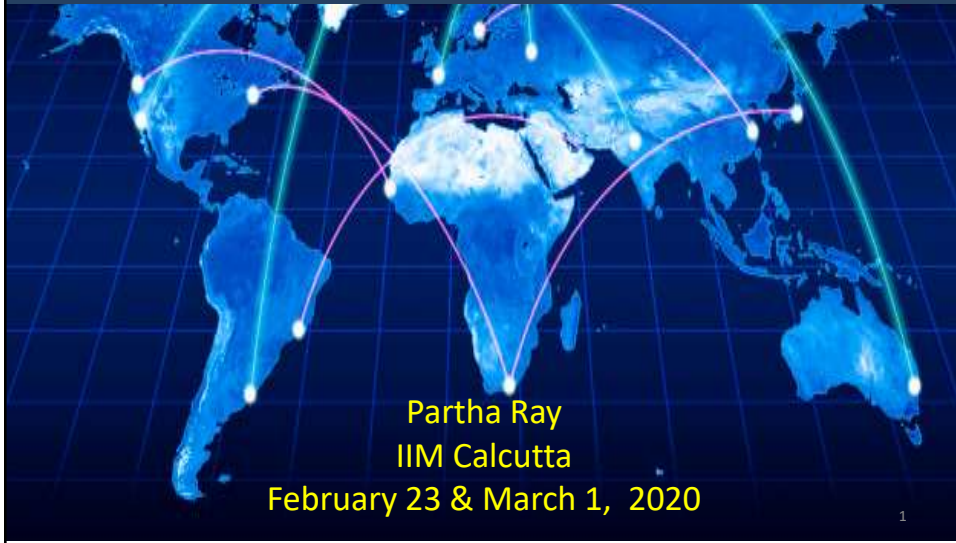


**Market Economies and Macroeconomic Policies**  
**SMP 16**  
**Sessions 2 & 3**



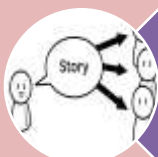
## Locating in Your Economics Module



Alphabets & Words:  
Microeconomics



Grammar:  
Macroeconomics

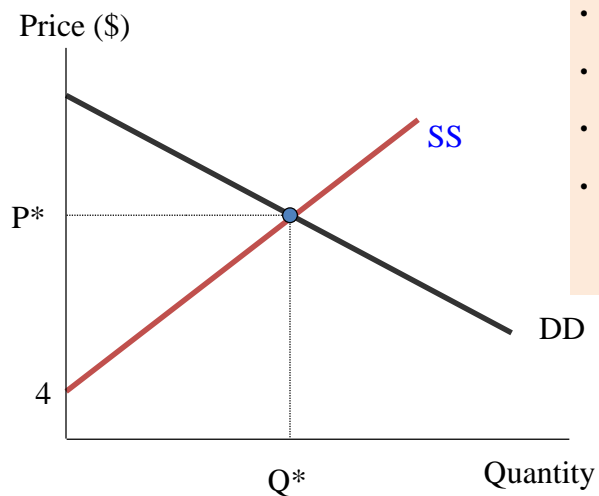


Story: India and the  
Global Economy

## Scheme of the Module

Date	Session No.	Topic
Feb 2 2020	1	Microeconomics
Feb 23 2020	2	Macroeconomics - I
Mar 1 2020	3	Macroeconomics - II
Mar 8 2020	4	Global Economy: USA & other G-7 countries - and China (including Trade War)
Mar 15 2020	5	Indian Economy 1
Mar 22 2020	6	Indian Economy 2

### Why Macro?



- Is this story true for all commodities?
- If so, then it is true for labour as well
- If so, there cannot be any unemployment
- And since price system acts as a God, what is the role of policies in this model

# Macro 1:

## Keynesian Macroeconomics

### Closed Economy Version

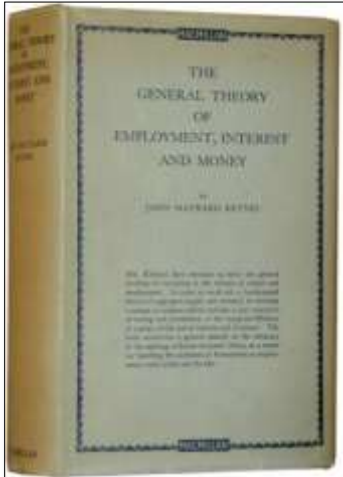
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## John Maynard Keynes: A short bio

- John M. Keynes (June 5, 1883 – April 21, 1946) was one of the most influential economists of the Twentieth Century.
- John M. Keynes was born in Cambridge to an upper middle class family.
- After Eton, he studied Maths at Kings College, Cambridge.
- At Cambridge, the great economist Alfred Marshall encouraged Keynes to take up the relatively new science of Economics.
- During the First World War, Keynes acted as a government advisor for the government.
- **It was the Great Depression of 1929-39, which gave Keynes the opportunity to disparage and challenge the classical orthodoxy which dominated economic theory at the time.**
- At the outbreak of the Great Depression, the classical response was to rely on free markets and balance the budget – through tax increases and cutting government spending.
- **In 1931, Keynes was particularly critical of Ramsay McDonald's austerity budget which cut public investment, wages and increased taxes. Keynes argued that the government should be doing the opposite.**
- **Throughout the 1930s, Keynes was a consistent voice for advocating higher government spending funded through higher borrowing.** However, in most democracies, it proved a lone voice – apart from intermittent spending as part of Roosevelt's New Deal.
- **His ground breaking work – *The General theory of Employment, Interest and Money* (1936) provided a framework for macroeconomics and was a radical departure from the more limited classical framework.**
- He tragically died from a heart attack in 1946, just as he was helping to implement the post war economic settlement and set up the Bretton-Woods system.

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## Keynesian Revolution



Letter to George Bernard Shaw:

"I believe myself to be writing a book on economic theory which will largely revolutionize - not, I suppose, at once but in the course of the next ten years - the way the world thinks about economic problems."

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## Assumptions in A Simple Macro Model (1)

- **Short run, prices are rigid (fixed)**
- **Not considering financial assets**
- **Not considering labour markets**
- **There is money but interest rates are fixed**
- **No foreign trade, hence need not worry about exchange rates and international financial capital mobility**

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## **KEYNESIAN CROSS MODEL: A SIMPLE MODEL OF INCOME DETERMINATION**

9

### **Assumptions in A Simple Macro Model (2)**

- **There is a fixed available supply of labour and physical capital stock**
- **Output increases lead to employment increases, think of an aggregate production function  $Y=F(\underline{K}, L)$**
- **There is a  $\underline{K}=\bar{K}$ , (The existing installed capacity of firms)**

**As we go along, we will relax these assumptions one by one**

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## THE CIRCULAR FLOW

- Total of incomes and total of expenditures on final goods and services, both measure GDP
- In the expenditure flow there were **leakages** such as savings, taxes, imports and **injections** such as investment by firms, government spending and export (expenditure on our goods by foreigners)

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## EQUILIBRIUM

- One way of looking at equilibrium is to equate income to **planned** expenditure
- Expenditure is **planned** by households, firms and government
- Plans are referred to as **ex ante** values, actual outcomes are referred to as **ex post** values

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## Path to Equilibrium

- Deviation from planned and actual expenditures can take place if firms find they are not selling what they had planned, implying inventories are changing (increasing if they are selling less than they expected, and decreasing if they are selling more than they expected)
- Deviations are **unplanned inventory accumulation or decumulation / draw down**

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## EQUILIBRIUM

- An equivalent way of looking at equilibrium is the leakages from the circular flow and the injections into the circular flow match each other
- The reason why planned expenditure being actual (that is plans being realized) is considered an “equilibrium” is because in such a situation no one would have any incentive to change what they were doing.

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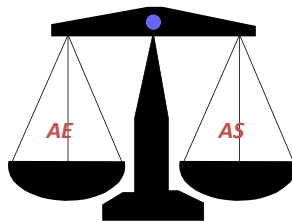
## Income Determination

- The aggregate expenditure/aggregate supply model is designed to explain how the different sectors of the economy interact to determine the size and composition of GDP (Y) in the short run.
- The model is an equilibrium model.
  - ***Equilibrium is a state of rest where there are either no forces causing change or equal opposing forces.***

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## Equilibrium

- Equilibrium is achieved in the model when aggregate spending or expenditures just equal aggregate supply or output.
  - ***Aggregate expenditures = Aggregate Supply***



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## SOME NOTATIONS

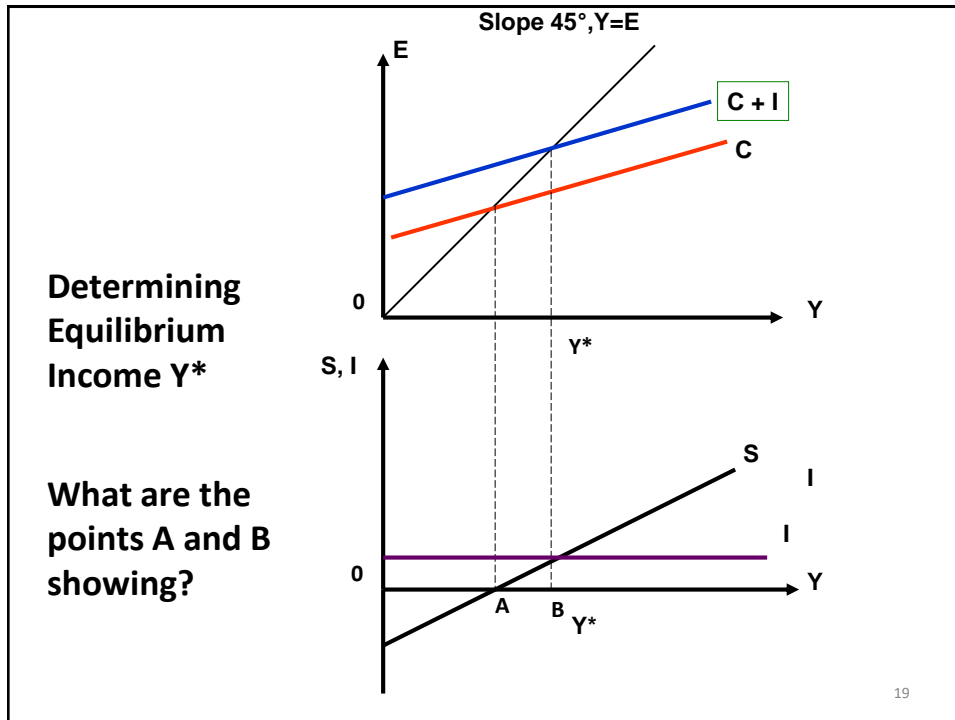
- **Y : INCOME, OUTPUT (PRODUCTION) GDP OR GNP**
- **E : TOTAL EXPENDITURE = C + I**  
 (For the time being we are ignoring net exports NX)  
**INCOME = EXPENDITURE**  
 $Y = E$   
 $Y = C + I$   
 Alternatively an equivalent way to depict this  
 $C + S = C + I$   
 $S = I$   
 What would be the condition if we did not have government ?

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## DETERMINING INCOME

- The equilibrium condition:
- **INCOME = PLANNED EXPENDITURE**
- $Y = C + I$
- $Y = C(Y) + I$
- $C(Y)$  to be read as **“C as a function of (Y)”**
- This equation has one unknown Y, if we take T, G and I to be given exogenously
- We can solve for Y

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## EQUILIBRIUM AND STABILITY

- An equilibrium can be stable or unstable
- The notion of stability means that if the economy is not in equilibrium then there will be forces at work that will restore equilibrium
- Instability on the other hand will take the economy further away from equilibrium
- We can compare two equilibria only if they are both stable

## ADJUSTMENT RULES

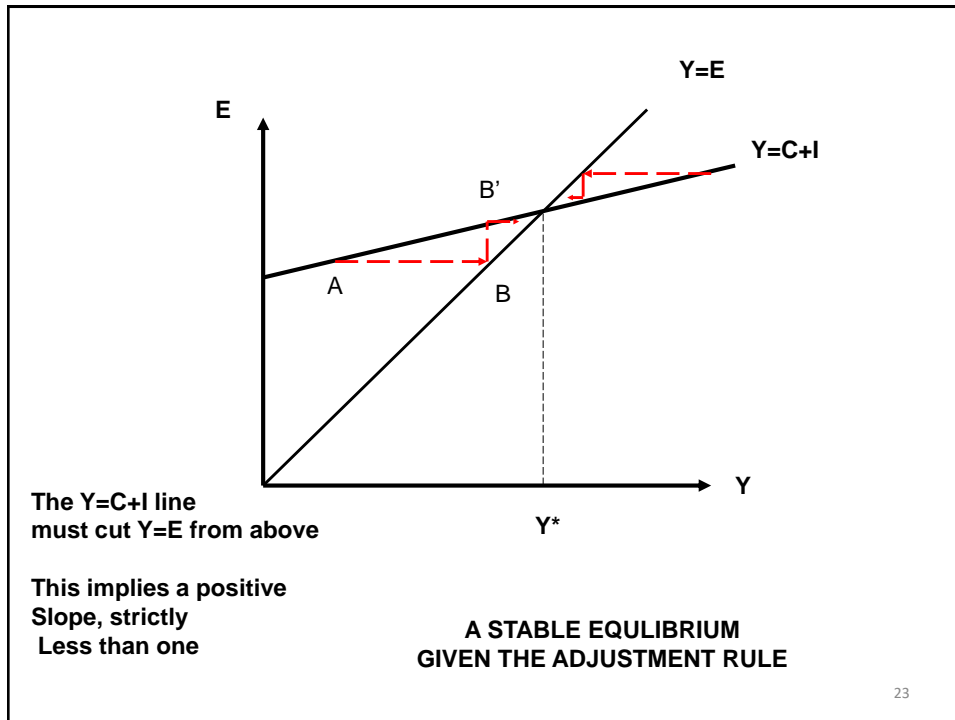
- If planned expenditure (we can now call it aggregate demand) is more than output, output Y increases
- If planned expenditure is less than output, output Y decreases
- In other words output, Y, adjusts to the flow of expenditure, E, *in the short run*
- If planned expenditure is *less* than output then producers find that they are experiencing **an unplanned accumulation of inventories**, thus they will cut back production and output
- If planned expenditure is *more* than output producers will find that they are experiencing an **unplanned decumulation of inventories**, hence will increase current production
- This will go on till plans are fulfilled, equilibrium attained

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## Difference between Saving & Investment

- Saving and Investment are distinct notions
- Saving is done by Households – in different financial instruments (bank deposits, shares, bonds, even real estate etc.)
  - Remember – in Macroeconomics you do not invest in Shares – you save in shares.
- Investment is done by firms in plant and machinery as well as construction (i.e., a place like a factory / flat for an office and not for residential purpose)
- When the plans of households match that of firms – macroeconomic equilibrium is attained

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## Stability

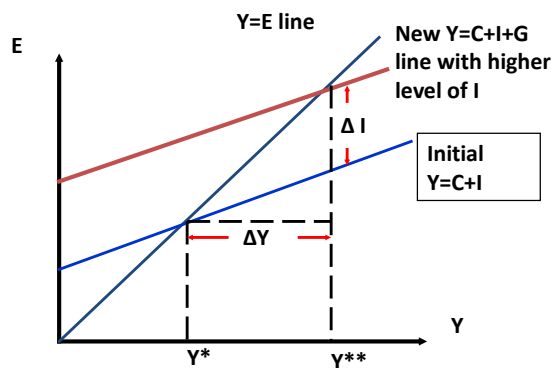
- The stability condition is satisfied since  $C+I$  has a positive intercept and a positive slope less than one (mpc lies between 0 and 1)
- Check what would happen if mpc was 1 or the intercept was not positive, but 0

## SHIFTS IN EXOGENOUS VARIABLES

- Suppose there is a rise in autonomous investment  $I$ , then planned expenditure  $C+I$  increases (shifts to a higher level for all values of  $Y$ )
- In the new equilibrium  $Y$  is higher than before
- Why does this happen? How?

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### THE INCREASE IN EQUILIBRIUM INCOME IS MORE THAN THE RISE IN INVESTMENT



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## THE MULTIPLIER

- First visualize it geometrically
- Can you work out the reasoning?
- Suppose investment increases by  $\Delta I$ , then immediately  $Y$  increases by  $\Delta Y$ , this induces consumption to increase by  $c\Delta Y$ , so income goes up by  $c\Delta y$ , then *that* induces an increase of consumption by  $c^2\Delta Y$ , and so on till  $Y=\text{planned } E$ , is attained once more
- The expansion is in the series  $\Delta Y + c\Delta y + c^2\Delta y + c^3\Delta y + \dots$

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## Multiplier

- Mathematically
- $Y = C(Y) + I$ ,  $\Delta I > 0$
- $dY = C'dY + dI$
- $dY(1-C') = dI$
- $dY/dI = 1/(1-C')$
- $C'$  is the partial derivative of  $C$  with respect to  $Y$
- $(1-C')$  is the marginal propensity to save
- Note:  $dY/dI > 1$

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## A NUMERICAL EXAMPLE

- Consider an economy with no government
- $C = 100 + 0.8Y$  and  $I = 50$
- Find the equilibrium income
- What is the level of saving in equilibrium?
- If output was at the level 800 what would the level of unintended inventory accumulation be?
- If  $I$  rises to 100 what is the new  $Y$ ?
- What is the value of the multiplier?

### Answers:

- $Y = 750$
- $S = 50$
- Unintended inventories would be 10
- New  $Y = 1000$
- Multiplier is 5

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## IS-LM Model

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# The IS-LM model

## Mr. Keynes and the "Classics"; A Suggested Interpretation

J. R. Hicks

*Econometrica*, Volume 5, Issue 2 (Apr., 1937), 147-159.

- The IS-LM model translates the General Theory of Keynes into neoclassical terms (often called the *neoclassic synthesis*)
- It was proposed by John Hicks in 1937 in a paper called **"Mr Keynes and the 'Classics': A Suggested Interpretation"** and enhanced by Alvin Hansen (hence it is also called the Hicks-Hansen model).
- The model examines the combined equilibrium of two markets :
  - The **goods market**, which is at equilibrium when investments equal savings, hence **IS**.
  - The **money market**, which is at equilibrium when the demand for liquidity equals money supply, hence **LM**.
  - Examining the joint equilibrium in these two markets allows us to determine two variables : output **Y** and the interest rate **i**.

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## Financial Markets ....

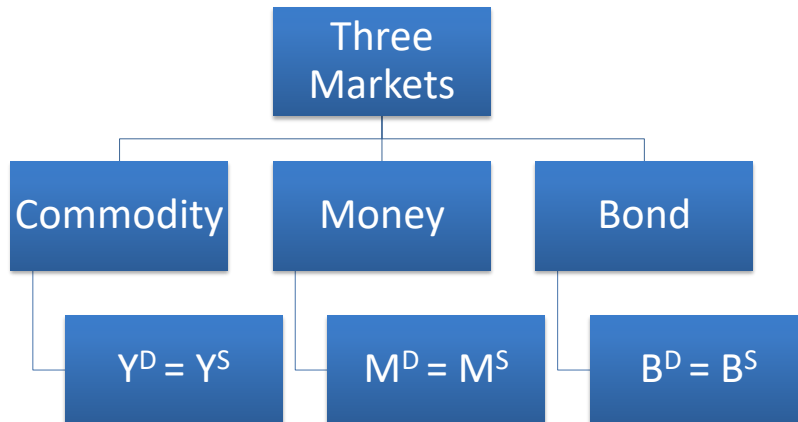


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## What is IS-LM

- Hicks' & Hansen's interpretation of Keynesian Macroeconomics



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## THE IS-LM MODEL

- **Assumptions**
  - Short run
  - Fixed installed capacity of physical capital:  $Y = F(\bar{K}, L)$
  - Prices of goods and services do not change
  - No international capital mobility, however, there is international trade in goods and services
- No explicit labour market
- There is money, as well as financial assets

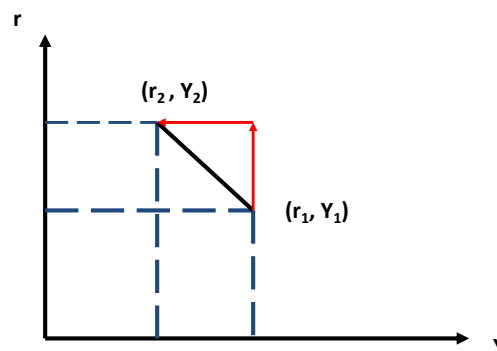
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## THE MARKET FOR GOODS AND SERVICES

- $Y = C(Y - T) + I(r) + G$
- $T$  – Taxes;  $G$  = Government Expenditure
- Output (income) is determined by the level of aggregate demand
- We continue to assume that  $T, G$  are given
- But now we have **two** unknowns (endogenous variables)  $r$  and  $Y$
- We need more information to solve

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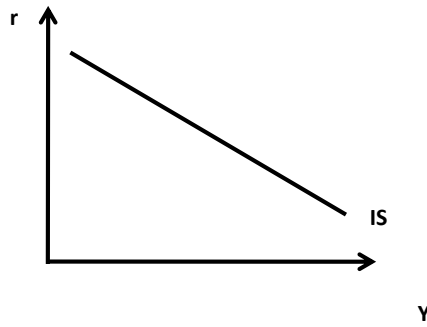
## DERIVING THE IS CURVE



Consider a combination of  $r$  and  $Y$  that solve the IS equation, then consider a higher  $r$ . At a higher  $r$ , investment will be lower, aggregate demand will be lower than at the initial  $Y$ , and hence  $Y$  will fall to restore equilibrium. Follow the red arrows.

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## IS Curve

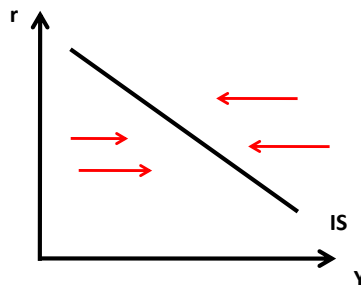


The IS curve (need not be linear) has a negative slope throughout. It is the locus of all  $r$  and  $Y$  that sets Aggregate Demand equal to Income

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## IS Curve

What happens if the economy is not on the IS curve?  
The goods and services market is not in equilibrium.  
Will there be changes that bring the economy on to the IS curve? Use the adjustment rule to find the answer.



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## EQUILIBRIUM AND THE SAVING INVESTMENT BALANCE

- We had noted earlier that the 'income equal to expenditure' relationship was equivalent to the 'savings-investment balance'
- This would be true when interpreting the IS curve too
- $Y = C(Y - T) + I(r) + G$
- For keeping things simple, take  $T$  &  $G$  as exogenous and each equal to 0

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## IS Curve

- Then it follows,
- $Y - C(Y) = I(r)$
- $S(Y) = I(r)$
- Could it be that saving does change with the rate of interest?
- Could it be that investment is also determined by variations in income, especially an expected rise in income (aggregate demand)?

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## IS Curve

- $S=I$  would be the equation of the IS curve in this version of the model, depicting the locus of all  $r$  and  $Y$  such that the goods and services market is in equilibrium, i.e. planned expenditure is equal to planned production or output
- What will be the slope of the IS curve?

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## MONEY AND FINANCIAL ASSETS

- Money is a financial asset, but it does not earn any interest or rate of return if we just hold on to it
- There is a large variety of financial assets that do earn interest or some rate of return, like a bank deposit or a government bond or a share of a company

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## Interest Rate

- Suppose you have a fixed deposit Rs100 for 1 year last year, and it earns interest of Rs10 after 1 year. The return appears to be 10%
- But suppose prices have increased by 10% by the end of the year.
- Then the Rs100 last year has exactly the same purchasing power of Rs110 this year.
- What “real” return did you have?

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## Interest Rates

- Real rate of interest:  $r$
- Nominal rate of interest:  $i$
- Rate of inflation:  $\pi$
- It is easy to see
- $r = i - \pi$
- Same as  $i = r + \pi$  : called the Fisher equation, after the economist Irving Fisher
- Fisher effect: the nominal interest rate is determined by money supply induced inflation and the real return determined by the demand and supply of financial assets

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## THE MONEY DEMAND FUNCTION

$(M/P)^d$  = real money demand, depends

— negatively on  $i$

$i$  is the opportunity cost of holding money

— positively on  $Y$

Higher  $Y \Rightarrow$  more spending, more transactions

$\Rightarrow$  so, need more money

("L" is used for the money demand function because money is the most liquid asset.)

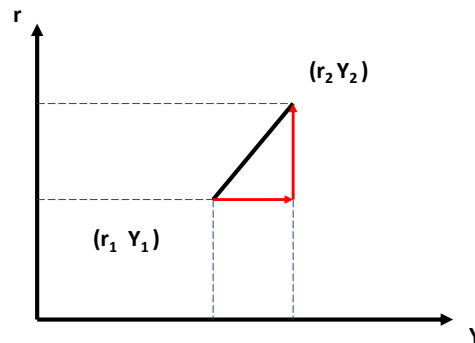
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## THE MONEY MARKET

- The demand for money (real balances)
- In the short run, prices are not adjusting, so we can assume  $r=i$
- $(M/P)^d = L(r, Y)$
- We will assume that the supply of real balances is given, fixed exogenously by the central bank :  $(M/P)^s = (\underline{M}/P)$
- Money market equilibrium
- $L(r, Y) = (\underline{M}/P)$ 
  - If  $r \uparrow$  then  $L \downarrow$
  - If  $Y \uparrow$  then  $L \uparrow$

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## DERIVING THE LM CURVE



Consider any  $(r, Y)$  such that the money market is in equilibrium. Now consider a higher income. Given financial wealth, agents need to transact more and therefore require more real balances. To acquire this they sell bonds, bond prices fall and interest rate rises.

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## THE SIGN OF THE SLOPE

- The LM curve is positively sloped.
- The adjustment rule in the money market:
- If demand for real balances  $>$  supply, interest rate rises
- If demand for real balances  $<$  supply, interest rate falls
- What is the economic process?

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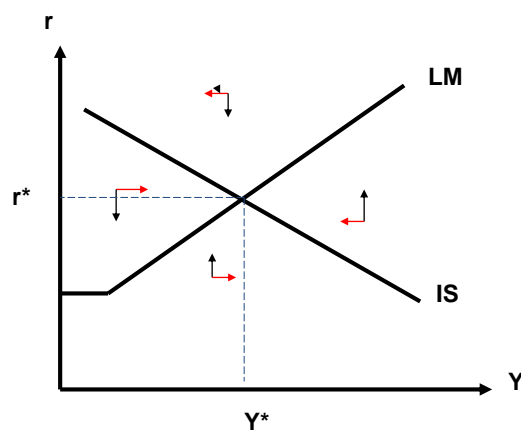


## THE MACROECONOMIC SYSTEM

- Now we have two equations in the two unknowns  $r$  and  $Y$
- $Y = C(Y - T) + I(r) + G$  : IS CURVE
- $\overline{(M/P)} = L(r, Y)$  : LM CURVE
- The IS curve is the locus of all  $(r, Y)$  combinations that make output equal to aggregate demand
- The LM curve is the locus of all  $(r, Y)$  combinations that make demand for real balances equal to the exogenously given supply

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## THE MACROECONOMIC EQUILIBRIUM



The arrows show how  $r$  and  $Y$  will adjust if the economy is not on the IS or the LM curve

The macro economic equilibrium in the goods and services as well as the money market

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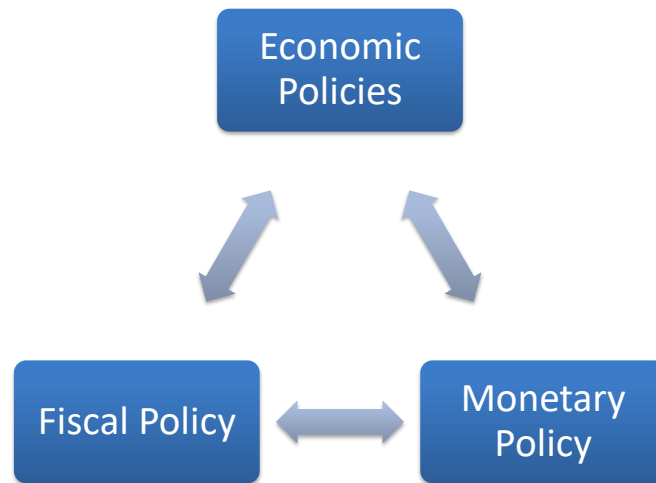
## THE EXOGENOUS VARIABLES

- We are now ready to play around with changes in the levels of the exogenous variables  $G$ ,  $T$ ,  $NX$ ,  $M/P$  and investigate the effects of fiscal and monetary policy on the macro economy: income, output, employment, interest rate consumption, investment and so on
- And that's the policy story....

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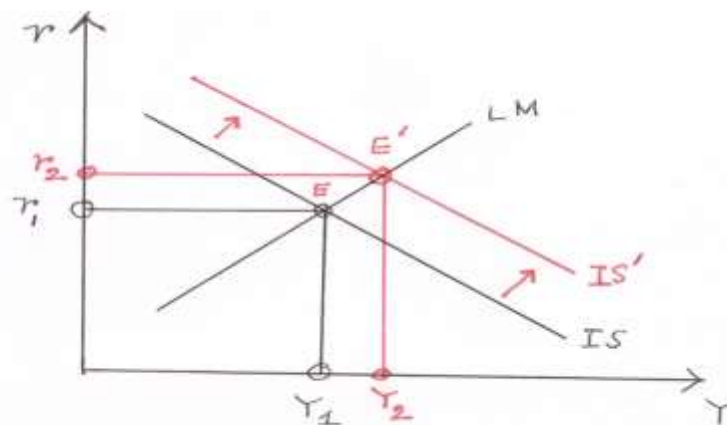
## FISCAL & MONETARY POLICIES IN THE IS-LM MODEL

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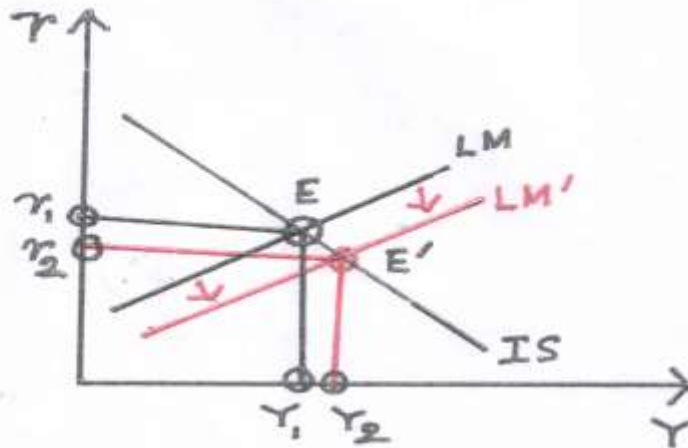
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**Impact of an increase in Government Expenditure in the IS-LM Model –  
Shifting of the IS Curve and Crowding Out**



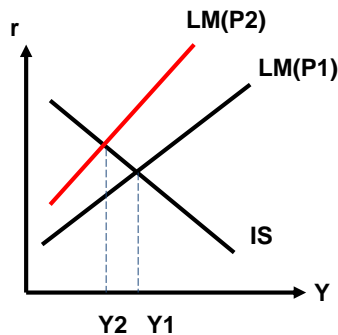
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**Impact of an increase in Money Supply in the IS-LM Model**  
**Shifting of the LM curve**

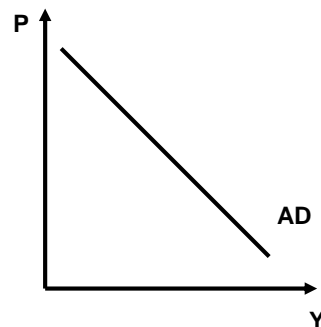


Aggregate  
Demand

## AGGREGATE DEMAND WITH FLEXIBLE PRICES



AS  $P$  INCREASES,  $M/P$  FALLS  
 REAL BALANCES FALL, MONEY  
 DEMAND  $>$  MONEY SUPPLY, THUS  
 $r$  RISES FOR ALL  $Y$ , LM SHIFTS UP  
 $P_2 > P_1$ , SO FOR HIGHER  $P$ ,  $Y$  IS LOWER



AD: ALL  $(P, Y)$  SUCH THAT  
 ALL GOODS AND ASSET  
 MARKETS ARE IN EQUILIBRIUM

EACH POINT ON AD IS  
 AN IS-LM INTERSECTION

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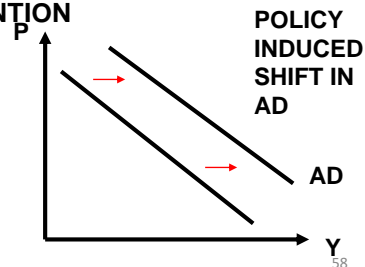
## POLICY SHIFTS IN EXOGENOUS VARIABLES

MONEY SUPPLY (NOMINAL BALANCES) INCREASES, LM SHIFTS  
 DOWN,  
 $Y$  INCREASES FOR ALL  $P$ , IMPLIES AD SHIFTS OUT TO THE RIGHT

TAX REDUCTION OR GOVERNMENT SPENDING INCREASE SHIFTS IS  
 CURVE TO THE RIGHT, THUS  $Y$  RISES FOR ALL  $P$ , THIS IMPLIES  
 AD SHIFTS TO THE RIGHT

ANY EXPANSIONARY POLICY INTERVENTION  
 SHIFTS THE AD TO THE RIGHT

WAITING FOR THE AS CURVE  
 TO COMPLETE A MEDIUM RUN  
 MODEL TO STUDY FLUCTUATIONS



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## **WHEN PRICES ARE FULLY FLEXIBLE**

- **In deriving the AD curve we allowed the price level to change**
- **How can we understand aggregate supply?**
- **If prices are fully flexible then all productive resources should be fully utilized**

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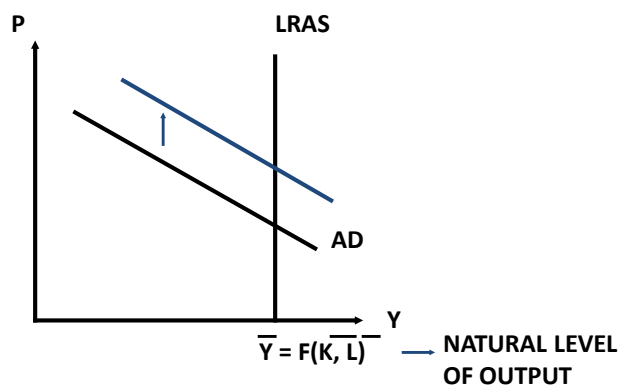
AS Curve

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- As long as there are available resources in markets, the price of the resource (wage rate in the case of labour) would fall until the entire excess supply would be absorbed
- Aggregate supply in such a situation would hit a maximum level
- Any change in aggregate demand would lead only to a rise in the price level

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## Long Run Supply Curve



LRAS: LONG RUN AGGREGATE SUPPLY WHICH IS  $\bar{Y}$ , WHERE ALL AVAILABLE RESOURCES (K, L) HAVE BEEN UTILIZED FOR PRODUCTIVE PURPOSES

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## Natural Rate of Unemployment

- Given the imperfections in the labour market that impede workers to instantaneously get (or switch) jobs – the economy tends to an average level of unemployment around which the actual level may fluctuate with changing conditions and activity levels in the economy – this is called the **NATURAL RATE OF UNEMPLOYMENT**

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## SOME NOTABLE ISSUES

- When we had earlier assumed that the price level was fixed, the supply curve was a horizontal line, and aggregate demand determined the level of output and income
- When all resources are utilized through complete flexibility of prices, then whatever be the level of demand the output and income in the economy is fixed, changes in demand change the price level *only*

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## SOME NOTABLE ISSUES

- The available labour resources being fully utilized does not necessarily mean that *everyone* is employed – there could be people who do not want to work at the ongoing wage rate, there could be people who are looking for a job or are between jobs – structural, seasonal, frictional unemployment

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## ECONOMIC GROWTH AND IMPROVEMENTS IN LRAS

- The shifting of the LRAS (to the right) over a very long time implies that the total productive capacity is enhanced.
- How could this happen? More people who can work, but more importantly, more machines and new technologies that can help people create more output.
- This is “economic growth” or capital accumulation which we will discuss later in the course.
- There could be adverse supply shocks too – the LRAS moving to the left – for instance, earthquake, pandemic, war

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## GETTING AN UPWARD RISING AGGREGATE SUPPLY CURVE

- Instead of assuming all prices are rigid, we now assume that prices do change but *some* prices are slow in adjusting and “sticky”
- The labour market (remember wage rates are important “prices” in an economy) is in many ways different from other goods and services markets
- Very often wages are “sticky” and prevent complete flexibility of prices
- This in turn prevents the natural rate of output being attained in the short run

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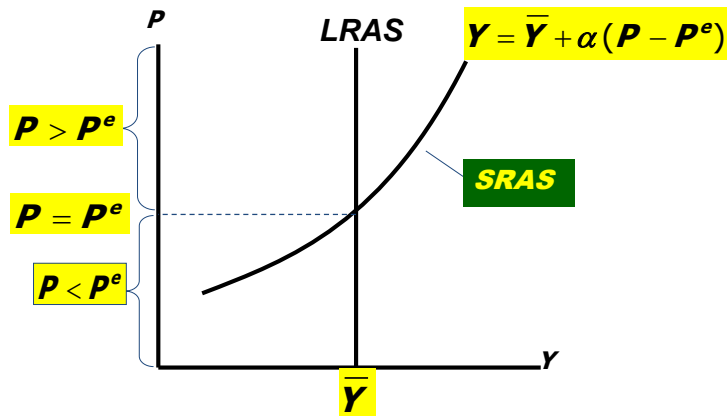
## SRAS Function

$$Y = \bar{Y} + \alpha (P - EP), \alpha > 0$$

Where,  
 $Y$  = Output;  $\bar{Y}$  = Natural Level of Output;  
 $P$  = Price Level  
 $EP$  = Expected Price Level;  
 $1/\alpha$  = Slope of the AS curve

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## THE AGGREGATE SUPPLY RELATIONSHIP



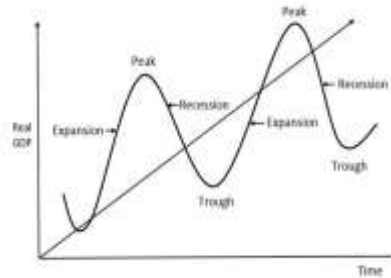
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## Some Peculiarities of SRAS

- Why the SRAS curve is bow-shaped:
- At low levels of output, there are lots of unutilized and under-utilized resources available, so it is not terribly costly for firms to increase output, and therefore firms do not require a big increase in prices to make them willing to increase output by a given amount.
- In contrast, at very high levels of output, when unemployment is below the natural rate and capital is being used at higher than normal intensity levels, it is relatively costly for firms to increase output further.
- Hence, a larger increase in prices is required to make firms willing to increase their output.

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### Cyclical versus Structural Means



Structural Measures

Cyclical Measures

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## Cyclical Measures

### Fiscal Policy

- Reduce Tax Rate
- Increase Government Expenditure

### Monetary Policy

- Reduce Policy Repo rate
- Reduce CRR
- Increase Liquidity

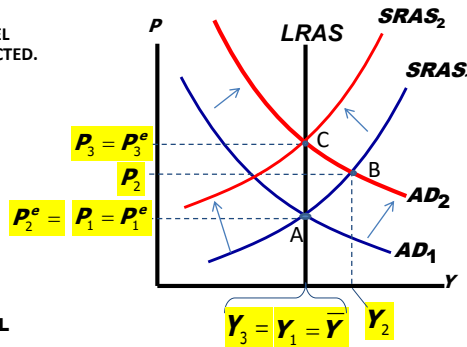
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## Monetary & Fiscal Policies

SUPPOSE A POSITIVE AD SHOCK MOVES OUTPUT ABOVE ITS NATURAL RATE AND  $P$  ABOVE THE LEVEL PEOPLE HAD EXPECTED.

$$SRAS \text{ equation: } Y = \bar{Y} + \alpha(P - P^e)$$

OVER TIME,  $P^e$  RISES,  $SRAS$  SHIFTS UP, AND OUTPUT RETURNS TO ITS NATURAL RATE.



- Short Run Movement: A to B (Both Price & Income / Output are higher;  $Y_2 > Y_1$  &  $P_2 > P_1$ )
- Long Run Movement: B to C (Only Price is higher but Income is back to the old level;  $Y_3 = Y_1$  &  $P_3 \gg P_1$ )

## Open Economy Macroeconomics

## TRADE SURPLUSES AND DEFICITS

$$NX = X - M = (Y - C - G) - I = S - I$$

- **TRADE SURPLUS:**  
OUTPUT > SPENDING AND
- **EXPORTS > IMPORTS**  
SIZE OF THE TRADE SURPLUS =  $NX$
- **TRADE DEFICIT:**  
SPENDING > OUTPUT AND
- **IMPORTS > EXPORTS**  
SIZE OF THE TRADE DEFICIT =  $-NX$

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## INTERNATIONAL CAPITAL FLOWS

- **Net capital outflow**  
=  $S - I$   
= Net outflow of “loanable funds”  
= Net purchases of foreign assets  
(the country’s purchases of foreign assets  
minus foreign purchases of domestic  
assets)
- When  $S > I$  country is a net lender
- When  $S < I$  country is a net borrower

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## THE LINK BETWEEN TRADE AND CAPITAL FLOWS

$$NX = Y - (C + I + G)$$

*implies*

$$NX = (Y - C - G) - I$$

$$= S - I$$

**TRADE BALANCE = NET CAPITAL OUTFLOW**

**Thus a country with a trade deficit ( $NX < 0$ ) is a net borrower**

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### S, I and CAB of Select countries(% of GDP)

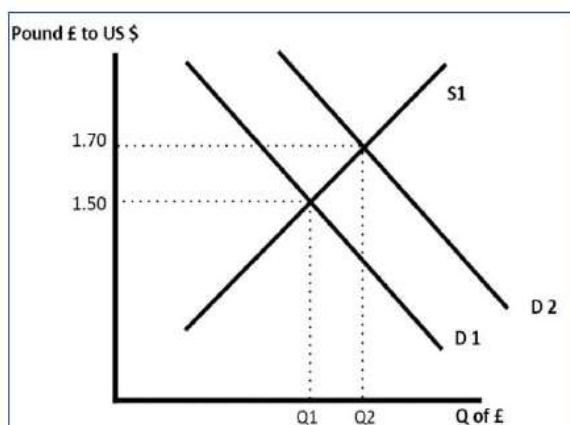
Country	2000			2010			2018		
	Investment	Saving	CAB	Investment	Saving	CAB	Investment	Saving	CAB
Brazil	18.9	15.1	-3.8	21.8	18.4	-3.4	15.4	14.6	-0.8
China	34.3	36.0	1.7	47.9	51.8	3.9	44.2	44.6	0.4
India	24.3	23.7	-0.6	36.5	33.7	-2.8	31.6	29.1	-2.5
Russia	18.4	34.7	16.3	20.3	24.4	4.1	23.0	30.1	7.0
UAE	22.6	38.8	16.2	27.1	31.3	4.2	22.6	29.2	6.6
USA	23.6	20.6	-3.9	18.4	15.1	-2.9	21.1	19.0	-2.3

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## Introducing Exchange Rate

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## How are Exchange Rates Determined?



A rise in demand for Pound Sterling leads to an increase in the value of the £ to \$ – from £1 = \$1.50 to £1 = \$1.70



Elementary Dr Watson! By Demand for and Supply of Foreign Exchange



### Factors determining Demand for and Supply of Foreign Exchange

#### Inflation

- If inflation in the UK is relatively lower than elsewhere, then UK exports will become more competitive and there will be an increase in demand for Pound Sterling to buy UK goods.
- Also foreign goods will be less competitive and so UK citizens will buy less imports.
- Therefore countries with **lower inflation rates** tend to see an **appreciation** in the value of their currency.

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### Factors determining Demand for and Supply of Foreign Exchange

#### Interest Rates

- If UK interest rates rise relative to elsewhere, it will become more attractive to deposit money in the UK.
- One gets a better rate of return from saving in UK banks, Therefore demand for Pound Sterling will rise.
- **Higher interest rates** cause an **appreciation**.
- Cutting interest rates tends to cause a depreciation

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**Factors determining Demand for and Supply of Foreign Exchange**  
**Speculation**

- If speculators believe the Pound sterling will rise in the future, they will demand more now to be able to make a profit.
- This increase in demand will cause the value to rise.
- Therefore movements in the exchange rate do not always reflect economic fundamentals, but are often driven by the sentiments of the financial markets.
- For example, if markets see news which makes an interest rate increase more likely, the value of the pound will probably rise in anticipation.

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**Factors determining Demand for and Supply of Foreign Exchange**  
**Change in Competitiveness**

- If British goods become more attractive and competitive this will also cause the value of the exchange rate to rise.
- For example, if the UK has long-term improvements in labour market relations and higher productivity, good will become more internationally competitive and in long-run cause an appreciation in the Pound.
- This is a similar factor to low inflation.

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**Factors determining Demand for and Supply of Foreign Exchange**  
**Relative strength of other currencies**

- In 2010 and 2011, the value of the Japanese Yen and Swiss Franc rose because markets were worried about all the other major economies – US and EU.
- Therefore, despite low interest rates and low growth in Japan, the Yen kept appreciating.
- In the mid 1980s, the Pound fell to a low against the Dollar – this was mostly due to strength of Dollar, caused by rising interest rates in the US.

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**Factors determining Demand for and Supply of Foreign Exchange**  
**Balance of Payments**

- A deficit on the current account means that the value of imports (of goods and services) is greater than the value of exports.
- If this is financed by a surplus on the financial / capital account then this is OK.
- But a country who struggles to attract enough capital inflows to finance a current account deficit, will see a depreciation in the currency.
- For example current account deficit in US of 7% of GDP was one reason for depreciation of dollar in 2006-07.
- Please note that if a country experiences huge surplus on both capital account and current account as well as increase in reserves then it means the currency must be manipulating its exchange rate.

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Factors determining Demand for and Supply of Foreign Exchange  
**Government Debt**

- Under some circumstances, the value of government debt can influence the exchange rate.
- If markets fear a government may default on its debt, then investors will sell their bonds causing a fall in the value of the exchange rate.
- For example, Iceland debt problems in 2008, caused a rapid fall in the value of the Icelandic currency.

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Factors determining Demand for and Supply of Foreign Exchange  
**Recession**

- A recession may cause a depreciation in the exchange rate because during a recession interest rates usually fall.
- However, there is no hard and fast rule. It depends on several factors

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**Factors determining Demand for and Supply of Foreign Exchange**  
**Government / Central Bank Intervention**

- Some governments attempt to influence the value of their currency.
- For example, China has sought to keep its currency undervalued to make Chinese exports more competitive. They can do this by buying US dollar assets which increases the value of the US dollar to Chinese Yuan.

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## To sum up....

	Factor	Impact on Exchange Rate
1	Inflation	Lower inflation is associated with appreciation
2	Interest Rates	Higher interest rate cause an appreciation
3	Speculation	Depends on the nature of speculation
4	Change in Competitiveness	Higher competitiveness leads to appreciation
5	Relative strength of other currencies	Depends on the currency
6	Balance of Payments - Current A/C (CA) - Capital A/C (KA)	Deficit (or inability to fund the CA deficit) is associated with depreciation
7	Government Debt	Huge Debt may cause depreciation
8	Recession	Recession may cause a depreciation – but no hard & fast rule
9	Government / Central Bank Intervention	Depends in the nature & quantum of intervention – and the resultant liquidity

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# Thank You

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