

Basic Function of Financial Sector

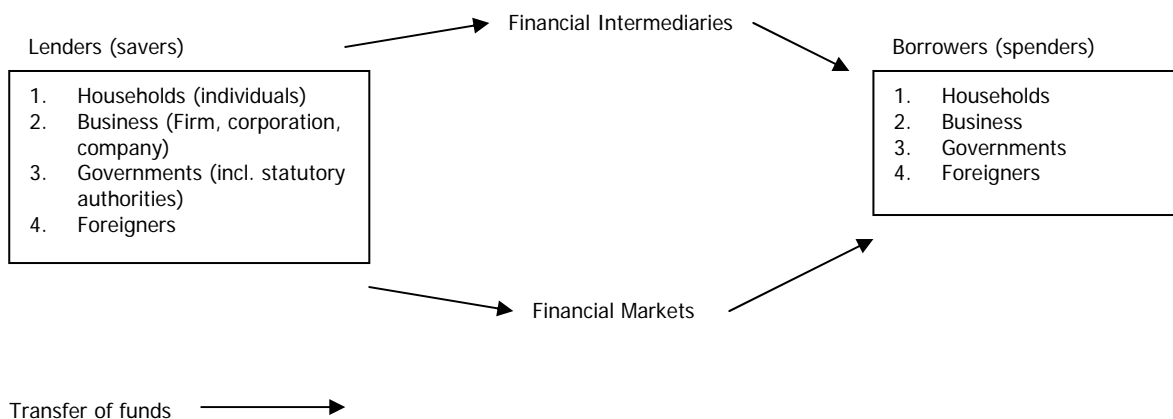
- To channel funds from economic units with surplus funds to those that have a shortage of funds

Economic units include:

- Consumers
- Firms
- Government

Involvement in economic activity

Diagram: Flow of funds in the Financial System



When a government has a surplus budget, it has surplus funds because it spent less than it received in income. It is used to curb inflationary pressures by contraction; however, the people want better infrastructure for our money. The government, to create a surplus budget, must either reduce spending or increase taxation.

When a government has a deficit budget, it spends more than it receives. This is stimulatory (e.g. used in a depression or a recession).

Types and Roles of Financial Markets

Investment is about increasing productive capacity, now and in the future. Consumers are increasingly purchasing goods and services on credit – using others' savings.

Direct Finance

This involves savers, sometimes using financial agents, directly lending money to those who will spend it. For example, someone who has \$100,000 buys shares in a company, whether using a stockbroker (agent) or not, or someone directly lending a friend \$10,000 to expand his business.

Indirect Finance

This is where savers and borrowers use **intermediaries** and do not directly deal with each other. **Intermediaries** are banks, insurance companies, credit unions, and superannuation funds. Most saving and borrowing is indirect.

This system is convenient, reduces risk and allows even minor savers and borrowers to participate. Banks are now less attractive, due to low returns on savings. Everyone is pretty much involved in this market, reflecting society's increasing affluence.

Note: Life assurance (positive) – you will reach a certain age or die; this event is going to happen.
Life insurance (negative) – hope that you will not die.

Primary Market

- Where initial financial capital is raised by businesses and governments
- Government issued bonds (short term or long term), treasury notes, instruments like shares and debentures

Secondary Market

- Where existing financial securities are bought and sold, e.g. most transactions on the stock exchange.
- Note: When buying shares, you hope that the price will go up (speculative motive), or the actual return from profitability of the company will rise

The Derivatives Market

- Where financial products are derived from primary and secondary markets (futures, swaps, options)
- Speculative: particularly in mining and IT

Debt Instruments

- Include: Mortgages, loans, bonds, notes, bills

Borrowers are governments, businesses and consumers. They issue these instruments in return for which savers (individuals, businesses, governments) exchange their money. The borrowers use those funds for their businesses (investment) or consumption by households.

Equity Markets

- Shares (part ownership) of companies sold to savers
- In this way, firms raise financial capital to operate their businesses

(Table 10.2)

Foreign Exchange Market

- Trade currencies
- Normal international trade
- Exists so that international commerce can exist
- 97% of exchange is speculative
- Has the potential to wreck economies

Regulatory Authorities

(Figure 10.3)

Reserve Bank of Australia (RBA)

- Conducts monetary policy
 - Level of money in the economy affects the level of economic activity
 - It aims to avoid economic fluctuations
- This is done through the manipulation of interest rates
- Tighten monetary policy – increase interest rates
- Loosen monetary policy – reduce interest rates
 - Encourages firms to borrow for investment, and consumers to spend
- Statutory Reserve Deposits – can dampen down the economy
 - Banks cannot lend this out
- Maintenance of financial stability (lender of last resort)
- Government, through the RBA, guarantees depositors
- Maintain the integrity of the payments system through the Payments System Board

The Australian Prudential Regulation Authority (APRA)

- Regulates deposit taking institutions (DTIs) such as banks and NBFIs
- Why? To protect the depositors – so they don't lose their savings, which would undermine the stability of, and confidence in, the financial system

Australian Securities and Investments Commission (ASIC)

- Across the financial system, it is responsible for:
 - Market integrity
 - Consumer protection
 - Dispute resolution

Market integrity – e.g. insider trading; tries to ensure a fair market

Deals with:

- Investments (e.g. shares)
- Futures (a derivative)
- Insurance
- Superannuation

Note: a future is a hedge against a loss in the future

Factors Affecting the Demand and Supply of Funds

Demand motives (why individuals and other economic units want funds)

- Transactionary
 - Precautionary
 - Speculative
- } Why we don't save much

Transactionary – to buy goods and services for consumption; finance resources – investment, workers; a government would fund goods and services they provide to the community

Precautionary – Save in the case of a calamity. In Australia, this is not a major motive for saving, as social security net is quite generous.

Speculative – defer consumption to make the money work for them (and earn more). Consumers: investment; firms: accumulated surplus funds can cover expenses and operations if there is a downturn; government: a surplus budget is put towards reserve funds

Note: Friendly societies were set up in an attempt to provide their own social security, and live on today in health insurance, credit unions

These motives are influenced by many factors:

- *State of the economy* – If wages, profits and taxes are high: there will be a high demand for income for transactionary activities.
 - Income rises: transactionary demand for funds rises
 - Economy falls: people lose jobs ...
- *Economic growth*
 - Higher economic growth – encourages entrepreneurial activity, for people to get money
 - Lower economic growth – disincentive for people to spend money
- *Change in real income*
 - Affected by first two factors + inflation
 - Incentive for people to spend on goods and services
- *Investment*
- *Expectations*
 - Can include psychological factors – e.g. Bush talking up the economy
- *Rate of interest*
 - Change of purchasing power and demand for purchasing power by the RBA

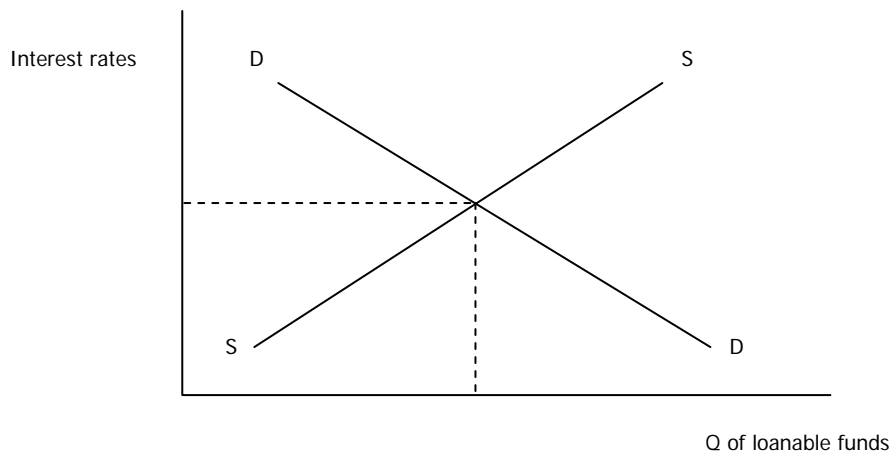
Note: Demand for funds is interest elastic

If interest rates rise, the drop in demand for funds will be more than proportionate. If interest rates fall, the rise in demand for funds will be more than proportionate.

Supply of funds depends on:

- Households savings ratio (low in Australia)
- Money supply growth
- Corporate profitability

- Government budget position (whether in deficit or in surplus)
 - Access to world financial markets
1. Low level of saving – puts at risk future investment (in Japan, the savings level is too high)
 - Save less – we use more credit cards
 - It is a structural problem
 2. Money from income, business profits
 3. If businesses are more profitable \therefore more funds for everyone
 4. Government deficit – short to medium term securities that private individuals buy
 - Surplus funds – soak up excess liquidity
 5. Speed at which fund can be moved around the world



Financial Changes and Innovations

- 1983: Deregulation of financial sector
 - RBA ceased overseeing banks' lending policies and interest rates
 - Exchange rate floated (Value determined purely by market forces; before, it was permanently fixed against the British pound)
 - Foreign Banks (16) given licences to operate in competition with Australian banks
- Innovations – Technological changes
 - ATMs (Automatic Teller Machines)
 - EFTPOS (Electronic Funds Transfer at Point of Sale)
 - Expansion of Credit Cards
 - Wide range of financial products offered by banks
 - Superannuation
 - Brokerage (ASX)
 - Insurance
 - Increase in telephone and Internet banking
 - Reduction in branches and over-the-counter services
 - Global spread of electronic commerce

Borrowers in the Debt Market

- Individuals, firms and governments
- Includes all borrowings, usually at a fixed rate of interest (but could be variable)
- Such interest payments are a taxable deduction for business
- Interest rate depends on:
 - Risk
 - Term (length of loan)
 - Amount of funds borrowed
 - Security provided (if any)

Debt Instruments

These are contracts between the borrower and the holder (lender) to pay fixed amounts at regular intervals with a specified date (the maturity date) when final payments (interest + face value) are made.

Short-term instruments are usually 3 months to 12 months or “at call” (can be cashed in immediately). Long-term: 12 months plus; 2, 3, 5, 10 years to maturity

Individual Debt Instruments

For Individuals

- Mortgage loans (e.g. houses)
- Personal loans for private consumption
- Overdrafts
- Credit cards

For Business

- *Overdraft loans* – a firm can withdraw funds from a cheque account up to an agreed upper limit – a common business facility
- *Business loans* – small/large, usually secured by business’ or owners’ assets, mortgaged loans
- *Debentures/Notes* – issued by larger companies, generating a fixed rate of interest – debentures secured by a company’s assets, notes unsecured (higher interest)
- *Commercial Bills/Promissory Notes* – short term, issued by corporations
- *Leasing loans* – used to purchase some common forms of capital, e.g. motor vehicles, office equipment
- *Bills of exchange* – similar to commercial bills
- *Certificates of deposit* – sold by a bank to depositors (fixed deposits)
- *Corporate bonds* – issued by large, successful companies, banks and NBFIs
- *Convertible bonds* – debt instruments, but may be possible (the *option*) to convert to equity (shares) in the future

Government Debt Instruments

- *Treasury notes* – short term: 5, 13, 26 weeks; mainly used for liquidity management by the RBA
- *Commonwealth government bonds (CGBs) and semi-government securities* – in the past, these dominated by fixed interest market. Deregulation allowed governments (federal and state) and semi-government authorities (GBEs – government business enterprises) to issue their own securities to gain finance. Therefore, this sector has expanded. Commonwealth and state government bonds are the major deficit funding instruments for these levels of government.

(Table 10.3)

Equity Market

Borrowers are firms that issue *shares*. Shares are part ownership of a corporation. Shareholders have a claim on the profits and assets. Their claim on assets is *residual*, meaning they are the last to be paid in the event of the firm's insolvency. Shares are more risky, and therefore expect a higher rate of return than is for debt instruments.

Individuals and firms who hold shares hope to:

- Share in profits through dividends
- Benefit from capital gain on their shares (i.e. increase in their resale value)

Borrowers are large institutions such as:

- Investment companies
- Superannuation companies
- Managed funds (those that take savings and manage to make profit)

These aim to buy and sell equity to spread risks and maximise returns.

Futures and derivative products allow market participants to hedge (reduce risk) against losses (i.e. reduce or eliminate the risk of future loss). These products include *options* and *swaps* as well as futures.

Lenders: individuals, governments, business

Interest Rate Determination

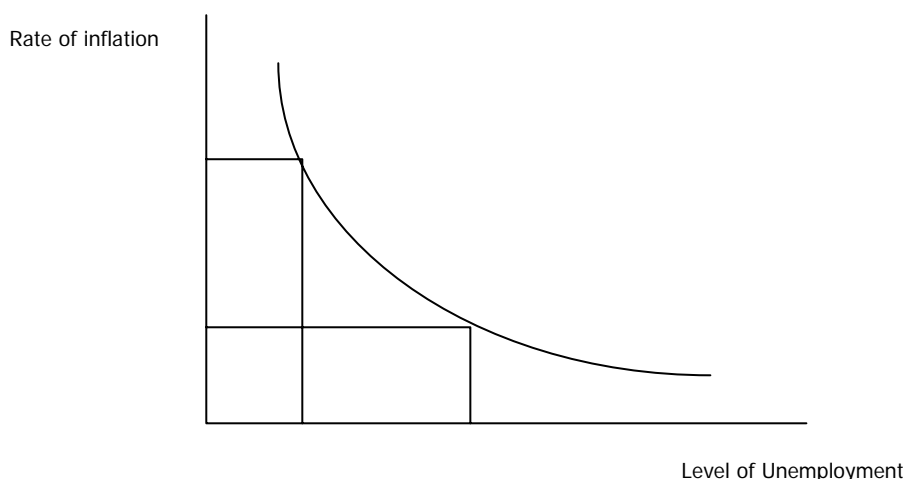
Role of the Reserve Bank of Australia (RBA)

It is set up as Australia's Central Bank in 1959 by legislation. It is run by a government appointed Board. Its charter states:

"It is the duty of the Board, within the limits of its power, to ensure that the monetary and banking policy of the Bank is directed towards the greatest advantage of the people of Australia and that the powers of the Bank ... are exercised in such a manner as, in the opinion of the Board, will best contributed to the stability of the currency of Australia; the maintenance of full employment in Australia, and the economic welfare and prosperity of the people of Australia."

Note: High inflation → unstable currency

Phillips Curve



∴ Conflict between basic aims

RBA's main functions

- Control note issue and distribution of currency
- Banker to the commercial banks through the Exchange Settlement Accounts (ESAs)
- Banker and advisor to the Commonwealth Government
- Holder of Australia's international reserves of gold, foreign exchange and Special Drawing Rights (SDRs) with the International Monetary Fund (IMF)
- Prudential supervision of the payments system, guaranteeing stability and liquidity (The APRA now supervises banks and other financial institutions)
- Conduct of Monetary Policy to achieve broad objectives such as low inflation, full employment and long-term economic growth to achieve improvements in living standards

Money Aggregates measured by RBA

These give an indication of the money supply (i.e. total purchasing power):

- Currency – notes and coins held by the private non-bank sector
- Bank deposits – excluding Commonwealth and State Governments' deposits and interbank deposits
- M1 – currency plus current bank deposits (cheque accounts) of the private non-bank sector
- M3 – M1 plus all other bank deposits of the private non-bank sector
- Broad money – M₃ plus borrowings from the private sector NBFIs, less the NBFIs' holding of currency and bank deposits
- Money base – holdings of notes and coins held by the private sector plus deposits of banks with the RBA and other RBA liabilities to the private non-bank sector
- Credit – loans and advances by financial intermediaries plus total bank bills outstanding

11.1 Selected Monetary and Credit Aggregates: August 2001

Aggregate		Total \$m	%Δ year to August 2001
Currency (nsa)		\$26,827m	
Current Deposits with Banks		<u>\$122,364m</u>	
Non-interest Bearing	\$20,149m		
Interest Bearing	\$102,215m		
M1 (sa)		<u>\$149,191m</u>	
Other Deposits with Banks		<u>\$293,979m</u>	
Certificates of Deposit	\$71,728m		
Term Deposits	\$151,119m		
Other Deposits	\$71,132m		
M3 (sa)		<u>\$443,169m</u>	7.7%
Plus Borrowings from Private Sector by NBFIs		\$97,707m	
Less Currency and Bank Deposits by NBFIs		<u>\$21,312m</u>	
Broad Money (nsa)		<u>\$519,565m</u>	7.7%
Money Base		\$30,056m	
Offshore Borrowings by AFI		\$140,143m	
Credit (nsa)		\$713,617m	13.1%

Source: Reserve Bank of Australia (2001), Bulletin, October

Note: nsa is not seasonally adjusted. Figures may be rounded and no total.

Note: currency – 6% of M3, bank deposits – 94%

Deposits with NBFIs have grown substantially since 1983 (deregulation)

Credit growth, here, shows how demand and supply of traditional forms of money have changed with deregulation and modern financial innovations. Growth in M3, broad money and credit are guides to the growth in demand for money in the economy and assist the RBA in formulating monetary policy. Australians are more heavily in debt than ever before.

The Term Structure of Interest Rates

Different financial assets attract different interest rates (returns).

The Risk and Reward Principle assumes individuals are risk averse, i.e. one needs to be paid more to accept more risk (less risk, less rate of return).

Main sources of risk come from the economic environment that prevails at a particular time. These are factors like:

- *Inflation* – this adds a risk premium to long-term financial asset yields, as future purchasing power from future income streams is reduced)
- *Liquidity* – the speed and ease with which an asset can be converted to cash – highly liquid instruments will have low rates of interest and illiquid ones will return more
- *Maturity* – the time before a debt instrument is redeemed or cashed in
- *Interest rate changes* – if general returns go up, the instruments held at previously prevailing lower rates, return less and vice versa

The real interest rate is the nominal rate of interest adjusted for the effect of inflation.

Example

Nominal interest rate = 8%; inflation rate = 3%, real interest rate = 5%

In times of inflation, lenders want interest rates to be raised to maintain their real returns, i.e. to reduce the *maturity risk* (the possibility that a lender may have a reduced return than expected at the commencement of a term – even a loss). The maturity risk for short-term lending is less than for long-term instruments.

11.1 Types of Yield Curves and the Term Structure of Interest Rates

Normal Yield Curve (upward sloping)

Short-term interest rates and maturity risk are lower. As the term increases, both interest rates and maturity risk rise (lenders need more return to entice them to lend for longer and to cover the risk of possible higher future inflation, even if current inflation is low). Also, this curve may indicate expansionary monetary policy, i.e. low interest rates to encourage economic activity. It applies *generally* to interest rates.

Inverse Yield Curve (downward sloping)

Short-term interest rates are higher than long-term interest rates. This could be due to high current inflation and lower expected future inflation. Also, this curve may indicate contractionary monetary policy, i.e. high interest rates to reduce economic activity.

Flat Yield Curve

This indicates present and future inflationary expectations are similar. Despite longer maturity times, lenders will accept current interest rates because real returns are equal and risk is minimal.

Lending rates (i.e. those charged by financial intermediaries to those who borrow from them) exceed borrowing rates (i.e. those paid by financial intermediaries to those who deposit with them) so that the intermediaries can make a profit. The *interest rate spread or margin* is the different between the rate charged to borrowers and the rate paid to depositors.

$\text{Lending rate} - \text{Borrowing Rate} = \text{Interest rate spread (margin)}$

$\text{Profit (of the financial intermediaries)} = \text{Interest (received from borrowers)} + \text{Other Income} - \text{Costs (interest paid to depositors} + \text{running costs)}$

Below – examples:

11.2 Selected Interest Rates and Yields of Financial Assets (September 2001, % per annum)

Bank Current Deposit (at call)	0.05%
Cash Rate (overnight)	4.75%
Treasury Note (26 weeks/yield)	4.23%
Bank Fixed Deposit Rate (5 years)	4.60%
Bank Bill (180 days)	4.24%
Treasury Bond (10 years)	5.52%
Finance Company Debenture (3 years)	4.85%
Large Business Overdraft Rate (3 year variable)	8.30%
Small Business Overdraft Rate (3 year variable)	8.70%

Source: Reserve Bank of Australia (2001), Bulletin, October

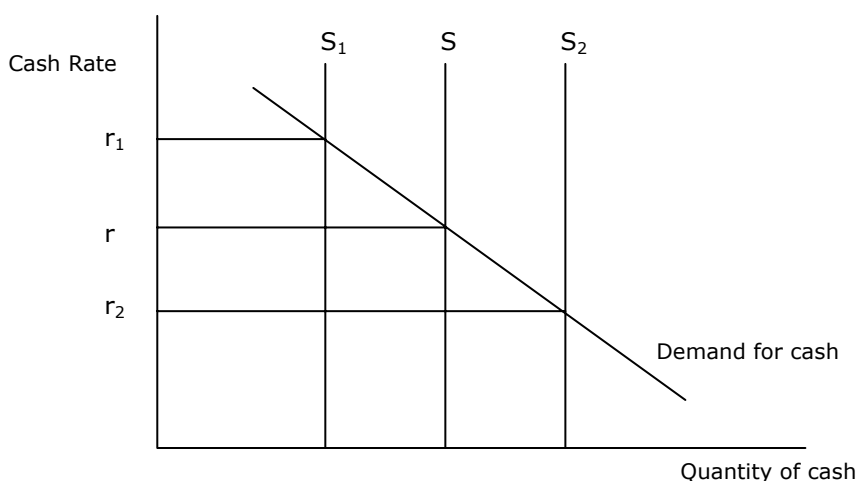
The Cash Market and the Cash Rate

The official *cash rate* sets the benchmark for interest rates throughout the financial sector. It is the key lever for monetary policy (MP). The cash rate is maintained at a preset target level by the RBA conducting *open market operations*. The cash rate applies to the cash market that exists for deposit and lending of funds overnight. Banks, financial institutions and large companies deposit any surplus funds they have in order to earn interest. Conversely, those institutions with a cash deficit will borrow from the cash market. The interest rate (the cash rate) is determined by the demand and supply of funds. The *demand for cash* is determined by the reserves of cash (exchange settlement funds) held by the banks in the Exchange Settlement Accounts (ESAs) with the RBA on a daily basis; the funds are used to settle transactions between banks. The RBA insists that these funds must not be overdrawn (it pays a nominal amount of interest on them). Therefore, the banks keep reserve balances in their accounts to meet any unexpected demands for cash.

The *supply of cash* by the RBA – this allows the RBA to control the supply of cash. Market operations involve buying and selling CGS (Commonwealth Government Securities). These are debt instruments used to fund government deficit spending. They are *not* new instruments issued simply to control interest rates. They are already in existence. If the RBA wishes to tighten MP, it sells CGS to the banks; to pay for them, the banks take funds from their ESAs and it is transferred to the RBA. There is less cash in Short Term Money Market (STMM) and the price of borrowing goes up, i.e. the cash rate rises.

To loosen MP, the RBA buys CGS from the banks; funds come out of the RBA and they are transferred to the commercial banks' ESAs. There is more cash available – the cash rate then falls. To ease MP, cash flows out of the RBA when it buys CGS. The banks have excess liquidity in the ESAs. This can be used for lending in the wider financial market. To tighten MP, cash flows into the RBA from the banks' ESAs. They call on additional funds from outside the STMM to have sufficient funds to settle their accounts. Interest rates rise.

The Cash Market



Above illustrates this:

The move from S to S_1 raises the cash rate from r to r_1 ; the move from S to S_2 lowers the cash rate from r to r_2 . Changes to the cash rate are publicly announced as part of its monetary policy stance.

The Conduct of Monetary Policy

Monetary policy consists of actions taken by the RBA (the Federal Government's main monetary authority) to influence the supply and cost of credit (purchasing power) in the economy. The main tool of MP is market operations, which sets the cash rate or interest paid on highly liquid deposits in the cash market (i.e. the STMM – short term money market).

Alterations in the cash rate have a flow-on effect that changes interest rates throughout the financial sector. In time, this affects spending, output, inflation and employment in the economy. The RBA's target for inflation is between 2 and 3%.

11.3 Effect of Changes in Monetary Policy on the Cash Rate

<u>Stance of Monetary Policy</u>	Tightening of Monetary Policy Easing of Monetary Policy Neutral Monetary Policy
<u>Market operations</u>	RBA sales of CGS RBA purchases of CGS RBA ensures demand for cash met by supply
<u>ESA balances</u>	Fall in cash Rise in cash No change
<u>Cash Rate</u>	Higher cash rate Lower cash rate No change in cash rate

The effect of changes in the cash rate on other interest rates

Changes in the cash rate have the quickest and most direct effect at the short end of the yield curve, i.e. instruments that have a short term (e.g. commercial bills and government instruments such as Treasury notes). Interest rates that banks pay to depositors and charge borrowers also respond to cash rate changes, not immediately but usually fairly quickly. Large investors in various financial instruments (e.g. managers of large portfolios on behalf of various clients such as superannuation funds) take more time to adjust. The overall effect is that eventually, interest rates throughout the entire financial sector will be affected by changes in the cash rate brought by

implementation of government MP. Thus, there is a *time lag* between a change in the RBA's MP and its effects through the economy.

Easing of MP stimulates the economy: it increases spending, output and employment but it could create inflationary pressure. Tightening of MP contracts the economy: it will curb inflationary pressure but it could increase unemployment and produce a downswing.

The time lag that operates before MP changes have full effects on real variables (spending, output, unemployment and prices) is between 6 and 12 months.

11.4 Changes in Cash Rate 1996-2000

Date	Old Cash Rate	New Cash Rate	MP Stance
Nov 1996	7.0%	6.5%	Easing
Dec 1996	6.5%	6.0%	Easing
May 1997	6.0%	5.5%	Easing
Jul 1997	5.5%	5.0%	Easing
Dec 1998	5.0%	4.75%	Easing
Nov 1999	4.75%	5.00%	Tightening
Feb 2000	5.0%	5.5%	Tightening
Apr 2000	5.50%	5.75%	Tightening
May 2000	5.75%	6.00%	Tightening
Aug 2000	6.00%	6.25%	Tightening

Examples of changes to cash rate

- Nov 1996 – Dec 1998: Cash rate lowered 2.25%. RBA believed that the economy could sustain higher growth (i.e. with no rise in inflation) in output and employment. Result – inflation remained low (2% or less), unemployment fell below 7% with increased participation rate
- Nov 1999 – Aug 2000: Cash rate was raised 5 times due to perceived inflationary pressure such as a growth in credit of 16%; rising world oil prices; a depreciating exchange rate affecting import prices; introduction of the GST. The RBA was determined to contract the economy by raising interest rates to keep inflation within the 2-3 percent range.

The RBA continually monitors the supply of and demand for cash in the STMM to ensure supply and demand are equal. The underlying forces of demand for and supply of cash are independent of the RBA's monetary policy stance and the RBA's supply of cash maintains the cash rate at the level it desire.

There are a number of transmission channels by which MP has *effects* on the economy:

- *Consumption, savings and investment decisions by individuals, firms and governments* – higher interest rates reduce consumption, spending and investment, but encourage savings. Lower interest rates encourage consumption and investment and reduce savings.
- *Cash flow of individuals, firms and governments* – higher interest rates reduce cash flows (costs on borrowings, loan repayments and credit rise); lower rates increase cash flows
- *Money and credit flows between borrowers and lenders* – higher interest increases the flow of funds to lenders but raise the cost of borrowing funds and credit (thereby discouraging it). Lower interest decreases the flow of interest to lenders and reduces the cost of borrowing funds and credit.
- *Asset prices and values* – higher interest slows the growth of asset prices and values (e.g. real estate; shares) as the cost of borrowing funds to purchase assets is higher. Lower interest rates encourage borrowing to acquire real and financial assets, and pushes up their prices and demand increases. In booms, asset prices rise quickly and fall quickly in recessions.
- *Exchange rates* – high interest rates relative to overseas rates increases demand for Australian dollars and leads to capital inflow causing an appreciation of the Australian dollar. Lower interest rates → reduced demand for \$A, capital outflow, depreciation of \$A
- *Expectations* – higher interest rates low the expectations of future inflation. Wage and price setters limit their wage and price demands in the present. Lower interest rates encourage wage and price setters to increase wage and price present demands since they expect future inflation to erode the real value of future money wage and price levels.