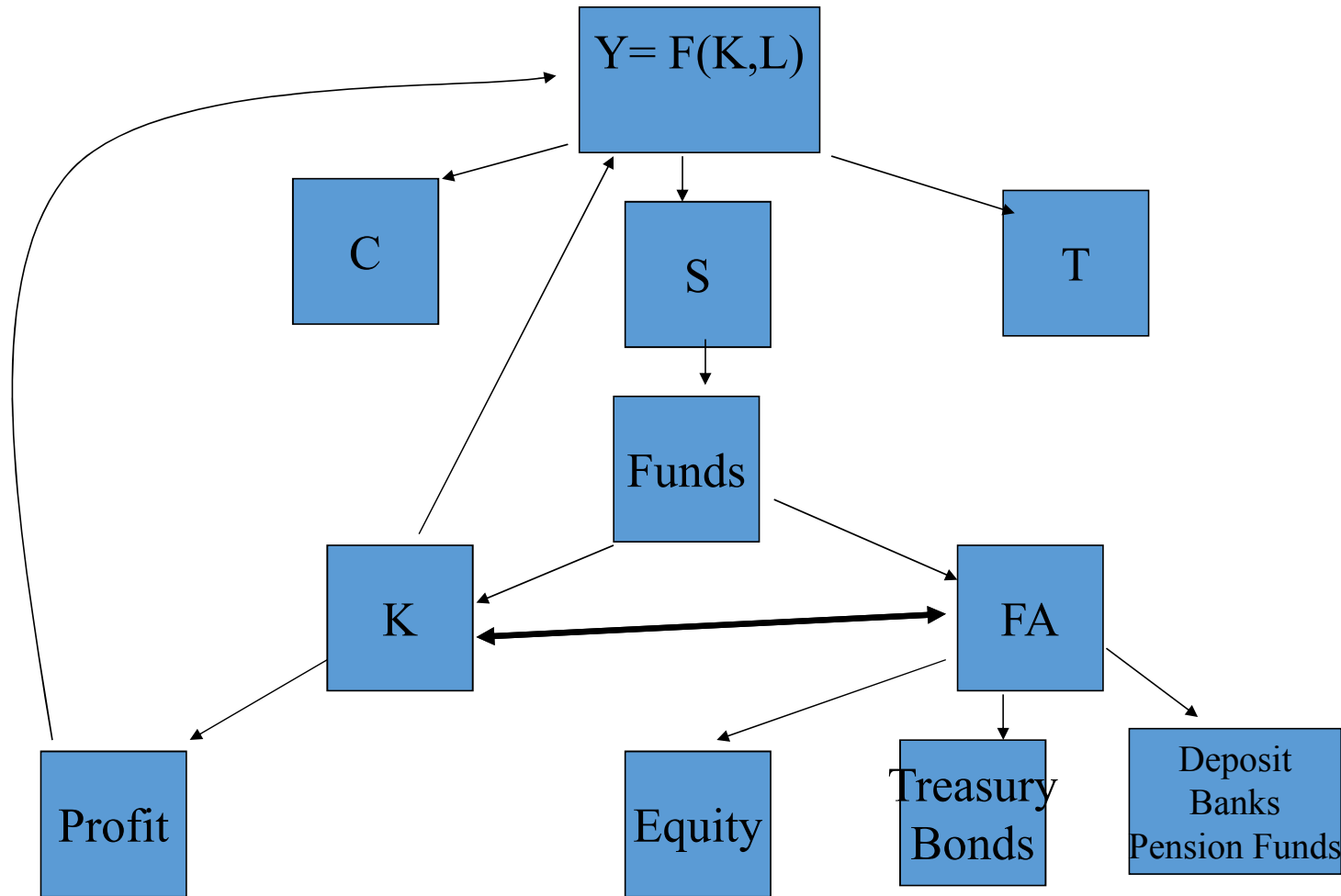


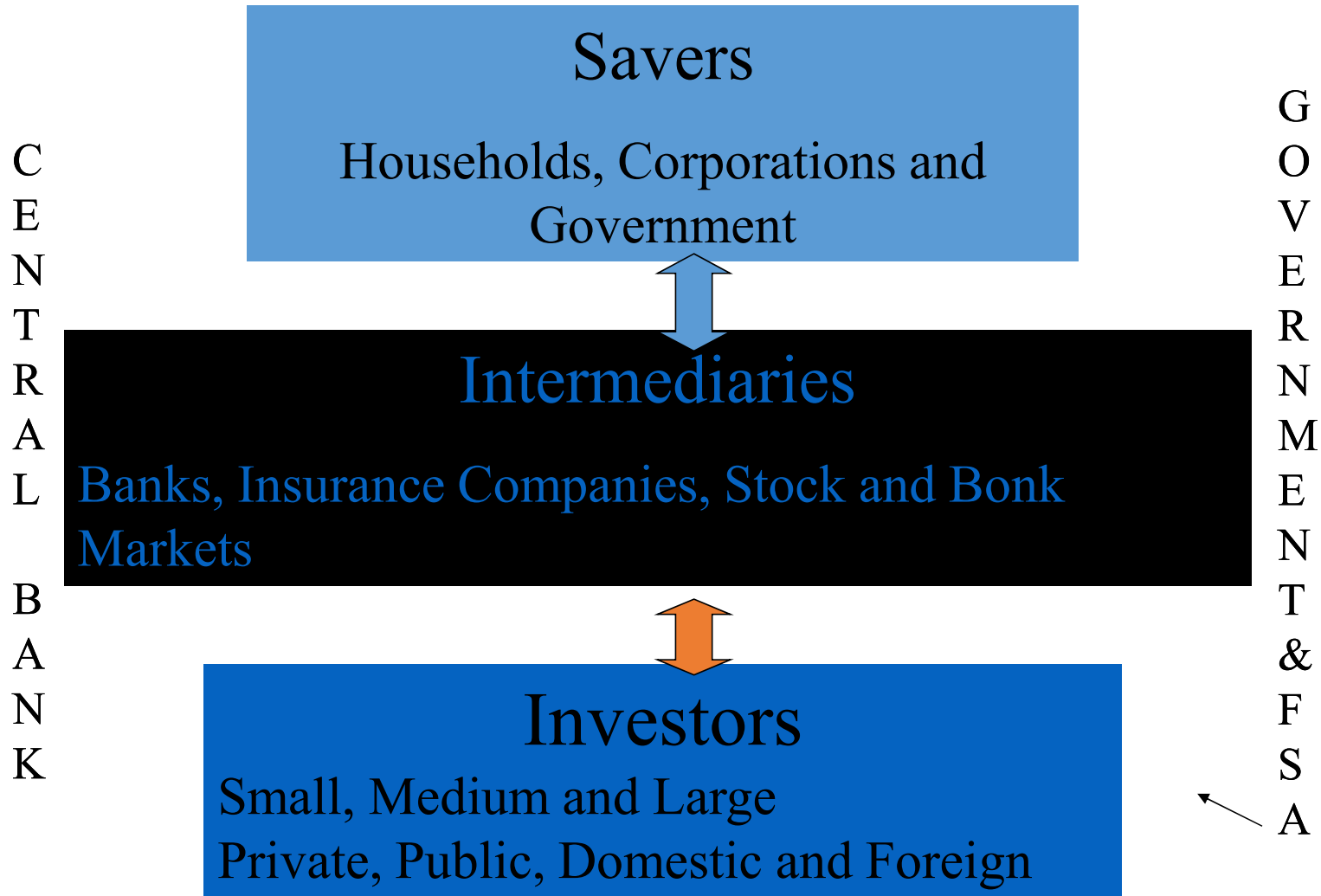
MacroFinance

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Link Between Financial System and the Economy



Major Players in a Financial Market

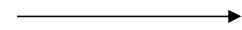


Basic macro notions

Macroeconomic Indicators

- Production: GDP
 - Important for Understanding Business Cycles
- Inflation: CPI
 - Central to LT interest rates
- Interest Rates
 - Comparing returns in other currencies.

All goods sold in an economy share a common unit of measure: the price at which they are sold.



Sum up
the value
of goods

Gross Domestic Product (GDP)

- *GDP* is the sum of the value of new, final goods produced within the domestic borders of an economy.

*Final goods are goods
sold to their end-users*

Three Methods for Calculating GDP

1. Expenditure Method - The sum of the domestic spending on final goods (less domestic demand satisfied by imports).
2. Production Method - The value added created in all the sectors of the economy.
3. Income Method – The Wage, Rent, Interest and Profit Income generated by the domestic economy.

Expenditure Method

<u>C</u> +	C onsumption	Consumer durables, non-durables, services
<u>I</u> +	I nvestment	Structures (incl. Residential), Equipment, and Inventory
<u>G</u> +	G overnment Consumption	Government Spending on Goods, Services, and Salaries.
<u>X</u> -	EX ports	Goods & Services Shipped Abroad
<u>IM</u>	IM ports	Goods & Services from Abroad
=	<u>GDP</u>	$A + NX = (C + I + G) + (X - IM)$

GNP vs. GDP

GDP	GNP
Gross National Product	Gross Domestic Product
= income earned by domestic residents	= income created within national borders.
$GNP = GDP + NFI$	

- Net Factor Income [NFI] is income earned on overseas work or investments minus income generated domestically but paid to foreigners.

Comparing GDP levels across time

- GDP measures the value of the goods produced by an economy by using the market price of each good to assign it a value.
- Problem: Prices of goods in terms of money are changing overtime making comparisons in overall value difficult.
 - Bias: Money prices are growing over time as money supply grows.
- Solution: Choose a Base Year's prices as a fixed yardstick of value for different goods.

Real GDP: Y_t

- *GDP* aka *Nominal GDP* aka *Current Dollar GDP* is the weighted sum of the number of goods produced using their current prices as the weight.
- *Real GDP* aka *Constant Dollar GDP* aka *GDP adjusted for inflation* is the weighted sum of the number of goods produces using the Base Year prices as yardsticks.

Recessions and Expansions

- Business cycle positions are sometimes characterized as booms and recessions.
- These names have many definitions
 - An expansion occurs roughly when real GDP is above the trend growth path (detrended output is positive).
 - A recession occurs roughly when real GDP is below trend growth.
 - In the USA, recessions are sometimes defined as 2 consecutive periods of negative growth.

Price Indices: P_t

- Two most commonly used price indices are *GDP Deflator* and *Consumer Price Index (CPI)*
- The GDP deflator is the ratio of nominal GDP to Real GDP (multiplied by 100).

$$P = \text{GDP Deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

$$P = \frac{\text{GDP}}{Y} \times 100$$

Consumer Price Index

- The CPI is the price of a representative market basket of goods relative to the price of that same basket during a benchmark/base year (multiplied by 100).

$$CPI_t = \frac{\text{Cost of Market Basket in year } t}{\text{Cost of Market Basket in Base year}} \times 100$$

Q: What is Inflation?

A: The Growth Rate of Price Level

$$\text{Inflation Rate} = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100\%$$

Inflation: prices are growing

Disinflation: inflation is slowing down but still positive

Deflation: inflation is negative and prices are actually dropping.

The markets

The Three major Markets

Households, firms, the government, and the rest of the world all interact in three different markets:

1. Goods-and-services market
2. Labor market
3. Money (financial) market

The Three major Markets cont..

- Households and the government purchase goods and services (*demand*) from firms in the ***goods-and services market***, and firms *supply* to the goods and services market.
- In the ***labor market***, firms and government purchase (demand) labor from households (supply).
 - The total supply of labor in the economy depends on the sum of decisions made by households.
- In the ***money market***—sometimes called the *financial market*—households purchase stocks and bonds from firms.
 - Households *supply* funds to this market in the expectation of earning income, and also *demand* (borrow) funds from this market.
 - Firms, government, and the rest of the world also engage in borrowing and lending, coordinated by financial institutions.

Why Is the Financial Sector So Important to Macro?

- The financial sector is important to macroeconomics because of its role in channeling savings back into the circular flow.
- Savings are returned to the circular flow in the form of consumer loans, business loans, and loans to government.
- Savings are channeled into the financial sector when individuals buy financial assets such as stocks or bonds and back into the spending stream as investment.

Financial assets

The Definition and Functions of Money

- **Money** is a highly liquid financial asset.
 - To be **liquid** means to be easily changeable into another asset or good.
 - Social customs and standard practices are central to the liquidity of money.
- Money is used as a reference in valuing other goods.
- Money can be stored as wealth.

Financial Instruments

- ***Treasury bonds, notes, and bills*** are promissory notes issued by the federal government when it borrows money.
- ***Corporate bonds*** are promissory notes issued by corporations when they borrow money.
- ***Shares of stock*** are financial instruments that give to the holder a share in the firm's ownership and therefore the right to share in the firm's profits.
 - ***Dividends*** are the portion of a corporation's profits that the firm pays out each period to its shareholders.

Bond Prices and Bond Yields

• Consider two types of bonds:

- A one-year bond—a bond that promises one payment of \$100 in one year. Price of the one-year bond:

$$P_{1t} = \frac{\$100}{1 + i_{1t}}$$

- A two-year bond—a bond that promises one payment of \$100 in two years. Price of the two-year bond:

$$P_{2t} = \frac{\$100}{(1 + i_{1t})(1 + i^e_{1t+1})}$$

Bond Prices and Bond Yields

- The yield to maturity on an n -year bond, or the n -year interest rate, is the constant annual interest rate that makes the bond price today equal to the present value of future payments of the bond.

$$\$P_{2t} = \frac{\$100}{(1+i_{2t})^2}, \text{ then: } \frac{\$100}{(1+i_{2t})^2} = \frac{\$100}{(1+i_{1t})(1+i_{1t+1}^e)}$$

$$\text{therefore: } (1+i_{2t})^2 = (1+i_{1t})(1+i_{1t+1}^e)$$

From here, we can solve for i_{2t} .

Bond Prices and Bond Yields

- The yield to maturity on a two-year bond, is closely approximated by:

$$i_{2t} \approx \frac{1}{2} (i_{1t} + i_{1t+1}^e)$$

In words, *the two-year interest rate is (approximately) the average of the current one-year interest rate and next year's expected one-year interest rate.*

Long-term interest rates reflect current and future expected short-term interest rates.

The Stock Market and Movements in Stock Prices

•Firms raise funds in two ways:

- Through **debt finance** —bonds and loans;

and

- Through **equity finance**, through issues of **stocks**—or **shares**. Instead of paying predetermined amounts as bonds do, stocks pay **dividends** in an amount decided by the firm.

The Stock Market and Movements in Stock Prices

- The price of a stock must equal the present value of future expected dividends, or the present value of the dividend next year, of two years from now, and so on:

$$\$Q_t = \frac{\$D_{t+1}^e}{1 + i_{1t}} + \frac{\$D_{t+2}^e}{(1 + i_{1t})(1 + i_{1t+1}^e)} + \dots$$

In real terms,

$$Q_t = \frac{D_{t+1}^e}{(1 + r_{1t})} + \frac{D_{t+2}^e}{(1 + r_{1t})(1 + r_{1t+1}^e)} + \dots$$

The Stock Market and Movements in Stock Prices

$$Q_t = \frac{D^e_{t+1}}{(1+r_{1t})} + \frac{D^e_{t+2}}{(1+r_{1t})(1+r^e_{1t+1})} + \dots$$

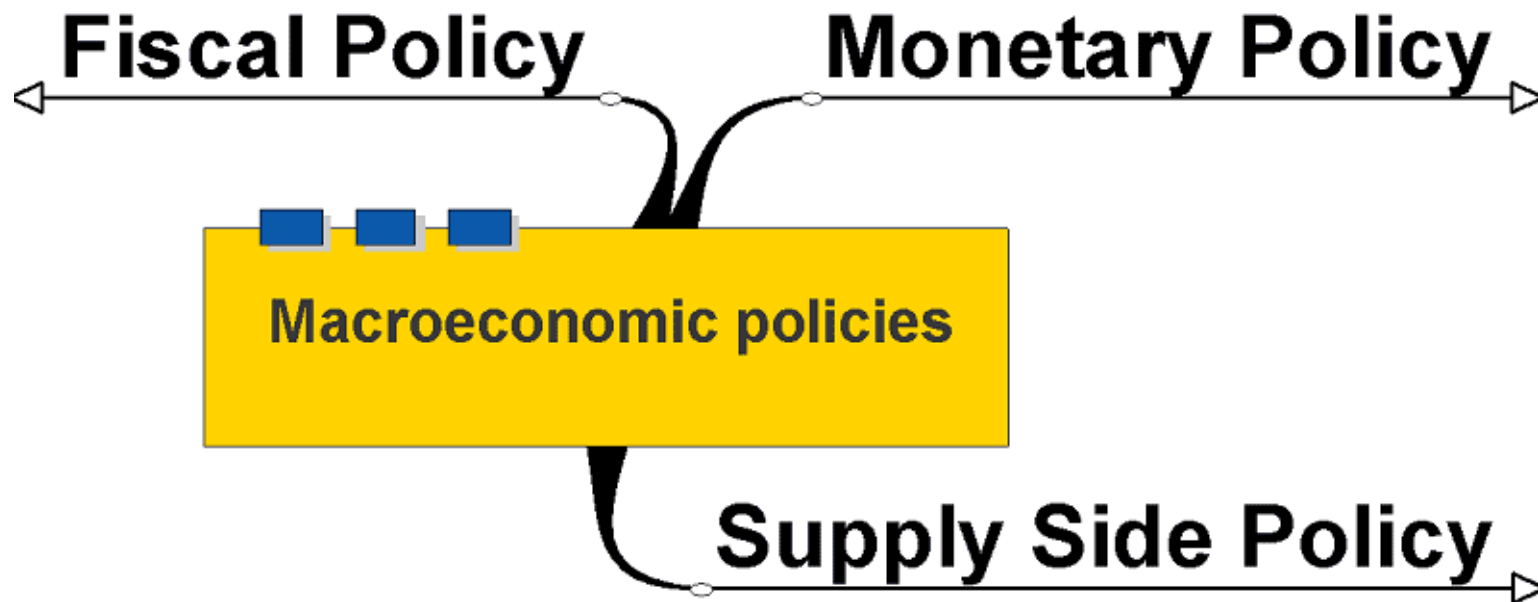
- This relation has two important implications:
 - Higher expected future real dividends lead to a higher real stock price.
 - Higher current and expected future one-year real interest rates lead to a lower real stock price.

The Stock Market and Movements in Stock Prices

- Stock prices follow a random walk if each step they take is as likely to be up as it is to be down. Their movements are therefore unpredictable.
- Even though major movements in stock prices cannot be predicted, we can still do two things:
 - We can look back and identify the news to which the market reacted.
 - We can ask “what if” questions.

Macroeconomic policies

Macroeconomic Policies



Fiscal policy

1. Objectives and uses of fiscal policy
 - Stabilization, allocation, distribution
2. Global financial crisis and fiscal policy response
 - Benefits and risks related to fiscal policy
 - Public debt dynamics
 - Sustainability of public debt
 - Safeguarding fiscal sustainability
 - Exit strategies when things go wrong
3. Fiscal reforms

definition of fiscal policy

1. The term fiscal policy refers to the use of public finance instruments to influence the working of the economic system to maximize economic welfare
2. Effects of fiscal policy reflect not only the impact of the fiscal balance, but also various elements of taxation, spending, and budget financing
3. Assessing the stance of fiscal policy requires taking account of the activities of all levels of government

Objectives of fiscal policy

- Stabilization
 - Fiscal policy influences aggregate demand
 - Directly because $Y = C + I + G + X - Z$
 - Indirectly because C depends on income after tax
 - Through demand, fiscal policy affects output, employment, inflation, balance of payments
- Allocation
 - Fiscal policy also influences aggregate supply
 - Public infrastructure, education, health care
- Distribution
 - Through taxes, transfers, and expenditures
 - Progressive, neutral, regressive

Objectives of fiscal policy

- Fiscal policy can be used to several ends
 - To achieve internal balance
 - By adjusting aggregate demand to available supply
 - By achieving low inflation, potential output
 - To promote external balance
 - By ensuring sustainable current account balance
 - By reducing risk of external crisis
 - To promote economic growth
 - E.g., through more and better education and health care
- Fiscal policy needs to be coordinated with monetary, exchange rate, and structural – i.e., supply-side – policies

Fiscal Policy

- Influencing the level of economic activity through manipulation of government income and expenditure
- Associated with Keynesian Demand Management Policies
- Now seen in wider terms:

Fiscal Policy

- Influence Aggregate Demand –
 - Tax regime influences consumption (C) and investment (I)
 - Government Spending (G)
- Influences key economic objectives
- Acts as an ‘automatic stabiliser’
- BUT:
- Also used to influence non-economic objectives and provide framework for supply side policy
- e.g. education and health, poverty reduction, welfare reform, investment, regional policies, promotion of enterprise, etc.

Government Income

- Tax Revenue
- Sale of Government Services – e.g. prescriptions, passports, etc.
- Borrowing

The Golden Rule!

- over the medium term, to ensure sound public finances and that spending and taxation impact fairly within and between generations; and
- over the short term, to support monetary policy and, in particular, to allow the automatic stabilisers to help smooth the path of the economy.
- These objectives are implemented through two fiscal rules, against which the performance of fiscal policy can be judged. The fiscal rules are:
 - **the golden rule:** over the economic cycle, the Government will borrow only to invest and not to fund current spending; and
 - **the sustainable investment rule:** public sector net debt as a proportion of GDP will be held over the economic cycle at a stable and prudent level. Other things being equal, net debt will be maintained below 40 per cent of GDP over the economic cycle.

The Golden Rule!

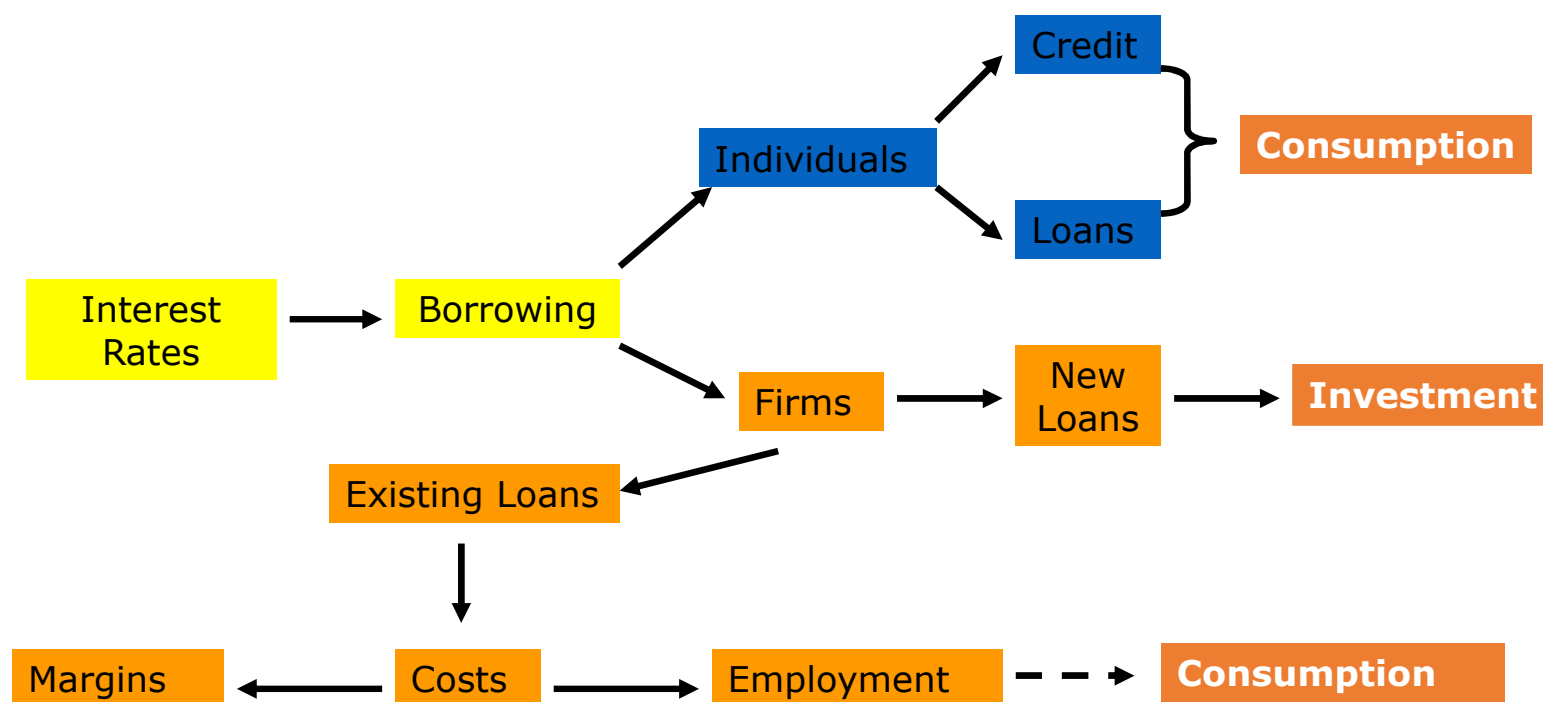
- The fiscal rules ensure sound public finances in the medium term while allowing flexibility in two key respects:
 - the rules are set over the economic cycle. This allows the fiscal balances to vary between years in line with the cyclical position of the economy, permitting the automatic stabilisers to operate freely to help smooth the path of the economy in the face of variations in demand; and
 - the rules work together to promote capital investment while ensuring sustainable public finances in the long term. The golden rule requires the current budget to be in balance or surplus over the cycle, allowing the Government to borrow only to fund capital spending. The sustainable investment rule ensures that borrowing is maintained at a prudent level. To meet the sustainable investment rule with confidence, net debt will be maintained below 40 per cent of GDP in each and every year of the current economic cycle.

Source of information about the Golden Rule:
http://www.hm-treasury.gov.uk/budget/bud_bud03/budget_report/bud_bud03_repchap2.cfm
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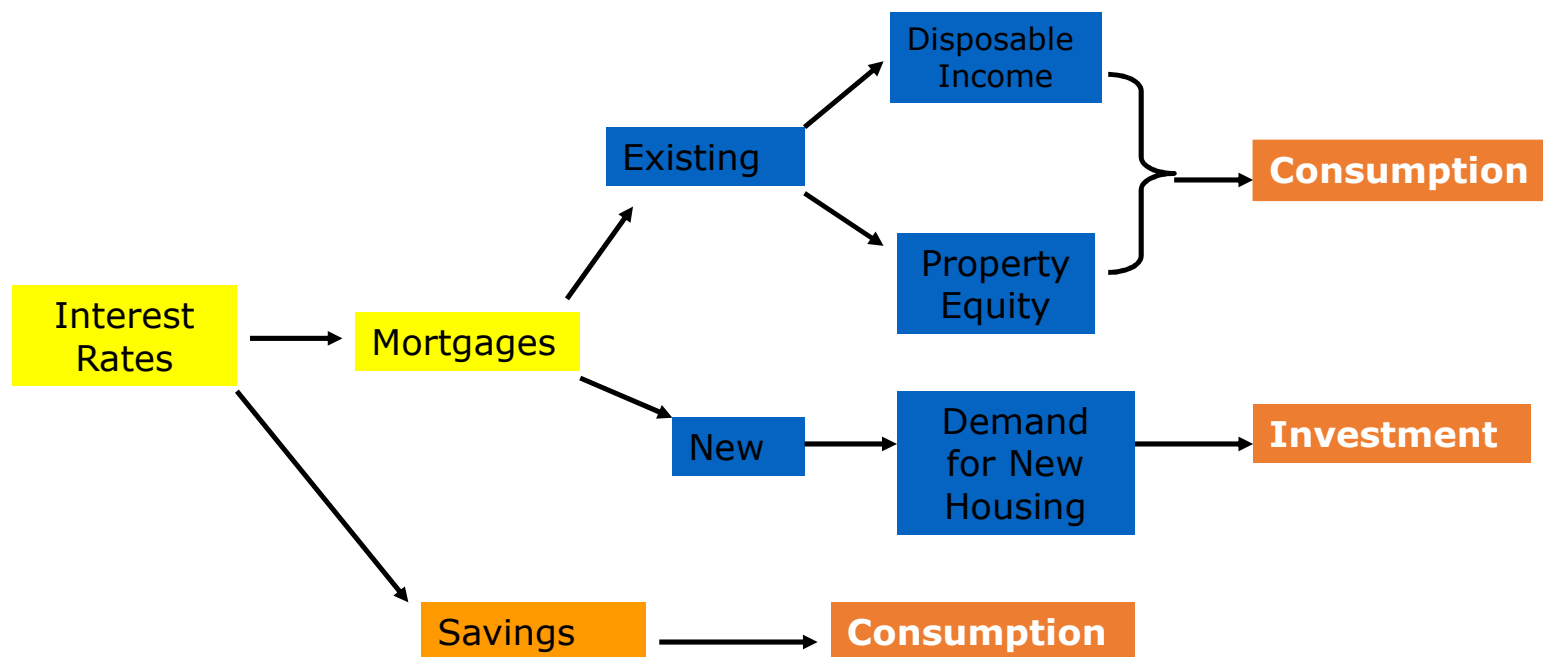
Monetary Policy

- Attempts to influence the level of economic activity (the amount of buying and selling in the economy) through changes to the amount of money in circulation and the price of money – short-term interest rates.
- Interest rates the key area of Monetary Policy

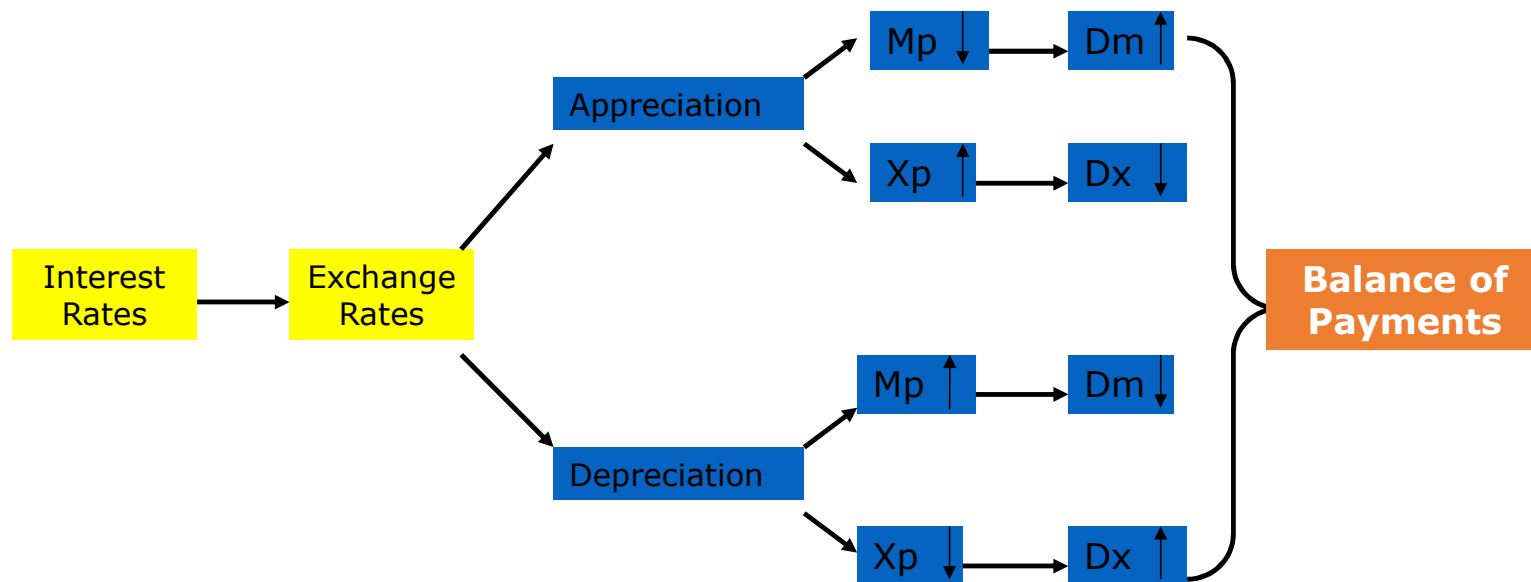
The Interest Rate Transmission Mechanism 1



The Interest Rate Transmission Mechanism 2



The Interest Rate Transmission Mechanism 3



Supply Side Policy



Supply Side Policy

- Intention is to shift the aggregate supply curve to the right, increasing the long term productive capacity of the economy
- Tend to be long-term policies
- Arguments about how effective they are – e.g. lowering taxes increases incentives, reducing welfare dependency increases the urge to find work

Supply Side Policies

- Policies aim to influence productivity and efficiency of the economy
- Key feature – open up markets and de-regulate to improve efficiency in the working of markets and the allocation of resources

Supply Side Policy

- **Main areas of policy:**
 - **Labour Market** – reduce impediments to free market, reduce bureaucracy and ‘red tape’ – flexible labour markets
 - Reduce power of trade unions Short term contracts
 - Flexible working arrangements
 - Hiring and firing
 - Contracts, terms and conditions, pay
 - Criticism of such policies is that they put the needs of employers above those of workers which can lead to exploitation particularly where the workers have few powers

Supply Side policies continued

- Privatisation.

The privatisation of state enterprises to raise money and efficiency
BCA and perhaps some of Pertamina and Garuda

- **Tax Reform:**

Tax reform to encourage people to work

- Improving access to training and education

- **Education and Training:**

- National Qualifications framework – coherent set of qualifications
- Expansion of vocational qualifications
- Expansion of university access

- **Incentives and technology:**

- Tax reform to encourage incentives and entrepreneurial spirit
- Incentives to develop new technology – investment
- Regional policies to encourage enterprise, investment, location, expansion. Transmigrasi

- These policies take a long time to work