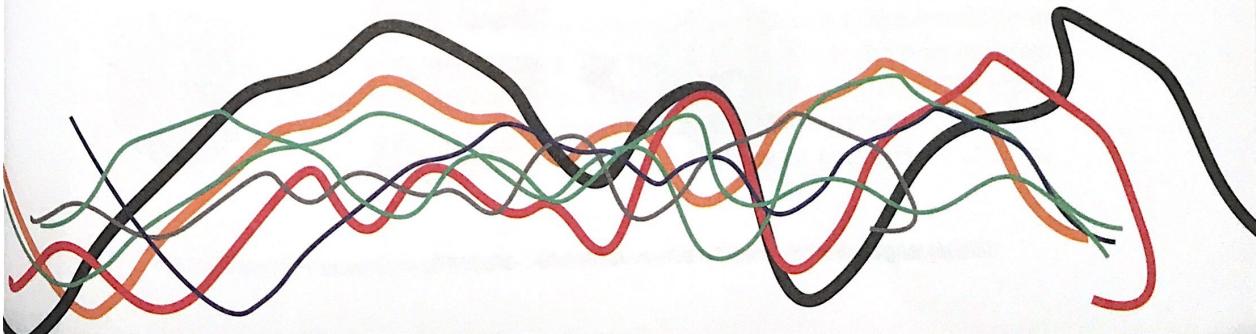


# 13

## Monetary Policy

### Chapter concepts

- *the concepts of monetary policy and the cash rate*
- *circumstances under which the RBA may change the cash rate*
- *how monetary policy affects the level of economic activity i.e. the transmission mechanism*
- *the concepts of expansionary, contractionary and neutral monetary policy stances*
- *the impact of different monetary policy stances on the level of economic activity*
- *strengths and weaknesses of monetary policy*
- *contemporary monetary policy stances in Australia*



## Introduction

Monetary policy is the second of the demand management policies that are used to influence aggregate demand, inflation and employment. To understand how monetary policy works in Australia, we first investigate the nature of financial markets and the role of interest rates.

## The financial sector

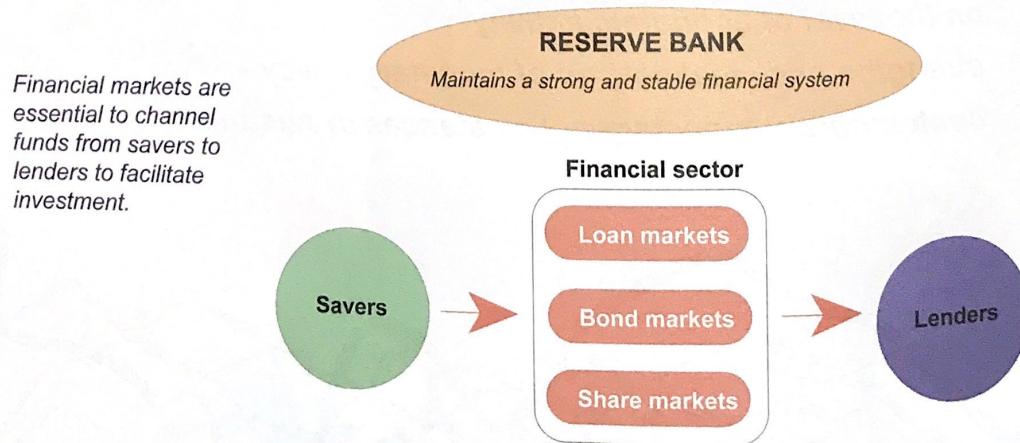
Financial markets are the intermediary between savers and investors, or lenders and borrowers of funds. A range of financial institutions – banks, building societies, finance companies, merchant banks and credit unions – serve this intermediary role. They are termed financial intermediaries because they ‘mediate’ or come between people who have surplus funds and those who want to borrow funds.

There are three main types of financial markets:

- loan markets – in which business firms borrow money to purchase assets and capital equipment, and households borrow to fund their housing mortgage, buy consumer durables and pay for holidays. Banks, finance companies and credit unions are part of the loan market;
- bond markets – in which firms and governments sell bonds to raise finance. A bond is also known as a fixed interest security; and
- share markets – in which firms obtain finance by issuing new shares through the stock market.

A well-functioning financial sector is critical to the economy’s health because of it provides essential financial services to both households and firms. Money and credit facilitates transactions between buyers and sellers, and enable savings to be

**Figure 13.1 The financial sector**



converted into investment. Investment is a key ingredient in promoting economic growth and increasing living standards over time. The adage that 'money makes the world go round' is very pertinent.

In an advanced economy, money performs three key functions:

- a means of exchange – money is used for purchasing goods and services;
- a unit of measurement – money measures and compares prices, incomes and asset values; and
- a store of value – money can be saved and used for future transactions.

A stable financial system is a key ingredient in ensuring sustainable economic growth. A crisis such as the failure of financial institutions can quickly lead to a major economic recession, as occurred in global financial crisis (GFC) of 2008-09.

An important role for the government is to ensure the stability of the financial system. In most countries this was the original reason for the creation of a central bank. In Australia, the central bank is the Reserve Bank of Australia (RBA). In the United States, the central bank is called the Federal Reserve Bank, and in the United Kingdom it is known as the Bank of England. In each of these countries, the central bank is responsible for the maintenance of overall financial stability, and the administration of monetary policy.

The Australian Securities and Investment Commission (ASIC) and Australian Prudential Regulation Authority (APRA) also play a role in financial regulation.

## Interest rates

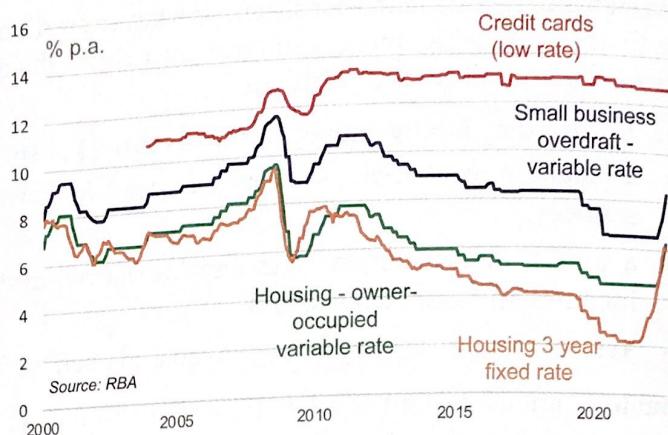
Interest rates represent the price of credit – a payment from a borrower to a lender for the use of funds. A household taking out a loan at 7 per cent interest rate per annum will pay \$7 in interest for every \$100 borrowed. Likewise, interest rates represent the return for saving surplus funds.

Interest rates can also be thought of as the opportunity cost of money, in the sense that holding money forfeits the return that could have been earned by depositing the money in an interest-bearing account.

The interest rate in a particular market is the price that equates the supply and demand of funds. Savers determine the supply of funds while borrowers determine the demand for funds. Because a large proportion of transactions in our economy rely on credit and borrowing, changes in interest rates can have a significant effect on the level of spending and economic activity.

It is important to distinguish between nominal interest rates (the headline or published rates) and real interest rates. The real interest rate is the nominal rate minus the rate of inflation. For example, if the nominal interest rate is 7 per cent and the expected inflation rate is 2 per cent, then the real interest rate is 5 per cent. The real rate of interest is an important influence in economic decisions

Interest rates on loans vary because lenders need to be compensated for different levels of risk - the chance that a borrower will default on repayments. The risk is influenced by the time over which a loan is taken (longer periods imply greater risk); whether the loan is secured against an asset (such as property); and the 'quality' of the loan.



**Figure 13.2 Selected interest rates for borrowers: 2000-2022**

involving borrowing and saving. The real rate of interest is a measure of how much borrowers actually pay and how much lenders receive in terms of purchasing power. As we would expect, borrowers prefer low real interest rates, while savers and lenders prefer high real interest rates.

There is usually a positive 'margin' between interest rates and the rate of inflation to preserve a positive return for lenders. To maintain this margin, nominal interest rates rise when inflation rises.

As illustrated in figure 13.2, interest rates vary across various types of loans. This is because lenders need to be compensated for different levels of risk they take on when lending funds. That risk is influenced by the time over which a loan is taken (longer periods imply greater risk); whether the loan is secured against an asset such as property or other collateral; and the credit record of the borrower. Note that low rate credit card interest rates are the highest of the small selection of loans in figure 13.2 because they are unsecured loans to individuals.

### The objectives of monetary policy

A key factor in determining the level of interest rates is monetary policy. The objectives of monetary policy, as defined in the Reserve Bank Act (1959) are:

- the stability of the currency (price stability or low inflation);
- the maintenance of full employment (low unemployment); and
- the economic prosperity and welfare of the people of Australia.

*The Reserve Bank of New Zealand pioneered inflation targeting in 1989. Most advanced economies now set an explicit inflation target.*

These objectives are somewhat broader than those of central banks in most of the advanced economies, which focus primarily on price stability. The RBA adopted an 'inflation-targeting' focus in 1993, after previous approaches to monetary policy had not delivered acceptable price stability and macroeconomic outcomes. The RBA target is to achieve an inflation rate between 2-3 per cent, on average, over the course of a business cycle.

Inflation is regarded as a risk to the economy because it:

- erodes real income (spending power);
- leads to higher interest rates, creating a disincentive to private sector borrowing and spending;
- decreases a country's international competitiveness;
- increases uncertainty;
- encourages investment in non-productive assets; and
- undermines the value of the currency.

Figure 13.3 shows Australian inflation data (on a year ended at quarter basis) between 2019 and 2022. The CPI is the 'headline rate' that summarises price movements across all classes of household expenditure, and is the measure most often referred to by the media. The headline rate can be adjusted to estimate an 'underlying' or 'core' rate of inflation. Some goods have volatile prices. Fruit and vegetable prices, for example, exhibit seasonal volatility. Retail petrol prices are volatile because they reflect movements in the world oil price and changes in the exchange rate. Removing these volatile components from the headline rate helps to estimate the core rate of inflation.

The Reserve Bank calculates 'weighted median' and 'trimmed mean' measures of inflation. These procedures eliminate outlier groups at both the top (highest rates of price change) and bottom (lowest rates) of the CPI price series, and thus produce an estimate of the 'underlying' rate of inflation (the average of the trimmed mean and weighted median measures).

**Figure 13.3 Measures of inflation: 2019 – 2022**

Year ended	Headline CPI % p.a.	excluding volatile items %	Weighted median %	Trimmed mean %
Mar 2019	1.3	1.3	1.4	1.6
June 2019	1.6	1.5	1.3	1.5
Sept 2019	1.7	1.9	1.3	1.5
Dec 2019	1.8	1.7	1.3	1.5
Mar 2020	2.2	2.1	1.6	1.7
June 2020	-0.3	0.4	1.2	1.2
Sept 2020	0.7	0.9	1.2	1.1
Dec 2020	0.9	1.5	1.4	1.2
Mar 2021	1.1	1.4	1.3	1.1
June 2021	3.8	3.1	1.5	1.6
Sept 2021	3.0	2.5	2.1	2.1
Dec 2021	3.5	2.6	2.4	2.6
March 2022	5.1	4.0	3.0	3.7
June 2022	6.1	5.3	4.2	4.9
Sept 2022	7.3	6.7	5.0	6.1

Source: RBA Measures of Consumer Inflation, accessed November 2022

*The Reserve Bank's inflation target is between 2 and 3% over the business cycle. Underlying measures of inflation provide a more accurate view of core inflation than the 'headline' CPI rate.*

Australia is not the only country to have adopted inflation targeting as the guiding objective for monetary policy. New Zealand, Canada, the United Kingdom, and Sweden have also done so. The importance of announcing, and pursuing, an inflation target lies in influencing the expectations of firms and households. Since implementing inflation targets, inflation in this group of countries has fallen. In Australia, the RBA credits inflation targeting for keeping inflation low and in promoting a satisfactory rate of economic growth.

Keeping inflation low also helps to achieve the second objective - the maintenance of full employment - because it promotes business confidence and encourages investment, which underpins employment growth. Full employment is synonymous with the 'natural rate' of unemployment, currently estimated to be around 4 per cent for Australia. The natural rate does gradually change over time due to changes in the structure of the labour market and changes in government policy. In the 1980s for example, the natural rate of unemployment was above 6 percent. It has declined over time, probably because the labour market became more flexible. The Reserve Bank believes that by achieving the objectives of price stability and full employment it can achieve the third objective of economic prosperity. Prosperity refers to rising living standards over time, usually measured as an increase in real GDP per capita. Keeping the economy at full employment and maintaining low inflation will promote long term economic growth and rising living standards.

### Monetary policy and the cash rate

Monetary policy refers to actions taken by the Reserve Bank of Australia (RBA) to influence aggregate demand, employment and inflation in the economy. The Interbank Overnight Cash Rate (Cash Rate) is the main policy tool. The RBA announces a cash rate target, then uses open market operations as necessary to achieve that target in the interbank market. The market is made up of banks and a small number of other financial institutions, collectively known as approved deposit-taking institutions (ADIs). These institutions create the demand for funds in the interbank market, and the RBA controls the supply of funds.

Monetary policy is reviewed on the first Tuesday of each month, when the nine-member RBA Board meets with bank staff to analyse key domestic and international economic indicators such as economic growth; inflation;

*Economic conditions, and decisions taken at RBA Board meetings are summarised in a media release on the meeting date, and discussed in detail in Board minutes released two weeks after each meeting.*

employment growth; unemployment; household earnings and savings; and the exchange rate. Board meetings are also informed by the regular discussions RBA staff hold with business people.

Should the bank decide to change the cash rate target, a public announcement is made at 12.30pm, and the target rate is implemented from the next day. Changes to the cash rate target are generally made in small amounts, often 0.25 percentage points (25 basis points).

The way the target rate is achieved in the market from day to day is a complex topic. Banks keep 'exchange settlement accounts' (ESA) at the RBA in order to settle their day-to-day transactions. The daily demand for cash in ESA accounts rises and fall as banks meet their transactional obligations to each other, and banks either borrow from the bank, or increase their exchange settlement deposits with it, as necessary. The RBA supplies enough funds to maintain liquidity in the market through daily auctions, using repurchase agreements ('repos'), government bonds and foreign exchange swaps. These 'market operations' ensure the cash rate target is met from day to day.

### Monetary policy stances

As shown in figure 13.4, the RBA cut the cash rate target several times between 2015 and 2020, reaching just 0.10 per cent, where it stood for a year and a half. This was the lowest cash rate in Australian history. Rates rose rapidly after May 2022 in response to rising inflation.

In general terms, an upward cash rate movement over a period of time is described as a 'contractionary' monetary policy stance, and a downward movement is an 'expansionary' stance.

A benchmark that is sometimes used to help understand the monetary policy stance at any point in time is the 'neutral rate'. The neutral rate is the 'real policy rate' that is neither expansionary nor contractionary. The term 'real policy rate' refers to the nominal cash rate adjusted for inflation – the current cash rate minus the underlying inflation rate in the last quarter. The RBA acknowledges that "gauging the level of the neutral rate is challenging in practice because it cannot be directly observed and must instead be inferred from the data" (RBA, Monetary Policy Meeting Minutes, July, 2022). Thus, any estimate needs to be treated with caution. The concept of a neutral rate is acknowledged as an 'academic exercise'. It is useful for assessing the stance of monetary policy at any point, but there is no direct way of observing or calculating the rate.

Sometimes, the media uses the terms 'restrictive' or 'tight' when describing contractionary policy, and 'accommodative' or 'easy' when referring to expansionary policy.

**Figure 13.4 : Cash rate targets 2015–2022**

Date of change	Cash rate target	Date of change	Cash rate target
4 Feb 2015	2.25	3 November 2020	0.10
6 May 2015	2.00	3 May 2022	0.35
4 May 2016	1.75	7 June 2022	0.85
3 Aug 2016	1.50	5 July 2022	1.35
4 June 2019	1.25	2 August 2022	1.85
2 July 2019	1.00	7 September 2022	2.35
1 October 2019	0.75	3 October 2022	2.60
19 March 2020*	0.25	1 November 2022	2.85

\* There were two decisions in March 2020: - reducing the cash rate to 0.5% on March 3, then 0.25% on March 19. Source: RBA

The cash rate target in Australia fell between 2015 and 2020, reflecting weakness in the economy after the mining boom, then the onset of the COVID-19 pandemic. The cash rate has risen in 2022 to counter inflationary pressures.

Reserve Bank research papers estimated a neutral rate between 3 and 4 percent over the period 1990 – 2007, after which it has declined steadily and may have been around 0.5 per cent at the start of 2020 due to the long period of slow growth after the GFC. At the time of writing (late 2022), the neutral rate would have risen somewhat because inflation is rising. As at the November RBA Board meeting, the real policy rate was negative because the cash rate is 2.85 per cent, and underlying rate of inflation is around 5.5 per cent. This would imply that monetary policy is still expansionary.

But owner-occupier households with a mortgage may not share that opinion – interest rates on housing loans rose from around 2.8 per cent in April 2022 to 6.4 per cent in November 2022!

### Illustration - a contractionary stance

The impact of contractionary monetary policy is illustrated in figure 13.6, using both the aggregate expenditure and AD/AS models. In the Keynesian model, higher cash rates reduce aggregate expenditure and the equilibrium level of income falls from  $Y_1$  to  $Y_2$ . In the AD/AS model, assume economic activity was initially operating beyond its potential (at  $Y_1$ ) and the price level was  $P_1$ . A tight monetary stance shifts the AD curve to the left, reducing both the rate of growth and the rate of increase in prices.

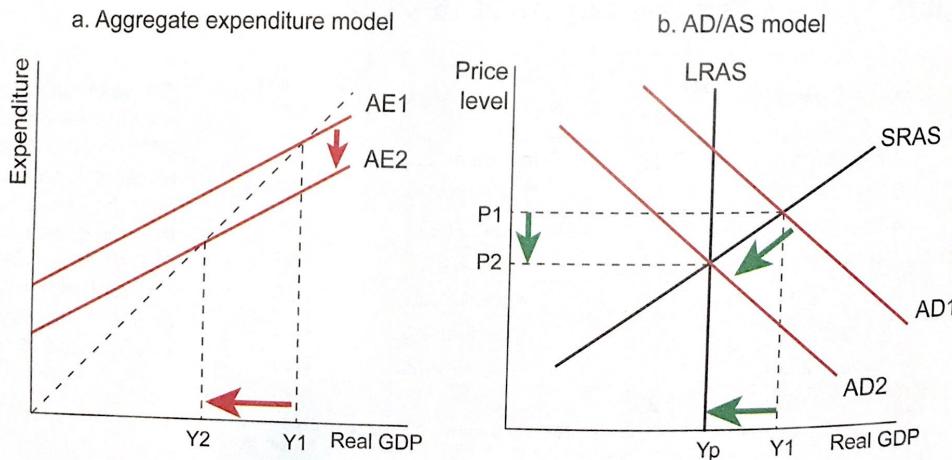
### The transmission mechanism

How do changes in interest rates affect the level of economic activity? It is important to realise that when the RBA changes the cash rate, other interest rates

**Figure 13.6 Contractionary monetary policy**

*The Reserve Bank will use contractionary monetary policy (raising the cash rate) when*

- inflation is above the target range ( $> 3\%$ );
- the economy appears to be growing too fast ( $> 3.5 - 4\%$ ); and
- unemployment is below the natural rate ( $< 4\%$ ).



(such as bank bill rates; deposit rates; mortgage rates; business loans and credit cards) also move, although the amount of change can vary, and there may be a time lag after changes in cash rate targets.

As previously discussed, the cash rate is the interest rate on unsecured overnight loans between banks. It is near risk-free. All other interest rates are higher than the cash rate to compensate lenders for the risk associated with the type of loan, and a time premium that compensates the bank for lending over longer periods – such as a twenty-five year housing mortgage. A change in the cash rate usually flows through to other rates because financial institutions adjust the risk/reward profiles of their portfolio.

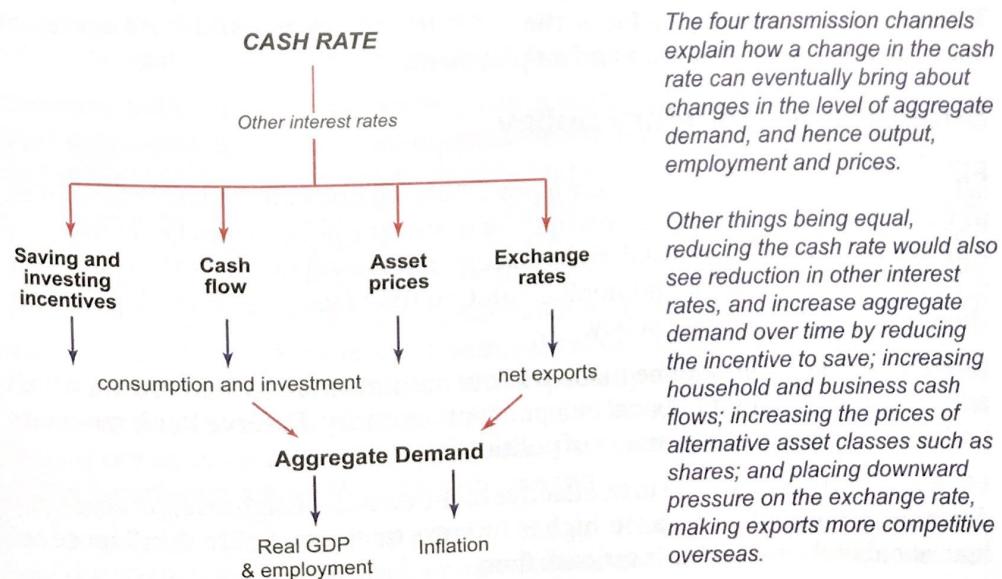
As illustrated in figure 13.5, changing interest rates flow through to aggregate demand because they influence:

- incentives for decisions to save, borrow or invest;
- the cash flow of households and firms;
- asset prices and perceived wealth; and
- the exchange rate.

We will follow these transmission channels, assuming once again that the monetary policy stance is contractionary (see figure 13.6).

Firstly, changes in interest rates have important effects on households' decisions to save or borrow, and firms' decisions to invest. Rising interest rates increase the incentive to save because higher rates deliver higher interest payments. Higher rates also increase the opportunity cost of spending – if it chooses to spend, a household forgoes the opportunity to save surplus funds in an interest-earning

**Figure 13.5 The transmission mechanism**



deposit. Businesses often borrow to invest, so a rise in interest rates will reduce the demand for business loans because of a lower potential return on investment.

Another way to understand the transmission is to understand how higher rates affect the cash flow of households and firms. Households that are 'net savers' will benefit from higher interest payments, whereas 'net borrowers' will have to meet larger monthly repayments on their loans. Most firms are net borrowers, so rate increases leave less free cash to pay expenses, expand production or increase employment.

Rising interest rates make the ownership of alternative financial assets such as shares and property seem less attractive because the relative returns of those assets declines. If asset prices decline, or rise at a slower rate, so does the 'on-paper' wealth of households with property holdings and/or share portfolios. The perception of falling wealth tends to lead to a fall in household discretionary spending (a negative wealth effect), and could reduce the equity households can offer when approaching a bank for a loan.

As discussed in chapters 6 and 7, changes in interest rates impact on exchange rates, because financial capital is highly mobile. If Australian rates are above overseas rates, capital inflow will increase demand for the currency and lead to an appreciation of the AUD. Other things being equal, a higher dollar will reduce aggregate demand because:

- the competitiveness of exports in overseas markets suffers as overseas residents pay more for the products they buy;
- imports become cheaper for Australian households; and
- import-competing firms in Australia have to compete with those cheaper imports.

The four transmission channels explain how the two panels in figure 13.6 work. Tighter monetary policy reduces the pressure on prices, and cuts aggregate demand, and therefore output and employment.

## Strengths of monetary policy

Changes in policy interest rates are a powerful influence on the level of spending in the economy. The greatest strength of monetary policy is its flexibility. The RBA Board meets on a monthly basis (except in January) to assess the state of the economy, so the decision and implementation time lags for monetary policy are short compared with fiscal policy.

Interest rate decisions can be made without authorisation by Parliament, which adds to policy flexibility. As an independent authority, Reserve Bank monetary policy decisions are independent of political bias.

Monetary policy has proven to be effective in the control of high levels of aggregate demand and inflation because higher interest rates are a direct influence on household budgets and business cash flow.

Another strength relates to the important link between interest rates and the exchange rate. Changes in interest rates affect the interest rate differential with other countries, which affects movements in financial capital. A cut in interest rates, for example, will lead to a fall in capital inflow. This will reduce the demand for the currency and lead to depreciation. Net exports will be stimulated as prices fall on overseas markets, and imports should fall as prices rise. Thus an expansionary monetary policy (reducing interest rates) will not only increase consumption and investment, but also increase net exports. The effect of monetary policy on net exports, via the exchange rate, is an important part of the transmission chain.

Finally, the transmission routes for monetary policy are a little different than they are for fiscal policy. Interest rates affect every sector of the economy, and people tend not to see the policy as particularly aimed 'at them'.

### Weaknesses of monetary policy

Both fiscal and monetary policy suffer from time lags:

- the recognition lag – the time taken to recognize trends;
- the decision lag – the time taken to make a policy decision; and
- the action or effect lag – the time taken for policy decisions to have an effect on aggregate demand and the economy.

The recognition and decision lags are relatively short because the RBA Board meets monthly and its decisions are informed by recent data and information gained from interviews with business. The effect lag, however, is thought to be quite long, because the transmission chain from the policy to the impact on aggregate demand is indirect – through other interest rates and then the saving/borrowing incentive, cash flow, asset price and exchange rate channels. Fiscal policy works more directly as changes in government spending or taxation can affect aggregate demand as soon as policy is passed into law.

Monetary policy is less effective in a contraction or trough – low interest rates don't seem sufficient to stimulate private spending when economic conditions are pessimistic. Economists liken expansionary monetary policy to 'pushing on a piece of string'. Two of the four transmission mechanism channels are responsible for this weakness. Businesses don't necessarily react to lower costs of borrowing if they are not confident about economic prospects when aggregate demand is low. This explanation is pertinent to the Australian case in recent years. Investment was low despite record low interest rates. Likewise, asset prices are influenced by many factors apart from the interest rate, especially expected future income that can be earned from an asset. This is influenced by confidence about the future. During the early months of the pandemic, fiscal policy did more of the 'heavy lifting' required to stimulate aggregate demand.

Monetary policy is regarded as a 'blunt' policy instrument. Unlike fiscal policy, monetary policy cannot be used selectively to target particular groups or sectors

in the economy. Changes in interest rates affect all sectors of the economy right across the country. The Reserve Bank cannot raise interest rates in Western Australia to curb a booming economy, yet leave rates unchanged in the rest of Australia. Similarly, the Bank cannot exclude a particular sector such as the car industry from a rise in interest rates. Monetary policy is a 'one size fits all' type of policy. Falling rates are bad for net savers such as retirees, but good for borrowers.

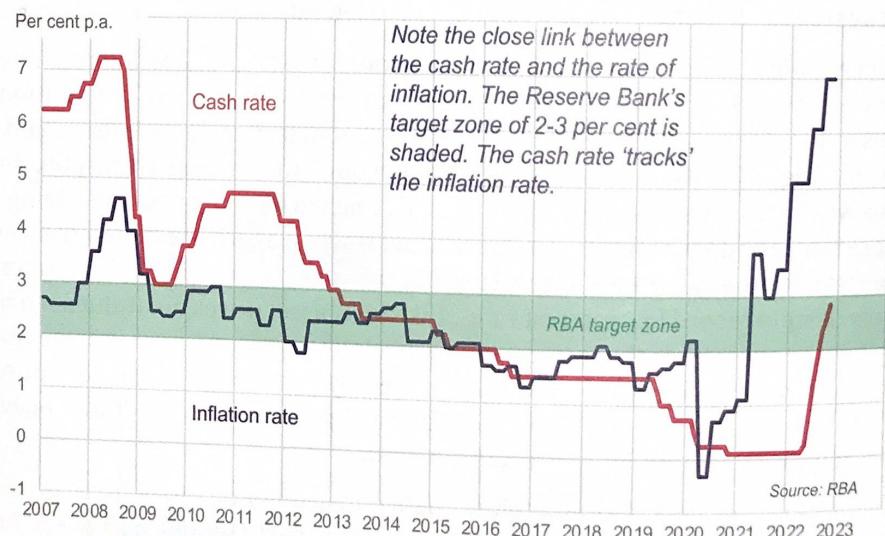
### Recent monetary policy in Australia

This section reviews Australian monetary policy in recent years, starting with the Global Financial Crisis (GFC). As illustrated in figure 13.7, the strong economy and inflationary pressure had driven cash rates to 7.25 per cent by August, 2008. The rapid onset of the GFC saw the RBA cut cash rates from 7.25 per cent to 3 per cent over just nine months in 2008–09. The continuing mining boom helped economic recovery after the GFC, and cash rates started to rise again in mid-2009, reaching 4.75 per cent in late 2010.

Economic growth through most of the 2010s was sluggish, and inflation was at the lower end of the RBA target range. The target cash rate fell below three per cent in 2013, then below two percent in 2016, and below one percent in July 2019 (see figures 13.4 and 13.7). At this point the real policy rate was negative. Despite monetary stimulus, growth remained low. RBA monetary policy media releases from 2014–2019 mentioned consistent themes: moderate growth; spare capacity; and the need for interest rates to support aggregate demand.

In theory, lower interest rates over this period would have been an incentive for household and business borrowing, and a disincentive for saving which, other things being equal, would have flowed through to stronger economic activity

**Figure 13.7 The cash rate and inflation**



as rising prices and wages. In practice, however, expansionary monetary policy was impotent. Is there an explanation? Why doesn't the economy work the way textbooks predict?

One possible reason is the existing level of debt in the private sector. In common with other countries, Australian households increased their borrowing from the mid-1990s to the mid-2000s: real interest rates were attractive, there was easy access to finance, and booming property prices held the prospect of capital gains. Over the decade, the household savings rate fell and indebtedness increased. Household debt trebled from about 40 to 120 per cent of GDP over a fifteen year period, and the average mortgage debt reached the mid \$300,000s. Australia's 'debt preference' changed significantly with the onset of the GFC, however. The crisis and associated uncertainty saw households and businesses take on less risk and pay down their debts, often cutting spending in other areas.

A second reason why low rates did not stimulate economic activity relates to wages and earnings. Wage growth over the decade was subdued, even as the official unemployment rate approached its natural rate, when we would usually expect rising demand for labour to bid up its price. Australians do not appear to be changing jobs as much as they did, perhaps feeling some degree of 'employment uncertainty'. Although the official unemployment rate was low for much of the period (4.5 to 5.5 percent), underemployment was high. Excess capacity in the labour market meant that firms were able to find workers and that those in a job were less likely to bargain for wage rises.

Thirdly, Australia's exchange rate was comparatively high over the early part of the decade, driven by the terms of trade (high commodity prices) and higher interest rates than other countries (causing capital inflow). A high AUD helps importers, but makes exports less competitive on world markets. In Australia's case, this may have counteracted low interest rates and slowed growth.

Just prior to the pandemic, financial markets became subject to tighter credit controls. In late 2019, the Royal Commission into the Banking, Superannuation and Financial Services Industry recommended greater prudence in bank lending practices. This meant loans were more difficult to obtain and potential borrowers had to be 'better qualified' – not only having higher deposits, but able to satisfy proof of income and spending. Prospective borrowers are now required to pass a 'stress test' that shows they would be able to afford mortgage repayments if interest rates rose by three per cent in the medium term!

Finally, continued low interest rates act as a signal to businesses and households that the economy is not doing well. The incentive to borrow at low rates may be counterbalanced by perceived higher risks and uncertainty. Economic conditions appeared to improve globally during 2019, with higher growth rates, small rises in inflation and increased industrial production. Indeed, in February 2020 the Governor of the RBA, Phillip Lowe, stated that the Australian economy had reached a gentle turning point, with growth expected to pick up from an average rate of 2 per cent over 2018-19 to 2.75 per cent in 2020 and 3 per cent in 2021.

The disruptions associated with the COVID-19 pandemic ended that possibility! After some initial uncertainty about the impact of the virus on the economy, the RBA announced further expansionary policy measures in March, 2020. Firstly, the conventional instrument of monetary policy (the cash rate) was reduced from 0.75 to 0.1 per cent – a record low for Australia. Secondly, for the first time, the RBA introduced elements of ‘unconventional’ monetary policy.

## Unconventional monetary policy

In March 2020, the RBA announced that it would commence using other instruments, in addition to the cash rate, “to lower funding costs and support the supply of credit” (RBA, 2020). The instruments introduced were:

- quantitative easing (QE);
- a term funding facility to deposit-taking institutions (TFF);
- forward guidance; and
- changes to interest rates on exchange settlement accounts by authorised deposit-taking institutions (ADIs).

Governments issue (sell) bonds to finance their spending, especially when growth is slow and the budget is in deficit. Government bonds are a ‘defensive asset’, typically purchased by investors and institutions seeking security, capital preservation and regular returns. They balance the riskier asset classes, like shares and property.

In Australia’s case, quantitative easing (QE) referred to RBA purchases of assets (mainly government bonds) on the ‘secondary market’. This increased the demand for bonds, and thus their price. But when the price of a bond rises, its effective yield falls, which is why QE supports lower interest rates (see box). From March to September, 2020, the RBA purchased \$63 billion worth of bonds, targeting their price in order to achieve a target rate (yield) of around 0.25 per cent on 3-year Australian Government Securities (AGS) – the same as the cash rate at the time. In buying government bonds from banks and pension funds the RBA was effectively pumping cash into the economy. It is important to realise, however that bond buying did not mean the RBA was printing money, or financing the government deficit, because the bond purchases were made on the secondary market and normal conventions still applied – the issuer of the bonds (the government) must make interest payments to bondholders, and repay the bonds in full at maturity (between 3 and 10 years).

The RBA also announced a \$90 Bn Term Funding Facility (TFF). This facility provided three-year funding for approved deposit-taking institutions such as banks at a fixed interest rate the same as the cash rate (then 0.25 per cent, later 0.1 per cent). The objective was to provide financial institutions with greater confidence about their access to funding, and to lower their funding costs, which could be passed on as lower household and business borrowing costs. The facility closed to new drawdowns on 30 June 2021.

Other unconventional policy measures could have been used by the Reserve Bank. The cash rate could have been set below zero – a negative interest rate. At some level, however, negative interest rates would encourage people to withdraw their money from deposit-taking institutions, which is the opposite of what is required if households and firms need those institutions to create credit.

The point of applying these unconventional instruments was to stabilise the financial system during the pandemic by ensuring access to funding and reducing its costs.

At its November 2020 Board meeting, the RBA lowered the cash rate to from 0.25 per cent to 0.1 per cent, and extended QE by targeting the quantity of bonds it would purchase – announcing a plan to buy \$100 billion of longer-dated (5-10 year maturity) Commonwealth and State government bonds over a six month period. The Board announced its expectation that the new lower level of interest rates would be in place for an extended period (three years) and that it would not increase the cash rate until actual inflation was within the 2-3 per cent target range, with evidence of wage growth and a ‘tighter’ labour market.

Although the pandemic was the first time in which unconventional measures have been used in Australia, other countries had previously adopted such measures. The Bank of Japan adopted quantitative easing in 2001. In the United States, the Federal Reserve injected over \$US 2 trillion over three rounds of QE during the GFC (lasting until 2014). Similarly, the Bank of England had several rounds of QE, most recently to address uncertainty over Brexit in 2017.

### **Policy tightens in recovery - 2022.**

In 2022, pressures on the price level emerged and the inflation rate rose to a level

#### **Bond prices and yields – the mechanics of Quantitative Easing.**

Consider an investor held \$100,000 worth of November 2026 Treasury Bonds on which the coupon payment (interest rate payable until maturity) is 1%, or \$1000 every year. The bond-holder thus receives regular income payments, and the initial investment is returned in 2026.

The objective of the bond purchase program (QE) was to support lower interest rates across the board. To do so, the RBA entered the secondary bond market, which increased demand and drove up the prices that bondholders would receive if they sold. Perhaps our bondholder could get \$105,000 – a capital gain! The new owner, in this case the RBA, would then receive the \$1000 coupon until maturity. But now the coupon payment is a lower proportion of the purchase price ( $\$1000 / \$105,000 = 0.0095$  or 0.95%). The effective rate of return (or yield) in the bond market has now fallen by 5 ‘basis points’.

Because the RBA bought large numbers of bonds, they were able to lower effective yields to the cash rate, and ensure there was ample ‘cheap money’ to help the economy recover from the COVID period. Over nearly two years, the RBA bought over \$280 Bn of government bonds of various maturity dates. The ‘forward guidance’ aspect of policy was to ensure the market that the bond buying would continue as long as necessary – initially the RBA specified 2024, but in fact the bond purchase program ceased in February 2022.

**Monetary Policy Decision, May 2022**

At its meeting today, the Board decided to increase the cash rate target by 25 basis points to 35 basis points. The Board judged that now was the right time to begin withdrawing some of the extraordinary monetary support that was put in place to help the Australian economy during the pandemic. The economy has proven to be resilient and inflation has picked up more quickly, and to a higher level, than was expected. There is also evidence that wages growth is picking up. Given this, and the very low level of interest rates, it is appropriate to start the process of normalising monetary conditions.

The resilience of the Australian economy is particularly evident in the labour market, with the unemployment rate declining over recent months to 4 per cent and labour force participation increasing to a record high. Both job vacancies and job ads are also at high levels. The central forecast is for the unemployment rate to decline to around 3½ per cent by early 2023 and remain around this level thereafter. This would be the lowest rate of unemployment in almost 50 years.

The outlook for economic growth in Australia also remains positive, although there are ongoing uncertainties about the global economy arising from: the ongoing disruptions from COVID-19, especially in China; the war in Ukraine; and declining consumer purchasing power from higher inflation. The central forecast is for Australian GDP to grow by 4½ per cent over 2022 and 2 per cent over 2023. Household and business balance sheets are generally in good shape, an upswing in business investment is underway and there is a large pipeline of construction work to be completed. Macroeconomic policy settings remain supportive of growth and national income is being boosted by higher commodity prices.

Inflation has picked up significantly and by more than expected, although it remains lower than in most other advanced economies. Over the year to the March quarter, headline inflation was 5.1 per cent and in underlying terms inflation was 3.7 per cent. This rise in inflation largely reflects global factors. But domestic capacity constraints are increasingly playing a role and inflation pressures have broadened, with firms more prepared to pass through cost increases to consumer prices. A further rise in inflation is expected in the near term, but as supply-side disruptions are resolved, inflation is expected to decline back towards the target range of 2 to 3 per cent. The central forecast for 2022 is for headline inflation of around 6 per cent and underlying inflation of around 4¾ per cent; by mid 2024, headline and underlying inflation are forecast to have moderated to around 3 per cent. These forecasts are based on an assumption of further increases in interest rates.

*Source: RBA Monetary Policy media release, 3 May 2022 (excerpt)*

above the RBA target zone (see the extract from the May 2022 RBA Board meeting announcement above). A number of factors contributed to inflationary pressures. The pandemic brought interruptions to supply chains, so firms' costs of production rose and delivery times were pushed out. China continued to impose lockdowns in cities affected by COVID as at late 2022. Recovery from the pandemic released the savings that people had been unable to spend, so there was growth in demand globally, supported by the stimulatory fiscal and monetary policies that had been in place around the world. The invasion of Ukraine by Russia caused significant disruptions in global markets (especially in Europe) for energy and food.

In Australia, the cash rate rose from 0.1 per cent in April 2022 to 2.85 per cent (as at November, 2022). This was a historically rapid rise in the rate, but in line with others around the world as central banks seek to control inflation (see sidebar).

The RBA announced that the cash rate is again the main element of monetary policy. The Bank ceased its bond purchasing program in early 2022, and announced it would allow its bond holdings to expire at maturity, rather than selling them on the secondary market. The RBA also announced it was watching for signs

of increasing wage pressures that should emerge as recovery from the pandemic has driven the unemployment rate to 3.4 percent – a level not seen in sixty years. The tight labour market is complicated by the fact that there are still fewer arrivals of foreign workers.

Central Bank	Country	Policy rate November 2020 (% p.a.)	Policy rate November 2022 (% p.a.)
Federal Reserve	USA	0.25	4.00
Bank of England	Great Britain	0.10	2.25
Peoples' Bank of China	China	3.85	3.65
Bank of Canada	Canada	0.25	3.75
European Central Bank	Europe	0.00	1.25
Bank of Japan	Japan	-0.10	-0.10
Swiss National Bank	Switzerland	-0.75	0.50

Source: [global-rates.com](http://global-rates.com) and RBA Accessed November, 2022

### Worksheet

Read the chapter to answer the following questions.

- Outline the role of the financial sector.
- Explain why a stable financial system is important to the economy.
- What do interest rates represent? What is the cash rate?
- Distinguish between nominal and real interest rates.
- List the three objectives of monetary policy.
- Distinguish between the headline and the underlying rate of inflation.
- Explain the meaning of an 'expansionary stance' in monetary policy.
- Briefly describe the four channels in the monetary transmission mechanism.
- Explain the influence that changing interest rates have on the AUD exchange rate.
- List three key strengths, and three weaknesses, of monetary policy.
- Provide three reasons why low interest rates may have failed to lift economic activity in Australia over the past few years.
- Why was quantitative easing (QE) used during the COVID pandemic period?
- Suggest three reasons why inflation pressures emerged in 2021-2022.
- Why does rising inflation put upward pressure on interest rates?
- Interest rates on Australian home mortgages increased from about 2% to 6% over the course of 2022. How would this increase affect aggregate household consumption.

### Data Interpretation

Refer to the table over, which shows economic indicators for a hypothetical economy over a three year period. Q1 refers to the first quarter of a year.

- Prepare a graph which compares and contrasts the cash rate, economic growth rate, unemployment rate and inflation rate for the 12-quarter period shown. Choose the scale and type of graph carefully. Suggest reasons for any relationships you note between the rates graphed. Describe the general 'state of the economy' over the three-year period.
- The cash rate column has not been completed for the last year of the period. Suggest the monetary policy stance that should have been adopted by the central bank of this hypothetical country (assume it follows an inflation-targeting regime for setting policy).

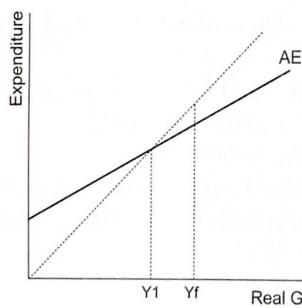
Prepare a media release which explains the policy stance the bank has undertaken in either the first quarter of Year 2, or the final quarter of Year 3. For your chosen quarter, describe economic conditions, then explain how the monetary policy stance would be expected to impact on levels of economic activity, prices and employment in subsequent periods.

Year	Real GDP % change Y on Y	Headline inflation rate %	Unemployment rate %	Index of industrial activity	Terms of trade index	Cash rate %
Q1, Year 1	3.0	3.3	5.7	112	100.9	3.25
Q2, Year 1	2.8	3.0	6.0	106	96.0	3.25
Q3, Year 1	2.6	2.6	6.2	100	92.9	3.00
Q4, Year 1	2.3	1.8	6.2	95	91.5	3.00
Q1, Year 2	2.3	1.5	6.2	92	89.1	2.25
Q2, Year 2	2.0	1.5	6.3	90	85.1	2.00
Q3, Year 2	2.6	1.3	6.8	85	83.0	2.00
Q4, Year 2	2.8	1.7	6.7	91	80.3	1.75
Q1, Year 3	3.0	1.3	6.4	94	78.6	
Q2, Year 3	3.1	1.0	6.1	96	80.5	
Q3, Year 3	3.3	1.9	5.9	104	83.7	
Q4, Year 3	3.5	2.9	5.6	109	88.0	

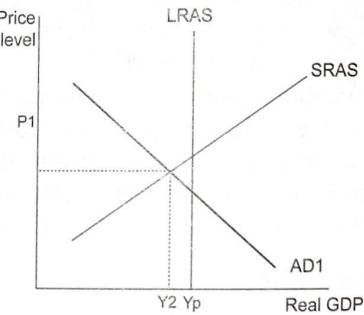
### Monetary policy

Refer to the diagram below. In panel A (aggregate expenditure model) the economy is initially located at income level  $Y_1$ , the full employment level is  $Y_f$ . In Panel B (AD/AS model) the economy is in short run equilibrium at income  $Y_2$ , potential GDP is given by  $Y_p$ .

a. Aggregate expenditure model



b. AD/AS model



- In panel a, if the economy is at income level  $Y_1$ , what problem is the economy experiencing? What type of monetary policy should the Reserve Bank employ: tight or easy? What would be the impact of this policy on the aggregate expenditure curve? Explain the effect on real GDP and employment.
- In Panel b describe the position of the economy at income level  $Y_2$ . Is the economy in a deflationary or inflationary gap? Would inflation or unemployment be a bigger problem in this economy? What type of monetary policy should the Reserve Bank employ, and how will that policy impact on the economy?
- Use the diagram in panel b to explain the effect of the Reserve Bank's policy. Which curve will shift and in which direction?
- Describe how an increase in the cash rate would be transmitted to the level of aggregate demands.
- Is monetary policy more powerful when the economy is in a boom or in a trough of the business cycle. Why?

**RBA media release**

Refer to the extract from the October, 2022 monetary policy media release below. The full release can be found on the RBA web site.

**Monetary Policy Decision, October 2022**

At its meeting today, the Board decided to increase the cash rate target by 25 basis points to 2.60 per cent.

The Board is committed to returning inflation to the 2–3 per cent range over time. Today's increase in interest rates will help achieve this goal and further increases are likely to be required over the period ahead. The cash rate has been increased substantially in a short period of time. Reflecting this, the Board decided to increase the cash rate by 25 basis points this month as it assesses the outlook for inflation and economic growth in Australia.

As is the case in most countries, inflation in Australia is too high. Global factors explain much of this high inflation, but strong domestic demand relative to the ability of the economy to meet that demand is also playing a role.

A further increase in inflation is expected over the months ahead, before inflation then declines back towards the 2–3 per cent range. The expected moderation in inflation next year reflects the ongoing resolution of global supply-side problems, recent declines in some commodity prices and the impact of rising interest rates. Medium-term inflation expectations remain well anchored, and it is important that this remains the case. The Bank's central forecast is for CPI inflation to be around 7½ per cent over 2022, a little above 4 per cent over 2023 and around 3 per cent over 2024.

The Australian economy is continuing to grow solidly and national income is being boosted by a record level of the terms of trade. The labour market is very tight and many firms are having difficulty hiring workers. The unemployment rate in August was 3.5 per cent, around the lowest rate in almost 50 years. Job vacancies and job ads are both at very high levels, suggesting a further decline in the unemployment rate over the months ahead. Beyond that, some increase in the unemployment rate is expected as economic growth slows.

Source: RBA Monetary Policy media release, 4 October 2022 (excerpt)

1. Explain why the RBA Board decided to increase the cash rate target by 25 basis points. When the decision was announced, the Australian stock market's main indicators such as the All-Ordinaries Index rose. Is this what you would expect? Why might the market have reacted as it did?
2. What is the Bank's forecast for CPI inflation in 2023 and 2024. Why is inflation expected to "moderate" over that period?
3. Write a short article for your local newspaper to summarise the change in the cash rate, the reasons behind the decision, and the possibly impact on households and businesses in your local economy.
4. In the second paragraph, the Bank states that "further increases are likely to be required over the period ahead". What message is this statement sending to 'the markets'?
5. Use an AD/AS model to show how the policy announced in the media release would impact on economic activity, prices and labour market. Make sure your 'starting point' (which you might label as Y<sub>1</sub>) reflects economic conditions at the time.
6. Read two or three monetary policy media releases from the RBA web site. Outline the features that they have in common. Note: further policy details can be found in the Monetary Policy Minutes for each month.

**Multiple choice**

Choose the best alternative in the following questions.

The Reserve Bank of Australia is responsible for

1. The Reserve Bank of Australia is responsible for
  - a. controlling the cash rate and the inflation rate.
  - b. administering both monetary policy and fiscal policy.
  - c. controlling the cash rate and the exchange rate.
  - d. administering monetary policy and maintaining financial stability.
  
2. If the rate of interest on bank loans is 3%, the expected rate of inflation is 2%, and the economic growth rate is 2.5%, then the real rate of interest on bank loans is
  - a. -0.5%
  - b. 0.5%
  - c. 1%
  - d. 5%
  
3. According to the Reserve Bank Act, what are the Reserve Bank of Australia's main monetary policy objectives?
  - a. Price stability and full employment.
  - b. Price stability and a reduction in national debt.
  - c. Full employment and an increase in national savings.
  - d. Low inflation and a high rate of economic growth.
  
4. Conventional monetary policy is conducted using:
  - a. government spending.
  - b. quantitative easing (QE).
  - c. the cash rate.
  - d. the 90 day bank bill rate.
  
5. In recent years, low interest rates have failed to stimulate the economy and increase the rate of inflation. This is most likely because:
  - a. tighter credit controls were introduced after the Hayne Royal Commission.
  - b. households and businesses have become more risk averse.
  - c. consumers do not react very much to interest rate increases.
  - d. households and businesses have taken on more risk.
  
6. Contractionary monetary policy is most likely to be used when:
  - a. inflation is high, unemployment is low and consumer spending is high.
  - b. inflation is low, unemployment is high and consumer spending is low.
  - c. inflation is high, unemployment is high and consumer spending is low.
  - d. inflation is low, unemployment is low and consumer spending is high.
  
7. If economic indicators suggest that output is lower than full employment output, \_\_\_\_\_ monetary policy could be used to \_\_\_\_\_ aggregate demand and \_\_\_\_\_ unemployment.
  - a. expansionary; decrease; increase.
  - b. contractionary; decrease; increase.
  - c. expansionary; increase; decrease.
  - d. contractionary; increase; decrease.
  
8. The economy is experiencing inflation and the Reserve Bank decides to pursue a tighter monetary policy. Which set of actions would be most consistent with this policy?
  - a. Creating a shortage of funds in the cash market to lower the cash rate.
  - b. Creating a shortage of funds in the cash market to raise the cash rate.
  - c. Creating a surplus of funds in the cash market to lower the cash rate.
  - d. Creating a surplus of funds in the cash market to raise the cash rate.

9. A newspaper headline reads "RBA cuts rates for the 2nd time this year." This indicates that the Reserve Bank is most likely trying to
- increase the value of the Australian dollar.
  - reduce inflationary pressures in the economy.
  - stimulate the economy.
  - slow the rate of economic growth.
10. Suppose the Reserve Bank lowers the cash rate. Arrange the following events in the order which they will occur:
- short-term interest rates fall.
  - unemployment rate falls.
  - household cash flow increases.
  - aggregate demand increases.
- i – ii – iii – iv
  - iv – iii – ii – i
  - i – iii – iv – ii
  - i – iv – iii – ii
11. One type of unconventional monetary policy is quantitative easing (QE). In Australia, QE featured the RBA:
- selling government bonds to soak up excess cash in financial markets.
  - buying bonds in the secondary market, resulting in lower yields on those bonds.
  - printing money to encourage household spending.
  - buying bonds in the secondary market, resulting in lower prices but higher yields on those bonds.
12. Over a period of a few months, a decrease in the cash rate by the RBA would most likely cause:
- a rise in business investment and the unemployment rate.
  - a decrease in household spending on durable goods.
  - a fall in the headline rate of inflation.
  - a rise in household spending and business investment.
13. An increase in the cash rate is likely to lead to:
- a decrease in aggregate demand and a rise in asset prices.
  - a decrease in aggregate demand and a depreciation of the exchange rate.
  - an increase in aggregate demand and an increase in asset prices.
  - a decrease in aggregate demand and an appreciation of the exchange rate.
14. Monetary policy is said to suffer from a relatively long effect lag. This refers to the fact that:
- it takes time for changes in the cash rate to change aggregate demand.
  - changes in the cash rate can only be made at the RBA Board meetings.
  - the RBA Board will only make changes to the cash rate after trends in the economy have become evident.
  - the publishing of economic statistics often lags behind real trends in the economy.
15. Which of the following policy time lags is typically longer for monetary policy than for fiscal policy?
- Impact lag.
  - Recognition lag.
  - Decision-making lag.
  - Implementation lag.

**Extended responses**

Each of the following questions should be answered in 2-3 pages of writing. Include diagrams and examples where appropriate. Pay attention to the allocation of marks when writing your answer.

1. a. Define monetary policy and discuss its three economic objectives. [5 marks]
- b. Using an AD/AS model, explain how expansionary monetary policy effects output, employment and price levels. [15 marks]
2. Explain why the Reserve Bank would undertake contractionary monetary policy, and discuss the channels through which the policy would impact on economy. [20 marks]
3. a. Explain how the Reserve Bank of Australia (RBA) used conventional and unconventional monetary policy to stimulate economic activity in the pandemic period. [15 marks]
- b. Explain why expansionary monetary policy may not successfully meet the objectives of central bank policy-makers. [5 marks]
4. Discuss the strengths and weaknesses of monetary policy. [20 marks]