a lot of saving is target saving (i.e. for a specific purpose, such as a house purchase or retirement)—higher interest rates mean that these targets can be achieved with a lower amount of saving, and this may actually lead some people to reduce their saving rate.

We must, therefore, search for other, more significant influences on saving. One important explanation is the **life-cycle theory of saving**, which states that the saving carried out by a household depends on where the members of the household are in terms of their life cycle. The following is a simplified view of how a household's position in the life cycle affects its savings:

life-cycle theory of saving A theory of saving that states that a household's level of saving depends on what stage it is in, in terms of their economic life cycle.

- *Young single people or couples on two incomes* usually save a little for specific purposes, such as a holiday, a car or a house.
- *Young married people (with children)* save little because of the expenses they face. The saving they do is usually in the form of contributions to superannuation or making payments on housing mortgages.

- *Older people in the workforce* save more because:
  - their accumulated superannuation accrues higher earnings which are not used for consumption;
  - any mortgage payments include a lower interest component and a higher principal component;
  - expenses are lower, partly because children have become self-supporting; and
  - older people are more aware of the need to provide for retirement.
- *Retired people* tend to dissave; that is, they use up their retirement savings to cover their living expenses.

Note that these are typical situations; however, specific households will be affected by their individual circumstances. For example, unemployment might force a household to use up some of its accumulated saving.

The life-cycle theory indicates that aggregate saving will depend on the age composition of the population. Thus, all other things being equal, the ageing of our population will lead to a decline in aggregate saving.

A major influence on saving is household income. In general, we expect that as income increases, a proportion of income (possibly an increasing proportion) is allocated to saving. However, it is possible that at low levels of income no saving takes place because all income is devoted to satisfying basic needs; however, low-income groups might engage in some 'rainy day' saving in order to create a buffer of funds that can be used in the case of a crisis, such as illness or unemployment.

The Wallis Report, produced by the Wallis Committee of Inquiry into the Australian financial system (Financial System Inquiry, 1997), saw the ageing Australian population as a major influence on future economic conditions in Australia. According to the life-cycle theory of saving, the increasing proportion of retirees in the population will lead to an even lower average household saving ratio. It is therefore important to ask what can be done to increase the household saving ratio, because there are many factors that force households to dissave (see 'Finance in Focus: Low household savings').

The approach currently favoured by both sides of politics is to make saving compulsory. In Australia, this has been implemented through the Superannuation Guarantee Charge (SGC), which requires employers to contribute a percentage of each employee's salary/wage to a properly constituted superannuation fund. Many households are willing to put more money into superannuation, because of the tax incentives associated with saving in a superannuation fund — contributions are taxed at less than the individual's marginal tax rate, but it cannot be withdrawn until the contributor retires. It might seem that this policy must increase saving. However, there is considerable evidence that workers reduce their saving outside superannuation because they know that they are accumulating funds within the system (see Connolly and Kohler, 2004).

The 'double taxation' of saving would be removed by shifting from an income base to an expenditure (consumption) base for taxation. Households who reduce consumption would also reduce their taxation outflow and increase their savings. The introduction of the GST (goods and services tax) in Australia in July 2000 represented only a modest step.

Loundes (2001) surveys the impact of the taxation system on saving. The Australian taxation system particularly favours superannuation. The taxation benefits given to superannuation to encourage households to save in this form undoubtedly increase the growth rate of superannuation funds, but it is not clear that they increase total saving. As noted above, it is possible that savers simply substitute holdings in superannuation funds for other assets outside of superannuation.

Finance in Focus

Low household savings

Australia's household savings ratio is at levels last seen at the heights of the Global Financial Crisis. That's not all; it hasn't climbed for the past 12 quarters. That is the longest run since 13 consecutive quarters of no increase recorded between 1985 and 1988. With wages growing slower than inflation, households are resorting to dipping into their savings to meet consumption and fuel their thirst for housing.

The trend is worrying policymakers and economists. Given an expected slowdown in house prices as mortgage rates rise, economists fear the savings ratio could drop further and hurt consumption. Australian household debt has hit a record, and the RBA, in its semi-annual financial stability review in April 2018, noted that about a third of mortgage holders have either no buffer or the capacity to meet less than one month's repayments. The savings ratio, which is a percentage of net savings on net income, stood at 4.8% in the March 2018 quarter, the lowest since September 2008, according to data from the **Australian Bureau of Statistics (ABS)**.

Australian Bureau of Statistics (ABS) Australia's national statistical agency.

The Global Financial Crisis spurred households to cut spending and save. The measure soared to 9.8% in March 2012, the highest since 1986, according to ABS data. Since then, it has only slipped as the housing boom took off.

Source: Abstract: *Business Insider Australia* (2017), 'Savings Ratios in Australia Point to Looming Household Stress', Pedestrian Group.

1.2.3 Constructing a flow-of-funds matrix

We will consider the case of an individual, Julia, who has an annual income of $90 000 and a consumption expenditure of $50 000, leaving her with an annual saving of $40 000. During the year, Julia heard from her broker that shares were to become available in a newly listed company, Canoblas Limited, and, on his recommendation, she purchased $12 000 in equity in the company in the initial public offering (IPO). She also had to deposit an annual amount of $18 000 in her superannuation fund in order to provide for her retirement. Her superannuation fund, in turn, invested these funds in long-term government bonds issued by the Australian Commonwealth Government.

Julia has long wanted to own her own home, and, having found her dream home during the year, she arranged a loan with her bank. She purchased the home for $300 000 and withdrew $20 000 from her credit union deposit account to put towards the purchase price. How much did Julia need to borrow from the bank?

We can answer this question by placing all of the transaction information we have on Julia into a flow-of-funds matrix. We can also trace her transactions with other sectors in the matrix.

Table 1.2 shows how the transactions data for Julia would be arranged in a flow-of-funds matrix. First, Julia is an individual, and is therefore classified in the household sector. The capital account shows her savings of $40 000 for the year less her $300 000 investment in real assets, leaving a deficit of $260 000. This indicates that Julia was a net borrower by $260 000 during this period.

Second, consider her transactions in the financial account of the matrix. She acquired $12 000 in the equity issue of Canoblas Limited and contributed $18 000 in funds to her superannuation fund. These transactions represent the acquisition of financial assets and show up, respectively, in the equity and insurance technical reserves lines in the

TABLE 1.2 Flow-of-funds matrix–households

	Households	Non-financial corporations	Financial corporations	General government	Rest of world	Total
			Capital account			
	($)					
Saving	40 000					
Less investment	300 000					
Net lending (+)/net borrowing (−)	**−260 000**					
			Financial account			
Currency and deposits	−20 000					
Short-term debt instruments						
Long-term debt instruments						
Loan and placements						
Equity	12 000					
Insurance technical reserves	18 000					
Other financial assets						
Net acquisition of financial assets	**10 000**					
Currency and deposits						
Short-term debt instruments						
Long-term debt instruments						
Loans and placements	270 000					
Equity						
Insurance technical reserves						
Other financial liabilities						
Net incurrence of liabilities	**270 000**					
Net errors and omissions						
Net change in financial position	**−260 000**					

financial assets section of the financial account. However, she also withdrew $20 000 from her credit union deposit account to put towards the purchase price of the home. This is recorded as a $20 000 reduction in currency and deposits in the financial assets section of the financial account.

If we calculate the sources of funds available to Julia during the period, she had $40 000 in saving and $20 000 in funds withdrawn from her credit union deposit account—a total of $60 000. Offsetting this are her outlays (uses of funds), comprising $300 000 invested in the property, the acquisition of shares for $12 000, and an $18 000 contribution to superannuation—a total of $330 000. Thus, Julia needed to borrow the difference of $270 000 to finance the property acquisition.

	Sources of funds	($)
Net worth	(saving)	40 000
Loan	(borrowings)	270 000
Total sources of funds		310 000

	Uses of funds	($)
Real assets	(investment)	300 000
Net financial assets	(lending)	10 000
Total uses of funds		310 000

The bank loan of $270 000 is recorded as a financial liability for Julia in the financial account.

Why did Julia need to borrow $270 000 when the capital account shows she is a net borrower by $260 000? The reason is that she acquired an additional net amount of $10 000 in financial assets, comprising $12 000 in equity and $18 000 in superannuation contributions less $20 000 withdrawn from her credit union deposit account.

We extend this example in Table 1.3 by illustrating how these transactions should show up in other sectors in the matrix. The key to this process is that there must be two sides to every transaction, whereby the acquisition of a financial asset by one sector corresponds with a matching incurrence of a financial liability by another sector. For example, Julia's contribution of $18 000 to her superannuation fund is both an increase in financial assets for households and an increase in financial liabilities for financial corporations. Similarly, the purchase of shares represents both an increase in financial assets for households and the incurrence of financial liabilities for the corporation that issued the shares. The issue of shares by a company represents the sale of an equity interest and strictly does not represent a liability on the part of the issuing company. However, in a flow-of-funds setting, the issue of equity is recorded in the liability section of the financial account. The main issue here is that the issue of equity represents funding for the company.

Julia's withdrawal of $20 000 in deposits from her credit union reduces her financial assets and correspondingly reduces the financial liabilities of the financial corporations sector. Her bank loan of $270 000 is a financial liability for the household sector (the loan will be repaid in the future) and a financial asset for the financial corporations sector.

TABLE 1.3 Flow-of-funds matrix

	Households ($)	Non-financial corporations ($)	Financial corporations ($)	General government	Rest of world	Total
			Capital account			
Saving	40 000					
Less investment	300 000					
Net lending (+)/net borrowing (−)	**−260 000**					
			Financial account			
Currency and deposits	−20 000					
Short-term debt instruments						
Long-term debt instruments						
Loans and placements			270 000			
Equity	12 000					
Insurance technical reserves	18 000					
Other financial assets						
Net acquisition of financial assets	**10 000**					
Currency and deposits			−20 000			
Short-term debt instruments						
Long-term debt instruments						
Loans and placements	270 000					
Equity		12 000				
Insurance technical reserves			18 000			
Other financial liabilities						
Net incurrence of liabilities	**270 000**					
Net errors and omissions						
Net change in financial position	**−260 000**					

As we can see, the financial account shows where the allocation of funds flows to but the net amount of funds has not changed.

1.2.4 An actual flow-of-funds matrix

The ABS publishes a flow-of-funds matrix quarterly in its financial accounts, which are part of the Australian National Accounts. Table 1.4 shows the flow-of-funds matrix for the June quarter 2018. It shows net lending (borrowing) for each sector.

In the June quarter 2018, non-financial corporations funded their investments of $53.0 billion by gross saving of $44.5 billion and net borrowing of $28.3 billion. According to the ABS, this was mostly funded through share issuance to the rest of the world. During this period, the Australian economy borrowed $12.7 billion during the quarter, driven by the borrowings of the private non-financial sector.

TABLE 1.4 Flow-of-funds matrix, June quarter 2018

	Non-financial corporations ($b)	Financial corporations ($b)	General government ($b)	Household ($b)	Total national ($b)	Rest of world ($b)
			Capital account			
Financing resources						
Net saving (a)	5.2	3.8	14.1	−8.9	14.1	11.9
plus Consumption of fixed capital	39.4	2.9	9.6	29.7	81.6	–
Gross saving	**44.5**	**6.7**	**23.7**	**20.8**	**95.8**	**11.9**
plus Net capital transfers	0.4	–	−1.2	0.6	−0.2	0.2
less Statistical discrepancy (b)	–	–	–	–	−12.6	–
Total financing resources	**44.9**	**6.7**	**22.5**	**21.5**	**108.2**	**12.1**
Uses of financing (Investment)						
Capital formation						
Gross fixed capital formation	52.9	3.1	20.7	44.1	120.7	–
plus Change in inventories	0.3	–	0.2	−1	−0.5	–
plus Net acquisition of non-produced non-financial assets	−0.1	–	–	0.1	–	–
Total capital formation	**53.0**	**3.1**	**20.9**	**43.2**	**120.2**	**–**
			Financial account			
plus Financial investment						
Acquisition of financial assets	−9.3	45	17.8	55.3	13.6	26.3
less Incurrence of liabilities	18.8	55.8	17.5	29.4	26.3	13.6
Net financial investment (Net lending (+)/net borrowing (−))	**−28.1**	**−10.8**	**0.4**	**25.9**	**−12.7**	**12.7**
less Net errors and omissions	−20	−14.5	−1.2	47.6	−0.7	0.7
Total investment	**44.9**	**6.7**	**22.5**	**21.5**	**108.2**	**12.0**

Source: Financial Accounts of the United States Flow of Funds, Balance Sheets, and Integrated Macroeconomic Accounts First Quarter 2018. https://www.federalreserve.gov/releases/z1/20180607/z1.pdf.

Concept Check

3 What is the difference between economic and financial investment?

4 What are some of the reasons for saving?

LEARNING OBJECTIVE 3
Examine indirect and direct financing.

1.3 Indirect and direct financing

Funds are usually transferred from surplus to deficit units via financial institutions which act as intermediaries, borrowing from surplus units to lend to deficit units. This process is known as intermediation, or **indirect financing**.

Intermediaries themselves tend not to have large surpluses or deficits. The alternative approach to transferring funds is **direct financing**, in which deficit and surplus units deal directly with each other, often through financial markets. Figure 1.1 shows these two different approaches to financing.

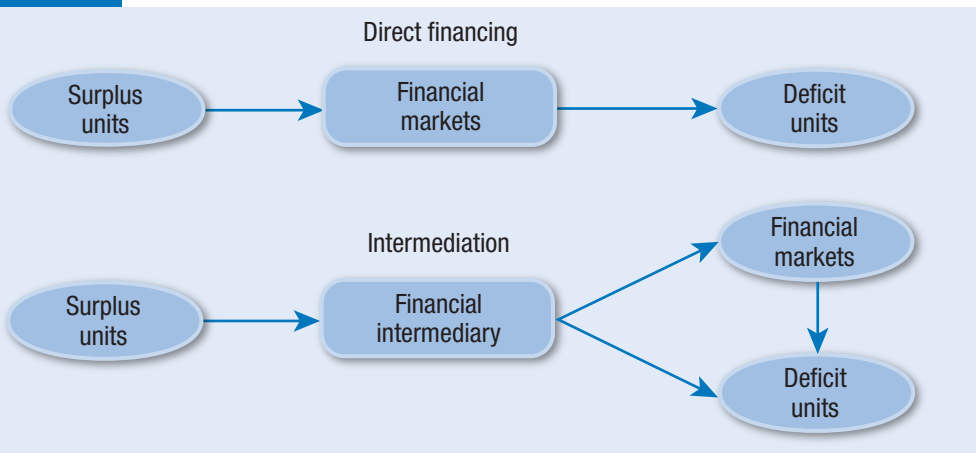
indirect financing The transfer of funds between surplus to deficit units via a financial institution.

direct financing The transfer of funds between the surplus to deficit units directly without a financial institution intermediating the process.

A useful way to distinguish between financial intermediation and direct financing is to consider the number of financial assets that are created in the process of transferring funds from ultimate lenders to ultimate borrowers. In the process of financial intermediation, two financial assets are created. Consider the case of banking. The lender (i.e. investor) deposits funds with a bank and has a legal claim on the bank in the form of a deposit or bond issued by the bank. This legal claim represents a financial asset to the investor. Meanwhile, the bank lends these funds to borrowers, who in turn incur a legal obligation to the bank to repay the funds. The bank now holds a financial asset in its name. In this process, two financial assets are created—one held by the investor/depositor and the other by the bank intermediary. This is a considerable advantage for the depositor, because default by the borrower has no direct implications for the depositor—the bank, not the depositor, must absorb this loss.

Now consider the case of direct financing. In direct financing, the ultimate lender purchases a financial claim issued directly by the ultimate borrower. An example is a share or bond issued by a company and held by an individual investor. In this process,

FIGURE 1.1 Alternative ways to transfer funds



only one financial asset has been created. Let us look at intermediation and direct financing in more detail.

1.3.1 Intermediation

Carrying out financing indirectly through financial intermediaries has considerable advantages, which explains why it is normal for funds to pass through this process.

A financial sector can depend heavily on direct financing as a result of attempts by governments to over-regulate financial intermediaries so that it is not cost-effective for consumers to use them. For example, when banks were heavily regulated prior to the deregulation of the 1980s, financing shifted away from them into the less regulated non-bank financial institutions or into direct financing; for example, the solicitor market, in which solicitors brought together clients with money to lend and those who wished to borrow.

A major advantage of financial intermediaries is that they are able to transform assets; that is, they can offer depositors assets with different characteristics from those that they buy. Asset transformation has three components:

- *Maturity transformation* Depositors receive assets with different maturities from the assets which the intermediary purchases. A special case of maturity transformation is liquidity transformation—depositors can have immediate access to their money while borrowers can obtain long-term loans. Financial intermediaries achieve this transformation by relying on the fact that only a small proportion of their depositors will require repayment of their funds at any point in time. The intermediary needs to keep only a small proportion of its assets in a liquid form to meet these demands. The remainder can be used to purchase longer-term and higher-yielding assets.
- *Quality transformation* The credit ratings of financial intermediaries such as banks are usually much higher than those of their borrowers. The intermediary can do this because of the capital it holds and because of the benefits it derives from diversification of its loan portfolio.
- *Denomination transformation* A financial intermediary aggregates the funds of many small savers to lend to large projects which would otherwise not be available to depositors.

Another advantage of intermediaries is that the risks of a project are spread over a large number of depositors. If depositors invest directly in a project that fails, they would lose all their funds. When depositors invest through an intermediary, their return is reduced by the percentage loss on all assets, but they are unlikely to lose all of their funds.

Depositors in financial intermediaries gain from reduced transactions costs. This requires that there be economies of scale in transactions (the cost of transactions does not go up proportionally with their size) or economies of scope in transactions (it is cheaper to do a range of transactions together than to do them on a stand-alone basis). An example of the latter case is where a teller in a financial intermediary can handle a range of transactions in one visit.

Depositors in financial intermediaries also gain from economies in processing information on loans (credit evaluation), and from intermediaries monitoring loans to mitigate default. Finally, financial intermediaries are often linked with the payments system—it is necessary to have deposits with them to participate in that process.

1.3.2 Direct financing

Despite the advantages of intermediation to both borrowers and investors, there is a significant volume of direct financing in the Australian financial system. Governments and corporations issue debt instruments directly to investors. There is also an inter-company market in which companies deal directly with each other. In these cases, the transactions have very large denominations and the companies involved have high credit ratings so that the advantages of intermediation are less important. The share market is also an example of direct financing when shares are sold to individual investors. Note that while shares are bought and sold on the stock exchange, the stock exchange itself is not a financial intermediary, because it does not borrow funds from investors and lend the funds to investors—rather, the stock exchange simply facilitates transactions in shares.

What factors account for the growing volume of direct financing in the Australian financial system? We can answer this question by considering developments on the supply side of funds (investors) and the demand side of funds (borrowers).

On the *supply* side, an increasing proportion of the savings of households has been diverted from traditional intermediaries, such as banks, to fund managers. Households have been investing in funds largely due to initiatives of the Australian Commonwealth Government, such as compulsory superannuation. Fund managers invest in financial assets such as shares and bonds on behalf of contributors to the funds. Some commentators regard managed funds as intermediaries, but investment through them can also be regarded as direct financing, because the funds themselves do not issue financial instruments to investors—rather, they hold financial assets on behalf of the investors and distribute earnings, net of management fees, based on the performance of the assets in the funds. If the investments perform well, investors benefit directly, but if the investments perform poorly, investors may lose some proportion of the capital value of their investment. This differs from an investment in a bank deposit, where depositors can only ever receive the value of their initial deposit and the contracted return, regardless of the performance of the bank's loans and other financial assets. Another way of looking at this difference is that bank depositors have a claim on the bank's management, whereas the holders of units in a managed fund only have a claim on the assets held by the fund.

On the *demand* side, companies with strong financial fundamentals have been bypassing banks over recent years and borrowing by issuing large-denomination debt instruments in financial markets both in Australia and overseas. The strong fundamentals of these companies qualify them for high credit ratings, which in turn enables them to raise funds cost-effectively in these markets. Also, a growing number of companies have been using equity markets for financing. A feature of these issues is that a portion of the equity raising has been set aside for individual investors, leaving less for institutional investors such as fund managers. The result is that many householders now own shares both in their own right and through their superannuation fund.

Primary and secondary markets

primary market The market in which investors purchase financial instruments from the issuer.

The process of direct financing is facilitated by the existence of financial markets in which financial instruments, such as bank deposits, bonds and shares, are traded. When borrowers seek funds through financial markets, they issue (sell) financial instruments into the market. This is known as a **primary market**, or the market where investors purchase

financial instruments from the issuer, for the first time. For example, when investors purchased Telstra shares in its initial public offering (IPO), this was a primary market. Companies and governments can raise funds from a range of investors in primary markets. These investors include individuals, financial intermediaries such as banks, companies and offshore investors.

Funds are transferred between investors and borrowers through public offering or **private placement**. With a private placement, the borrower (typically a corporation) sells an entire issue of financial instruments to a single investor or small group of investors. The advantages of a private placement over a public offering are lower transaction costs for bringing instruments to the market, and the greater speed with which funds can be raised.

private placement The issue of financial instruments to a single investor or group of investors.

To a large extent, the success of borrowers in raising funds in the primary market depends on investors' perceptions regarding their ability subsequently to sell their instruments to other investors. This is particularly important in the case of shares, because ordinary shares have no maturity, meaning investors can generally only obtain cash by selling their shares to other investors. The market in which holders of instruments can on-sell them to other investors is known as a **secondary market**. The existence of a secondary market implies that the holder of instruments has access to cash if needed. However, the ease with which instruments can be converted to cash depends on the liquidity of the secondary market. Let us consider this characteristic.

secondary market The market in which financial instruments are sold to other investors.

Market liquidity

The **liquidity** of a secondary market refers to the ease with which financial instruments can be bought or sold without large changes in their price. Ease of exchange refers to the time it takes to sell an asset, while price certainty requires that the asset be sold at a price that reflects its intrinsic value. Thus, the holder of an asset who has a pressing need for cash may be able to sell the asset at a price that is considerably below its intrinsic value, but this would not constitute a liquid market for the asset in our definition.

liquidity The ability to buy or sell an instrument at any time without causing a substantial change in its price.

The volume of trading—or turnover—in assets is often regarded as a measure of market liquidity. According to this measure, a market showing high turnover would be considered a liquid market. This definition, however, needs to be interpreted with caution. A market suffering from panic selling, for example, is likely to exhibit high turnover, but this would not satisfy our definition of a liquid market.

Three factors that are conducive to the liquidity of financial markets are depth, breadth and resilience. *Depth* measures the ability of the market to absorb temporary imbalances in demand and supply without substantial price changes. In the case of individual instruments, such as shares in a particular company, depth refers to the number of shares that can be bought or sold at prices near the market price without causing a sharp change in price. The greater the number of shares that can be transacted without large price changes, the greater the liquidity of the stock. *Breadth* implies that the prices of financial instruments are competitive, due to the existence of many traders in the market. *Resilience* describes the ability of a market to recover from a substantial rise or fall caused by unusually large transactions.

dealers Individuals or companies that buy financial instruments on their own account and stand ready to buy or sell instruments at two-way prices (also known as *market-makers*).

market-makers Individuals or companies that buy financial instruments on their own account and stand ready to buy or sell instruments at two-way prices (also known as *dealers*).

Dealers may support the liquidity of a market. In this case they are known as **market-makers**. Market-makers stand ready to buy or sell instruments at specified two-way prices, which they set in line with market conditions—the *bid price* is the one at which they will buy, and the *offer price* the one at which they will sell. The spread (i.e. the difference

between the selling and buying prices quoted by market-makers) is an important indicator of the degree of liquidity of the market. Often dealers are granted an exclusive franchise to deal in particular assets or markets in return for their commitment to stand ready to buy and sell at two-way prices. For example, authorised foreign exchange dealers must quote prices at which they are prepared to buy and sell standard packages of various currencies, without delay. Market-makers thus provide an immediate market in the assets in which they trade. They make profits partly based on the difference between bid and offer prices on the assets in which they make a market.

brokers Agents who bring together buyers and sellers.

Dealers should be distinguished from **brokers**, in that dealers provide immediacy in trading—dealers buy and sell instruments on their own account, and hold an inventory of the financial assets in which they trade. While brokers may hold an inventory of financial assets, this is not necessarily the case. Brokers act as agents between buyers and sellers, bringing the two together. Brokers earn income by charging a commission on these transactions, and by charging fees for providing other related services, such as market research.

Funds markets are closely related to the foreign exchange market, which provides a link with international markets. Overseas participation in Australian financial markets will deepen them, meaning that a larger amount of funds can be transacted without any effect on prices—the decisions of offshore investors to buy or sell instruments are determined by factors which differ from those affecting local investors, which means that overseas investors will often be buying when locals are selling.

derivative A contractual instrument, such as forward, futures and option contracts, whose value depends on (is derived from) the price of an underlying security, commodity, index number, matter, process or event.

The development of the markets for the whole value of a **derivative** or instrument depends on (is derived from) the price of an underlying instrument. Forwards, futures and options contracts are examples of such instruments. The use of derivatives has increased the liquidity of the market for the underlying instruments (called, in this context, the physical market). The existence of these derivatives means that market participants can more readily find buyers or sellers—if they cannot find a counterparty in the physical market, they can often carry out the desired transaction through the forwards, futures or options markets. In the derivatives market it is also possible to undertake **short-selling**, or borrowing an instrument by promising to repay the instrument at some time in the future.

short-selling Borrowing an instrument by promising to repay the instrument at some time in the future.

Short-selling an instrument is accomplished by:

- borrowing the instrument so that you have an obligation to repay the instrument (not an amount of money) to the lender at some future date—you are now 'short' the instrument; and
- immediately converting the borrowed instrument into cash at the current market price—you would gain from this process if the price of the instrument falls and you can buy it back at a lower price.

The liquidity and performance of a market for instruments are also enhanced by the presence of effective speculators and arbitragers.

speculators Investors that take a position in financial markets in order to profit from favourable movements in instrument prices.

Speculators are investors that take a position in financial markets in order to profit from favourable movements in instrument prices. A simple case is where speculators buy 10-year bonds because they believe that bond yields will fall (bond prices will increase). Obviously, the speculators are taking the risk that bond yields may also rise (bond prices will fall)—it is a defining characteristic of speculation that it involves a risk of loss as well as a chance of gain. If speculators believe that bond yields will rise (bond prices will fall), they would short-sell 10-year bonds, probably through the futures market.

Profitable speculation requires that speculators buy instruments when their prices are below the long-run trend, and short-sell them when their prices are above the long-run trend. In so doing, they push the instruments' prices back towards the market trend; that is, profitable speculation stabilises the market and reduces the volatility of instrument prices. Low volatility in a market is desirable, because then instrument holders know that they can sell them in the future at reasonably predictable prices. An instrument which has a stable secondary market is more desirable to potential holders than an instrument that might have to be resold into a volatile market at an unfavourable price.

Of course, speculation is not always stabilising. If, for example, speculators form their expectations on the basis of recent price movements (i.e. they join 'bandwagons'), they can destabilise the market. Such behaviour will lead them to buy when the price is above the long-run trend and sell when it is below the long-run trend. However, this behaviour will lead to speculators losing money, and those who do this on a regular basis will eventually be forced out of the market.

Arbitragers are investors that take offsetting positions, in two separate markets, by trading the same instrument to take advantage of price differentials. Arbitragers buy instruments where the price is low in one market, and sell the same instrument in another market where the price is high. This process differs from speculation in that a profit is earned without taking any risk, so long as the purchase and sale are carried out simultaneously, a condition which is easy to satisfy in wholesale financial markets where transactions are carried out by telephone or through electronic screens. Arbitrage of this type is often described as 'pure arbitrage', to distinguish it from the case where the sale and purchase occur at different times thereby creating some risk, which is also sometimes called arbitrage.

arbitragers Investors that take offsetting positions, in two separate markets, by trading the same instrument to take advantage of price differentials.

Arbitrage improves the functioning of financial markets because it ensures that a uniform price prevails across the market. Market prices are signals to the potential buyers and issuers of an instrument, and if different prices coexist for the same instrument the market is giving confused signals about the value of instrument prices.

Organisation of direct financing

Direct financing is typically organised through two main markets. An **exchange-traded market**, in which the trading of instruments takes place through a centralised exchange facility such as the ASX, or an **over-the-counter (OTC) market**, where financial transactions are conducted directly between dealers—many debt instruments and derivative contracts are conducted in OTC markets. Under an exchange-traded mechanism, all new issues of financial instruments and secondary trading therein takes place through a centralised exchange facility, with open, competitive bidding. An example of such a facility is a stock exchange. The centralised facility collects and distributes information about bids and offers that have been made by buyers and sellers. Most exchanges require membership for the right to trade, and these members elect the governing body for the exchange.

exchange-traded markets Markets in which trading of instruments takes place through a centralised exchange facility, such as a stock exchange.

over-the-counter (OTC) market Markets in which the facilities that provide for financial transactions are not conducted on an organised exchange.

Over-the-counter markets represent the facilities that provide for financial transactions not conducted on an organised exchange. Many debt instruments trade over-the-counter, as do some derivative financial instruments, such as interest-rate swaps. The foreign exchange market is also an over-the-counter market. The facilities in an over-the-counter market comprise dealers (who hold the financial instruments) and brokers who bring dealers and investors together, as well as telephones, computers and electronic networks that facilitate communications between the brokers and dealers.

Concept Check

5 Describe the difference between direct and indirect finance.

6 What is the difference between a dealer and a broker?

LEARNING OBJECTIVE 4

Describe generally the objectives of financial regulation in Australia.

1.4 The objectives of regulation

Financial regulation has had many objectives in the past, but in this discussion we restrict ourselves to those which are currently regarded as legitimate.

1.4.1 Systemic stability

An important objective of regulation is to maintain **systemic stability** or mitigate the risk of financial disturbances that may have wider financial system consequences. The failure of one financial institution can cause the viability of others to come into doubt, leading to **runs**, or large-scale withdrawals of currency and deposits. Runs in a few banks can spread or cause **contagion**, effecting multiple financial institutions and markets, even if those other banks are fundamentally sound. Such spillover effects will have a significant negative impact on the general economy. For example, the cumulative failure of a number of banks would reduce confidence in the domestic payments system, undermining its crucial role in facilitating economic activity.

systemic stability Mitigating the risk of financial disturbances that may have systematic consequences, and responding, where appropriate, to a financial disturbance.

runs Large-scale withdrawals of currency and deposits from financial institutions (usually banks).

contagion A situation in which a problem in one institution (or country) is transmitted to other institutions (or countries), such as a spread of bank runs, or simultaneous market crashes across borders.

There are also some secondary motivations for preventing the emergence of a cumulative process of bank failures. It could lead to losses for small savers, and such losses would be socially undesirable. In addition, doubt concerning the solvency of financial institutions would reduce the incentives for saving.

The problem of contagion is unique to financial institutions. For example, the failure of one retail store does not lead to runs on others. In the case of financial institutions, runs occur because depositors are aware that the institutions hold a thin margin of liquidity on the assumption that only a small proportion of their depositors will want their funds at any point in time. If a depositor believes that other depositors are about to stage a run on an institution, it is rational for that depositor to attempt to get to the head of the queue, because not all depositors will be able to obtain their funds immediately. This is equally true whether the concern is valid (e.g. the institution is insolvent) or unsound (e.g. arising from the failure of a similar institution or from an unfounded rumour). Any run has a considerable (perhaps fully) psychological component, and this characteristic makes it difficult to avoid and control.

Contagion can also arise because when one bank fails, other banks exposed to it will suffer losses. Such exposures arise from interbank markets, which trade loans, deposits and derivatives, or from the interbank settlement process in the payments system. As Neal (1997) points out, the introduction of real-time interbank settlement has reduced the likelihood of spillover effects in the settlement process. Banks might also have large one-off exposure to another bank, such as a loan. Awareness of these actual interdependencies between banks is another factor that might generate a run on a bank. On the other hand, some finance writers believe that the risk of contagion is overrated. For example, Kaufman (1994) examines the evidence for contagion and

concludes that the danger is not as great as has been assumed by many writers. This debate is summarised by Dale (1996). There is certainly little evidence of contagion in the modern-day history of Australian banking.

Regulation of the financial system to maintain stability is justified because it is a public good; that is, it is a good that, once provided, can be consumed by anybody in the economy without reducing the consumption of anybody else. The regulations used to achieve this objective fall into two broad and overlapping categories: those that aim to prevent an initial failure (thereby protecting depositors), and those that attempt to prevent an initial failure from becoming contagious. **Deposit insurance**, or a scheme which guarantees that bank depositors will receive their funds, is an example of an approach that does both of these things. If depositors are aware that deposits are insured, they have no incentive for staging a run on their institution, even if similar institutions have failed.

deposit insurance A scheme that guarantees that bank depositors will receive their funds.

International experience, especially with the saving and loans crisis in the United States and the recent GFC, suggests that **moral hazard**—or the temptation for people who are covered by insurance to take risks because any losses will be covered by the insurer—is likely to arise out of deposit insurance schemes when there is a fixed (possibly zero) charge for the protection. Once management have met this fixed charge, they have an incentive to undertake high-yield/high-risk activities in order to increase their return, because any losses will be covered by the insurance scheme. The solution to this problem is to charge a fee for the insurance, based on the risk taken.

moral hazard The temptation or accommodation of reckless risk-taking or management with the presence of external coverage for losses provided by insurance or someone else who bears the cost of risks.

It would be difficult to introduce a full deposit insurance scheme in Australia. In the case of banks, a deposit insurance scheme does not seem to be feasible. With the small number of bank failures, there is no adequate actuarial basis for determining a premium based on the risk of failure. An alternative approach is for a government authority (such as the central bank or the prudential regulator) to guarantee bank deposits. This process is known as acting as 'lender of last resort'. Australian banks were for many years widely regarded as being guaranteed by the RBA. Since the RBA is specifically charged only with 'protecting depositors', this guarantee is, at best, an implicit one. The RBA has repeatedly said that it will not prevent a bank from failing, but there is a view that some banks are 'too big to fail'; that is, they will be supported because their failure would have significant systemic stability implications. This view is reinforced by the explicit government guarantee that was given to deposits during the GFC. The practical implication of this implicit guarantee is that large banks can borrow from money markets at a slightly lower rate than other financial institutions. There is also some evidence that they have an advantage over smaller institutions in raising equity capital.

Even the situation for depositors remains unclear. If a bank fails, will they receive their funds immediately, or will they have to wait until the liquidation is completed? Will they receive accrued interest or the interest that should have been paid on the funds over the waiting period? The situation for depositors in non-bank financial institutions has been even less clear. In the past, state governments have stepped in to shore up organisations facing a run, but they have been unwilling to protect depositors in the event of a failure. In the case of the Farrow Corporation in Victoria in 1990, depositors lost a substantial proportion of their funds and had to wait some time for repayment (see Fitz-Gibbon and Gyzicki, 2001). In spite of this lack of clarity, and the tenuous nature of 'implicit guarantees', there remains a danger that they can lead to moral hazard.

One of the reasons for the establishment of APRA, as separate entity to the RBA, is that it is impossible for APRA to guarantee a financial institution. Unlike the RBA, it does not have the power to issue money. APRA covers its costs by imposing levies on the institutions it regulates. Thus, it would not have the resources to bail out a failed financial institution. Nevertheless, this rearrangement probably does little to convince depositors that the government will not assist a large financial institution in the event of possible difficulties. It is hard to believe that a government could stand aside and allow millions of depositors (i.e. voters) to lose their money. It is accepted, even by members of the Wallis Committee, that some banks will continue to be 'too big to fail' (Harper, 1997) and will need to be supported if they get into difficulties. Thus, the implicit guarantee will re-emerge, and in a form that is particularly disadvantageous to smaller institutions because it has been made clear that they may not have a guarantee.

Moral hazard can be controlled in two ways. First, a government guarantee can be subjected to additional regulations which have the aim of preventing risk-taking behaviour. Second, financial institutions can be required to pay a variable fee that is determined by the risk they are taking. Examples of the second approach are deposit insurance schemes with premiums that depend on the risks incurred and a capital requirement that varies with risk (a capital adequacy requirement).

macroprudential regulation Prudent controls, mostly on authorised deposit-taking institutions, designed to reduce systemic risk within the financial system.

Finally, in recent years APRA in conjunction with ASIC have introduced what is known as **macroprudential regulation** as a form of control for systemic risk arising in the property market (see 'Finance in focus: Macroprudential controls and interest-only loans').

Finance in Focus

Macroprudential controls and interest-only loans

Prudential supervision extends beyond 'fit for purpose' products and services from individual financial institutions. In March 2017, APRA (2017) publicly strengthened its macroprudential regulation on authorised deposit-taking institutions (ADIs) lending to borrowers of interest-only loans. This followed gradual attempts by APRA (and ASIC) from 2014 to reduce ADI exposure to interest-only loans. The RBA does not have a definitive definition of macroprudential control. However, Orsmond and Price (2016), from the RBA, consider such controls as a means to reduce systemic risk within the financial system.

The need for macroprudential controls, according to APRA, arises from potential systemic risk due to high growth rates in residential house prices, coupled with rising household indebtedness, subdued household income growth and almost a decade of historically low official interest rates. Of course, one of the biggest concerns was the flow of lending moving into investor-only lending. Accordingly, APRA made explicit the following limitations on ADIs:

- Interest-only lending could only be 30% of total new residential mortgage lending, while loan-to-value ratios (LVRs) needed to be within 80%. Strict scrutiny and justification were required for LVRs above 80%, and particularly 90%.
- Lending to investors-only had to be managed according to a stipulated benchmark of 10% growth.
- Serviceability metrics, including interest rate and net income buffers, were required to be benchmarked at risk levels that are appropriate.