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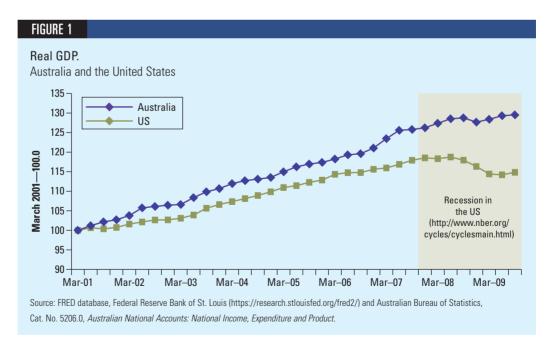
INTRODUCTION

Not too long ago, macroeconomists often referred to something known as the 'Great Moderation'. This is a term attributed to Ben Bernanke (among others), the current chairman of the United States' Federal Reserve. In a speech in 2004, Bernanke observed that 'one of the most striking features of the economic landscape over the past twenty years or so has been a substantial decline in macroeconomic volatility'. By this he meant that measures of economic activity such as real gross domestic product (GDP) seemed to have become smoother over the last two decades; absent are the booms and busts that had previously characterised economic activity. This new-found stability seemed to characterise inflation as well. One could have been forgiven for thinking that the business cycle had finally been relegated to the past, something of interest to scholars of economic history but of little interest to those considering the contemporary economic landscape.

What a difference a few years make! Starting around 2007, we have witnessed an extraordinary turnaround in economic activity, with potentially the worst economic contraction since the Great Depression of the 1930s. This is especially true of the world's largest economy, the United States (US). According to the National Bureau of Economic Research, the US economy entered recession in December 2007 (http://www.nber.org/cycles/cyclesmain.html). At the time of writing, the US is still in recession. This makes the current downturn the longest recession since the 1930s. Other countries have fared little better, particular those of Western Europe.

Australia, in contrast, has performed reasonably well. Figure 1 shows a comparison of real GDP for the US and Australia. To make the comparison easier, the two sets of data have been adjusted so that each is expressed as an index in which the value of real GDP in the March quarter of 2001 is represented by the value 100. Thereafter, movements in the respective indices reflect what has happened to the two countries' GDPs.

The recession in the US shows up starkly in these data. The most recent observation, for the September quarter of 2009, is over 3 per cent lower than the figure at the start of the recession (December 2007). In contrast, Australia's real GDP is 2.6 per cent *higher* in the September quarter of 2009 compared to the December quarter of 2007.



What explains this? How did the US economy unravel to such an extent? Why did this spread to so many other countries? Why has Australia been less affected than many other economies? These are the questions we will explore in this update. To do this, we will first examine how difficulties in the US financial system became apparent over 2007. Next, we trace how these

problems affected the US and international economies with a focus on Australia. Finally, we look at the various policy responses that were adopted.

THE US RECESSION

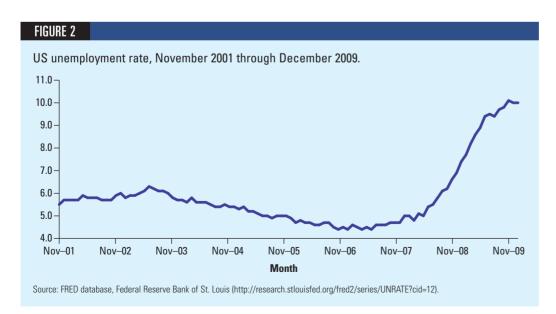
As we discuss in Chapter 3, economists divide the users of the final goods and services that make up real GDP into four categories: households, firms, governments, and the foreign sector (that is, foreign purchasers of domestic products). Corresponding to the four groups of final users are four components of expenditure: consumption, investment, government purchases, and net exports. Three of these four components all declined in the US during the last two quarters of 2008, at accelerating rates:

- consumption spending decreased by 3.8 per cent in the third quarter and 4.3 per cent in the fourth quarter
- investment spending fell by 1.7 per cent in the third quarter and 21.1 per cent in the fourth quarter
- exports rose by 3 per cent in the third quarter but declined by 23.6 per cent in the fourth quarter; imports shrank by 3.5 per cent in the third quarter and by 16 per cent in the fourth quarter.

The only component of real GDP to rise over this period was government expenditure, which rose by 5.8 per cent in the third quarter and 1.6 per cent in the fourth quarter.

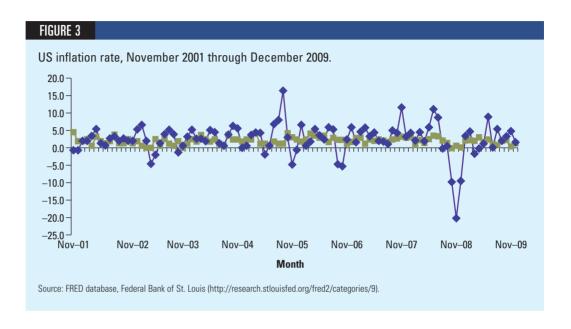
UNEMPLOYMENT SINCE 2001

As one would predict from Okun's Law (Chapter 6), the decreases in real GDP were matched by increases in the unemployment rate. Figure 2 shows the unemployment rate since the previous recession ended in November 2001. You can see that the unemployment rate rose from 4.9 per cent in December 2007 to 10.0 per cent in December 2009. This increase was reflected across all demographic and educational groups. Further, when part-time workers who actually wanted to work full-time are included, along with discouraged workers who had left the labour force, the unemployment rate rose from 9.0 per cent in February 2008 to over 15.8 per cent in April 2009.



INFLATION SINCE 2001

The only bright spot throughout the recession was the inflation rate. In Chapter 3, we discuss how the consumer price index (CPI) is constructed and how the inflation rate is calculated using the CPI. The inflation rate using the CPI is shown as the blue line in Figure 3, which plots inflation rates since November 2001.



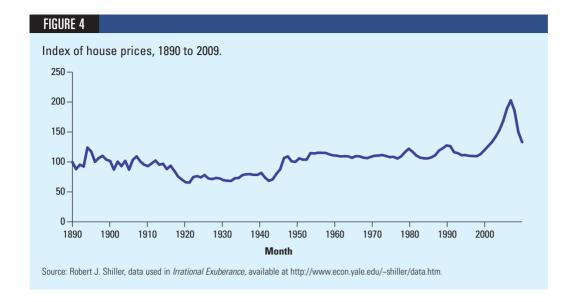
Inflation measured by the CPI was quite volatile, with rates as high as 11 per cent in November 2007 and June 2008 and as low as –20 per cent in November 2008. This volatility was mainly due to large increases in crude oil prices from the US autumn of 2007 through the US summer of 2008, followed by the collapse in oil prices that began late in the US summer of 2008.

However, the inflation rate calculated directly from the CPI can be misleading as it can be unduly affected by items that have both a large weight in the index and which also behave in a volatile manner. A more useful measure of the underlying inflation trend is the core rate of inflation, which is equal to the inflation rate calculated from the CPI when food and energy prices are removed. This measure remained fairly steady until the last quarter of 2008, when it fell for two months and even indicated deflation in October 2008, but rose back into positive territory in early 2009.

We now have a sense of what happened in the past two years in the US. Now, we must turn our attention to some important details and ask why the economy peaked in December 2007 and fell deeper into a recession throughout 2008 and early 2009.

THE HOUSE PRICE BUBBLE

The house price bubble that burst in the US summer of 2006 is a primary cause of the current US recession. The average price of American homes rose at a spectacular rate from the late 1990s until the summer of 2006; this phenomenon attracted both borrowers and lenders who wished to profit from the record real estate boom. This state of affairs was unprecedented in American history, as shown in Figure 4. The highest average annual rate of increase in house prices previously was the spike of 1976 to 1979, when house prices rose 4.9 per cent per year. By contrast, from 2001 to 2006, average house prices rose by an average of 7 per cent per year. This number masks the fact that over the period the rate of increase itself rose, starting at 4 per cent in 2001 and peaking at an annual rate of 12 per cent in 2004–2005.



At the growth rates experienced in the 1970s and 1980s, the average price of a house doubled in 15 to 19 years. By contrast, at the growth rates experienced in the recent house price boom, the average price of a house doubled in about 10 years, that is, between 50 per cent and 100 per cent faster than ever before.

The average home price peaked in July 2006. Prices at first fell gradually, declining by about 6 per cent from July 2006 through May 2007. The decline accelerated, however, and between May 2007 and February 2009 the average home price dropped by 19 per cent.

WHY DID THE HOUSE PRICE BUBBLE GROW SO LARGE?

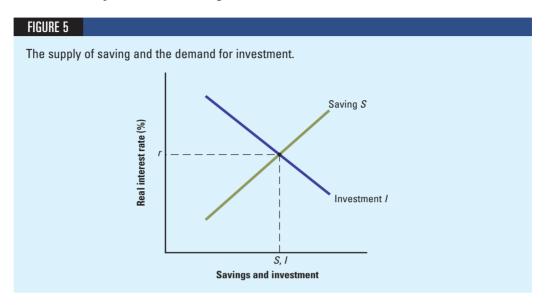
The house price bubble in the US grew so large from 2002 to 2006 because of three factors. First, households began using real estate generally, and their own homes in particular, as the primary means of increasing their wealth rather than doing so through saving. This trend should have led to an increase in interest rates, which in turn would have slowed down the formation of the bubble or perhaps even punctured it. Rates did not rise, however, which leads to the second factor in the story: the globalisation of international capital markets, and the consequent increase in the supply of saving available to American borrowers, kept interest rates from rising and pricking the bubble. Third, the Federal Reserve did not begin to raise interest rates until mid-2004, and only then in 0.25-percentage-point increments. This action was not enough to stop the bubble from growing.

THE HOUSEHOLD SHIFT FROM SAVING TO CAPITAL GAINS

In Chapter 4, we show that a household can increase its wealth in two ways: through saving and through capital gains. Capital gains can accrue rapidly if the price of an asset (such as a share, bond, or home) is rising quickly. By contrast, saving is a slow, steady process of accumulating wealth that lacks the 'get rich quick' cachet of windfall capital gains. The house price increases of the 1997-to-2006 period represented massive capital gains, and this encouraged households to increase the value of their real estate holdings, rather than save, as a way of increasing their wealth. This drove up the demand (and prices) for homes even further, encouraging yet more people to enter the housing market. This is a classic example of how a bubble forms: people believe that the value of an asset (for example, a house) is going to increase, and the demand for that asset rises, causing the price to increase, encouraging even more demand for the asset and further increases in the asset's price.²

SAVING, INVESTMENT, AND FINANCIAL MARKETS

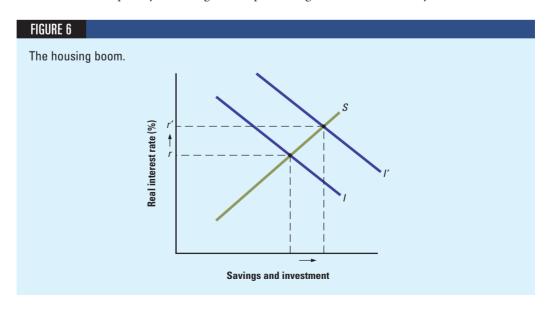
We can use the tools we develop in Chapters 4 and 17 to analyse how the bubble affected financial markets and, more importantly, why interest rates did not increase. The basic model, which is described in Chapter 4, is shown in Figure 5.

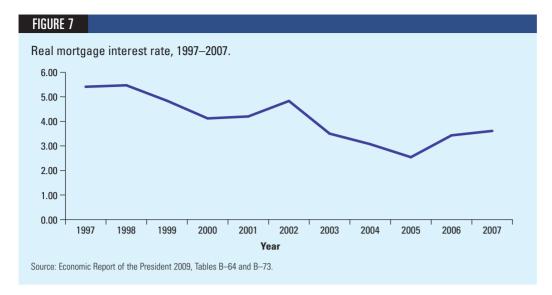


The real interest rate equilibrates the amount of saving that is available in the financial market with the demand for investment; one of the components of investment demand is newly produced housing.

The house price bubble and the attendant increase in the demand for housing led to a large increase in the demand for investment. This is shown in Figure 6.

According to Figure 6, the housing boom should have caused real interest rates to rise between 2001 and 2006. This is where the bubble could have been slowed or stopped. In particular, an increase in real interest rates would have made loans more expensive for prospective homebuyers, and this would have decreased the benefits of buying a home because the rising value of the home would be offset in part by the rising cost of purchasing the home. This likely would have slowed



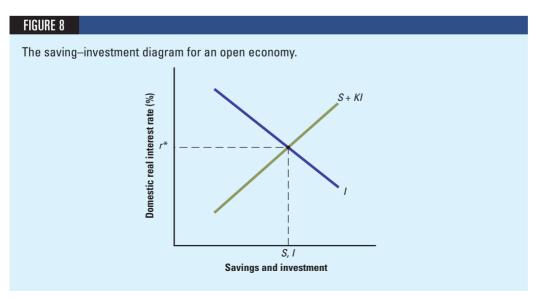


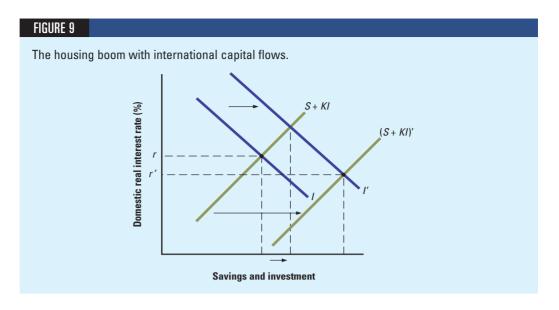
the demand for homes and kept the house price bubble from inflating at the rate that it did. That is not what happened to real mortgage rates, however, as shown in Figure 7.

There were increases in mortgage rates in 2002 and 2006, but the general trend in real mortgage interest rates was downward. So why did real interest rates not rise and slow down the bubble?

Figure 6 leaves out an important factor in modern financial markets: the globalisation of capital markets. Specifically, savers in any country can put their resources into assets throughout the world. This means that savers in such fast-growing economies as China and India could send their savings to the US, where borrowers such as the US government could use the funds to cover rising budget deficits (caused by tax cuts and military expenditures), and others could purchase homes.³

We can add globalised financial markets to our model by adding international capital flows to the supply of saving; this is shown in Figure 8 where KI represents international capital inflows. We can now explain one reason that real interest rates did not rise and cut short the housing price boom. Figure 9 tells the story using our saving—investment model. First, as we discussed, the housing price boom increased the demand for investment (I). Second, despite declines in private and public saving, the supply of saving (S + KI) increased due to large capital inflows from abroad. Thus, the increase in investment demand, driven by the house price bubble, was offset by an increase in the supply of saving, driven by international capital inflows.





THE FEDERAL RESERVE AND INTEREST RATES, 2002 TO 2004

There was one other actor that perhaps could have slowed the house price bubble: the Federal Reserve. As we discuss in Chapters 10 and 11, a central bank such as the Federal Reserve can control the real interest rate in the short run; thus, it could have started increasing interest rates when it saw signs of a bubble in the housing market in order to slow it down or even stop it from forming. John B. Taylor, an economist at Stanford University, has argued forcefully that the Federal Reserve should have begun raising interest rates as early as 2002.⁴ It chose not to do this. Rather, in the wake of the 11 September 2001 terrorist attack, and due to fears of deflation, it chose to keep interest rates low through the US summer of 2004. Then, it began raising interest rates in 0.25-percentage-point increments from this time through the summer of 2007.

THE ROLE OF DECLINING HOME PRICES IN THE FINANCIAL CRISES OF 2007 AND 2008

The decline in house prices that began in July 2006 set off a chain of events that led to severe financial crisis in August 2007 and a worldwide financial panic in the latter part of 2008. These financial crises led to sharp declines in aggregate demand throughout the world, pushing the global economy into a deep recession. Here, we will focus on two questions. First, how was the fall in house prices transmitted to the financial markets? Second, why did financial markets stop functioning in the US autumn of 2008?

THE SECURITISATION OF THE MORTGAGE MARKET

The key connection between the decline in home prices and the meltdown in financial markets is a financial instrument known as a mortgage-backed security. A mortgage-backed security is a bond whose value is determined by a pool of home mortgages. As the value of the mortgages rises, the value of the security rises, and when the value of the mortgages falls, the value of the security falls as well. The advantage of these securities is that they allow investors to spread their risk. That is, instead of a bank holding on to every mortgage that it writes, it can sell the mortgage to another financial intermediary, which then packages together many mortgages into a mortgage-backed security. Insurance companies, investment banks, and other commercial banks purchased these securities because they were thought to be relatively safe investments. After all, the securities were

backed by mortgages, and mortgages were secured by real estate that could always be sold to pay off the bond holders.

Mortgage-backed securities were not entirely without risk, however. In order to protect themselves from the riskiness of the securities, financial institutions purchased a form of insurance called a credit-default swap. It works like this: suppose that you hold a security that has a risk of default. For a small fee, a company offers to pay you if the security's issuer actually does default. If the security reaches maturity and is paid off, the company gets to keep the fee. Unlike true insurance policies, however, the government did not require issuers of swaps to put aside any reserves to cover defaults.

This would come back to haunt the financial markets, as we will see in the next section.

The stage was now set for declining house prices to affect the financial markets in a big way. As house prices began to fall in 2006 and 2007, holders of mortgage-backed securities started to sell their bonds since they (correctly) thought that the value of these bonds would start to fall. This resulted in an increase in the supply of mortgage-backed securities for sale, which decreased the price of the securities and actually made them less valuable to those who continued to hold them. All of the financial intermediaries who held mortgage-backed securities saw the value of their assets shrink as the value of the mortgage-backed securities they held declined, so they started selling these securities even more quickly in order to get them off their books, depressing the prices further.

THE PANIC OF 2008

The first signs of the trouble caused by mortgage-backed securities appeared in August 2007. A number of financial intermediaries in Europe and the US reported losses due to the declining value of mortgage-backed securities in their portfolios. A large British bank, Northern Rock, failed, setting off a banking panic in Great Britain. Northern Rock had aggressively purchased real estate debt (both mortgages and mortgage-backed securities), and financial market participants started to ask questions about the viability of other financial institutions that had made similar investments. Their attention soon focused on even larger investment banks like Bear Stearns, Lehman Brothers, and Merrill Lynch.

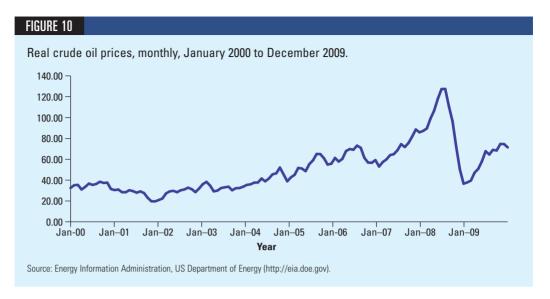
THE PANIC REACHES THE UNITED STATES

The first of these institutions to collapse was Bear Stearns, in March 2008. Bear Stearns's stock price had been falling since the US summer of 2007, when two of its hedge funds collapsed due to the decline in the value of mortgage-backed securities.

By early March, Bear Stearns's stock price was rapidly approaching zero, and officials at the Federal Reserve became concerned that a Bear Stearns bankruptcy would have ripple effects throughout Wall Street and the global financial system. As a result, the Federal Reserve arranged financing and loan guarantees so that fellow bank JP Morgan Chase could purchase Bear Stearns and help them avoid bankruptcy.

Many observers at the time thought this then unprecedented deal would be the end of the problem. A major investment bank had failed, but the system was intact, and the Federal Reserve had proven that it would take strong action to prevent a financial crisis. But investor confidence was still far from solid when a second problem hit: on top of the declines in home prices, the US economy suffered a record rise in crude oil prices. Figure 10 shows the magnitude of this oil price shock. Because supply in the oil industry had been largely stagnant in the face of sharply rising global demand from China, India, and elsewhere, crude oil prices shot upward. In 2007, this increase in oil prices accelerated, more than doubling in the year and a half between January 2007 and July 2008.

The effect of this oil price shock on financial markets was immediate. Many companies that were dependent on oil for production and sales faced severe challenges; General Motors, Ford and Chrysler, for example, saw slumping demand for their large cars and trucks as consumers tried to cut back on petrol expenditures. Further, higher oil prices made new home construction even less



attractive, especially in far-flung places that required long work commutes. The prices of these homes, already in decline, fell even faster as a result of diminished demand.

GOVERNMENT MAKES TOUGH DECISIONS

As prices of homes fell and prices of oil-dependent activities rose, even more individuals began to default on their home loans. Two pillars of the mortgage finance industry in the US—Fannie Mae (the Federal National Mortgage Association) and Freddie Mac (the Federal Home Loan Mortgage Corporation)—had been driven to the brink of bankruptcy by defaults. Fannie Mae and Freddie Mac were government-sponsored private corporations that were the largest issuers of private home mortgage loans in the world; the far-reaching implications of their potential failure caused the government to take the extraordinary move of seizing operating control of the corporations on 7 September 2008.

One week later, the government again had a tough decision to make. Lehman Brothers, one of the oldest investment banks in the US, had been a heavy investor in mortgage-backed securities; as the value of these securities declined drastically, so did the company's solvency. On 14 September, the Treasury Department and the Federal Reserve allowed Lehman Brothers to enter bankruptcy. This unprecedented decision set off a panic in the financial markets. Previously, many in the industry had assumed that the government would automatically rescue troubled financial giants. If Lehman could fail, who was next?

The answer came quickly. American International Group (AIG) was the largest issuer of creditdefault swaps. If these contracts had been true insurance contracts, government regulations would have required that AIG put a minimum amount of money in reserve to cover losses if one of their contracts failed. But sellers of credit default swaps like AIG were not required to hold assets in reserve to cover future claims, so many did not; when mortgage-backed securities began to fail and AIG's default-swap clients demanded payment virtually all at once, the company quickly ran out of money.

Because AIG's debts to other financial firms were so large, policymakers feared that allowing it to go bankrupt could touch off a chain of additional bankruptcies, resulting in a meltdown of the global financial system—a meltdown far beyond the panic caused by the failure of Lehman Brothers. The government felt that it had no choice but to intervene. On 16 September, just two days after the failure of Lehman Brothers, the government announced that it would provide US\$20 billion (later increased to US\$150 billion) in financing for AIG to prevent a domino-effect bankruptcy catastrophe.

At this point, it became startlingly clear that many of the oldest and largest US financial firms were on the brink of insolvency. On 18 September, then US Treasury Secretary Henry Paulson proposed the Troubled Asset Relief Program (TARP), under which the government would use

public funds to buy mortgage-backed securities and other 'troubled' assets from banks. If the banks no longer held these problematic assets, the theory went, then they should be in a stronger financial position to successfully weather the turmoil.

Public opinion was sharply divided on the merits of this 'bank bailout' plan. Many critics were understandably reluctant to commit taxpayer dollars; others felt that not interceding would have even worse repercussions. The debate raged on; by the time the US Senate and the House agreed on a modified version of the plan on 3 October, the financial markets had almost ceased to function.

Since the beginning of the economic downturn, the Federal Reserve had acted aggressively in an effort to inject additional liquidity into the banking system to keep funds flowing for large corporate investors as well as the average consumer. These measures, however, did little to defuse the economic crisis in the short run. Banks were still charging 3 percentage points above the interest rate on Treasury bills on loans to each other; typically, the fee is 0.25 to 0.5 per cent. Companies that relied on short-term debt could not get credit, and banks stopped making loans to even their most creditworthy customers.

The effects of the panic trickled down from the major investment banks and financial markets to everyday workers. It became difficult, if not impossible, for firms to hire new workers (or, in some cases, even pay existing ones), purchase necessary capital, cover operating costs, and produce goods and services at the same rates as they had been able to in the past.

ECONOMIC TOOLS AND THE RECESSION

We've seen how the economy swung from a bubble to a recession, but how do government policy and economic tools work to fix it? To answer this question, we will need to briefly revisit Chapters 7, 8 and 9.

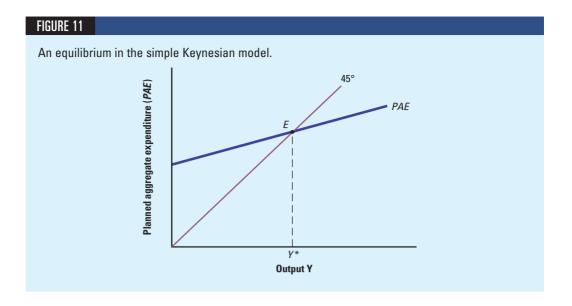
BANK LENDING

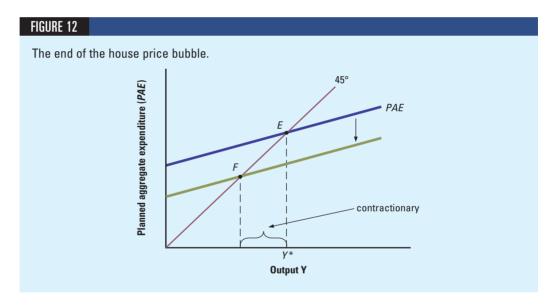
If you recall from Chapter 9's example of the Bank of Gorgonzola, bank lending is essential to creating new money and keeping an economy flowing. Unfortunately, banks became extremely reluctant to assume additional risk in any form, including issuing additional loans. Thus, many conventional sources of credit simply dried up during the US autumn of 2008, harming companies that relied on credit to keep their operations running. Also, for a recovery to happen, other businesses will need access to credit in order to expand production. This situation is why government policymakers focused so intently on steps to improve the financial condition of the nation's banks.

APPLYING THE SIMPLE KEYNESIAN MODEL

The simple Keynesian model is developed in Chapters 7 and 8 and summarised by the diagram in Figure 11. The economy is in equilibrium at point *E*; as drawn, this corresponds to the economy's level of potential GDP. This means that the economy's actual output is equal to potential GDP and that unemployment is at the natural rate of unemployment.

The bursting of the housing bubble and the Panic of 2008 caused both businesses and households to cut back on their spending in two ways. First, the financial market disruptions made it difficult for businesses to borrow funds for investment spending and for consumers to borrow funds for purchasing housing and motor vehicles. Second, the financial crisis increased the level of uncertainty about the future, which led to a reduction in autonomous spending, or spending independent of output. Analytically, this situation can be represented as a downward shift in the planned aggregate expenditure (PAE) line shown in Figure 12. At point E, the economy is in a situation where PAE is less than actual output; the natural response of businesses is to reduce production until their output again meets demand (seen as the movement from point E to point E in Figure 12). At E, the economy is in a recession, with output below potential. Further, since output is below potential, Okun's Law tells us that unemployment has now risen above the natural rate.





THE FINANCIAL CRISIS AND AUSTRALIA

Like almost every other country in the world, Australia was not immune to the global economic downturn. However, the magnitude of the downturn in Australia was comparatively mild. Figure 13 shows comparative data on the growth in real GDP for Australia and for other regions and selected countries. The contrast between Australia's recent experience and that of the rest of the world is quite stark. Australia was unusual in not experiencing negative economic growth. While the rest of the world's major economies contracted, Australia's economy continued to expand, albeit more slowly than has been the case in recent times. Nonetheless, given the magnitude of the downturn elsewhere, this was a remarkable achievement.

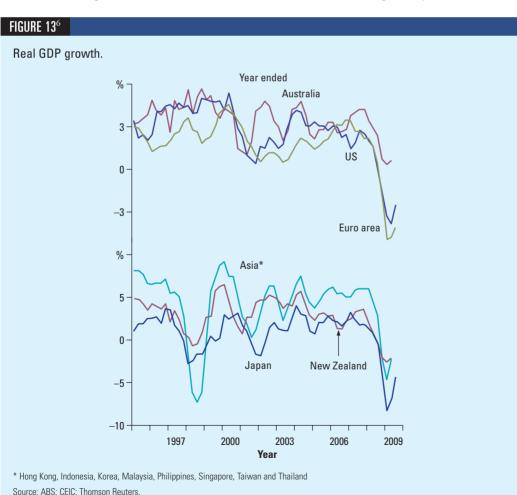
WHAT EXPLAINS AUSTRALIA'S GOOD FORTUNE?

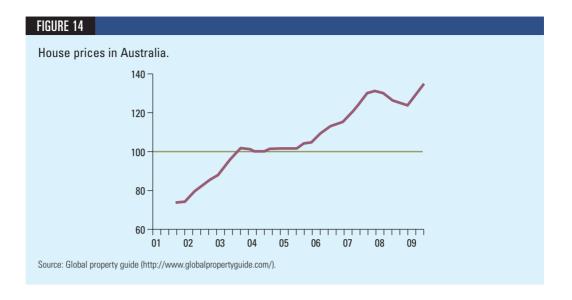
There are at least four reasons.⁵ The first is that Australia's housing market did not collapse as in the US and in many countries of Europe. Figure 14 shows an index of Australian capital city house prices. While there was a decline in house prices towards the end of 2007, by 2009 this had been

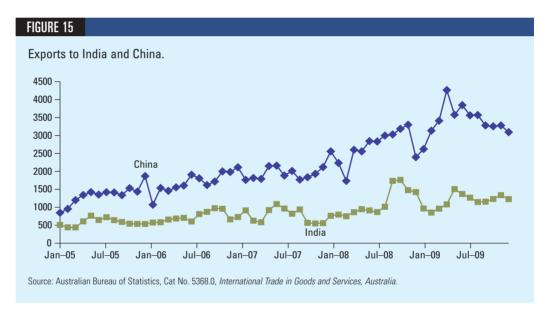
reversed and house prices continued their strong upward climb. There are many reasons for this relatively strong performance. However, the predominant short-term reason is that, unlike the US, there have been comparatively few instances in Australia of people being unable to repay their loans (in Australia, there is no close equivalent to the sub-prime market) and this meant Australia has seen comparatively little increase in the stock of houses for sale (unlike the US where forced sales of housing has been a feature of the crisis). Combined with a general long-run increase in the demand for housing, this meant the growth of Australian house prices quickly regained its momentum once the initial shock of the crisis passed.

The second factor that contributed to Australia's relatively strong performance was the strength of its financial system. Put simply, Australian banks did not succumb to the excesses that many US financial institutions embraced—Australian banks did not hold as many 'toxic' assets on their books as their counterparts elsewhere. This is partly explained by Australian banks operating under a stricter system of prudential regulation than banks in the US. It may also be that Australia's banking system is less characterised by the scramble for market share that may have promoted excessive risk-taking in the US.

The third factor is Australia's strong export performance and the importance that exports have in promoting Australian economic growth. The key here is China and, to a slightly lesser extent, India. As has been well documented, these economies are growing at spectacular rates. Both are large purchasers of Australian exports, particular primary commodities. Figure 15 plots Australian exports to China and India. For both countries, there was a short-term dip in their demand for exports that coincided with the worst of the crisis. However, demand for exports quickly recovered and while the upward trend has slowed in recent months (most probably because of the







strengthening of the Australian dollar), there has been no catastrophic collapse in the wake of the crisis.⁷ As exports are a significant component of aggregate expenditure in Australia, this helped to moderate any fall in planned aggregate expenditure.

The fourth factor was an unusually aggressive coordinated fiscal and monetary policy response. We take this up in the next section.

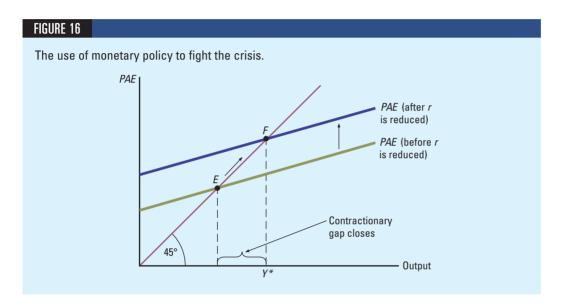
RESPONSES TO THE RECESSION

The recession in the US had wide-reaching implications for other parts of the world. European governments responded to the recession on 10 October 2008 by making direct injections of capital into troubled banks. Instead of buying troubled assets as the US had first done, British and European Union leaders bought actual shares of stock in their banks and investment firms to keep them supplied with capital. Days later, the US followed Britain and Europe's lead. The US Treasury Department announced on 13 October that it, too, would inject additional capital directly into financially shaky banks.

MONETARY POLICY RESPONSES

Central banks led the initial response to both the bursting of the housing price bubble and the Panic of 2008. The US Federal Reserve aggressively cut its target interest rate, the federal funds rate, from 5.25 per cent in August 2007 to zero in December 2008. A similar strategy was adopted in Australia; on 3 September 2008 the target cash interest rate was reduced from 7.25 per cent to 7.00 per cent. The target cash rate was cut a further five times reaching its lowest point, 3.00 per cent, on 8 April 2009.

These consistent cuts made it cheaper for both businesses and households to borrow funds to make purchases once the banks started lending again. The results of these actions are shown in Figure 16 by the upward shift in the expenditure line and the movement of the economy from point E towards point E.



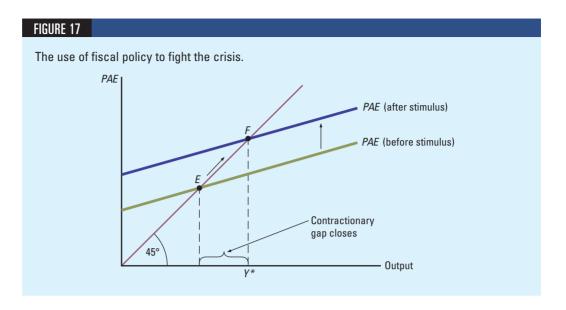
FISCAL POLICY RESPONSES

While monetary policy was critical to preventing an even worse recession from occurring, the recessionary pressures associated with the crisis were thought to be just too severe for monetary policy to succeed by itself. Therefore many countries, the United States and Australia among them, also turned to fiscal policy, which, as you recall from Chapter 8, involves changing the levels of government spending and taxation in order to increase spending and push the economy back towards potential output.

In Australia, two major fiscal stimulus packages were introduced. The first was announced on 14 October 2008; this was a \$10.4 billion package of fiscal measures, roughly equivalent to 1 per cent of Australia's GDP. The bulk of the package comprised a cash bonus paid to pensioners and low income families. Other measures included support for the housing and construction sectors which were thought to be particularly vulnerable at the time. A second, even larger, package was announced on 3 February 2009. More than half of this package was earmarked for expenditure on roads, schools, and housing.

We can visualise what the effects of these fiscal stimulus measures might be in the simple Keynesian model (Figure 17, overleaf).

Like monetary policy, fiscal policy shifts the expenditure line upward, causing short-run equilibrium output to rise from point E to point F, ultimately pushing the economy towards equilibrium closer to its potential output.



FUTURE PROSPECTS

At the time of writing (January 2010), the prospects for the Australian economy in the short to medium term look relatively good. It is clear that a recession in Australia has been avoided. Aggressive monetary and fiscal policies combined with growth in major trading partners such as China have been the key factors.

In contrast, the US remains in recession, although there are some signs of the beginning of a tentative economic recovery.

One question that remains is the long-term lessons that have been learnt from the crisis. Many commentators argue that there needs to be a new regulatory framework in the US, one that constrains financial institutions to adopt more prudent lending practices. As the crisis so dramatically demonstrated, without a well-functioning financial system, macroeconomic stability cannot be guaranteed. For this reason, macroeconomists will watch these regulatory developments with keen interest.

ENDNOTES

- 1 Remarks by Governor Ben S. Bernanke at the meetings of the Eastern Economic Association, Washington, DC 20 February 2004. The Great Moderation. http://www.federalreserve.gov/boarddocs/speeches/2004/20040220/default.htm.
- **2** For a clear discussion of this phenomenon, see Robert J. Shiller, *The Subprime Solution: How Today's Global Financial Crisis Happened, and What to Do about It.* (Princeton, NJ: Princeton University Press, 2008).
- 3 See Ben S. Bernanke, 'The Global Saving Glut and the US Current Account Deficit'. Speech given on 14 April 2005, as the Homer Jones Lecture, St. Louis, Missouri, available at http://www.federalreserve.gov/boarddocs/speeches/2005/20050414/default.htm.
- 4 John B. Taylor, Getting Off Track: How Government Actions and Interventions Caused, Prolonged, and Worsened the Financial Crisis (Stanford, CA: Hoover Institution Press, 2009).
- 5 An excellent discussion of Australia's experience during the global financial crisis is 'The Global Financial Crisis of 2007-09—an Australian Perspective' Saul Eslake, Economic Papers, 28(3) September 2009, 226–38. This discussion in this section relies heavily on the arguments forwarded by Eslake.
- 6 This chart has been prepared by the Reserve Bank of Australia—see http://www.rba.gov.au/chart-pack/index.html.
- 7 In China's case, a massive fiscal stimulus helped to ward off the worst of the contractionary pressures coming from abroad and this kept Chinese aggregate demand relatively high. Part of this aggregate demand was channelled into demand for other countries' exports, including Australia.
- 8 Similar strategies were not needed in Australia where, as described above, the banking system did not come under the same degree of stress.
- **9** Note, however, that in the US the Federal Reserve's actions did not actually push the economy back to point *F* in 2008 and 2009; rather, the correct way to think about the role of monetary policy is that it prevented a recession that could have been much, much worse. For example, the Federal Reserve also created a variety of new tools, including loosening restrictions on rules for banks to borrow directly from the Federal Reserve and enacting a program to purchase unsecured corporate bonds. On 17 March 2009, it took an even bolder step, announcing plans to purchase up to US\$1 trillion of long-term US Treasury bonds. All these steps help to match the needs of borrowers with funds available from savers.
- 10 See Australia's response to the global financial crisis: A speech to the Australia Israel Leadership Forum, 24 June 2009, Dr Steven Kennedy, Australian Treasury (http://www.treasury.gov.au/documents/1576/HTML/docshell. asp?URL=Australia_Israel_Leadership_Forum_by_Steven_Kennedy.htm) for details.

