

# IS-MP-IA

A clear, more modern alternative  
to IS-LM

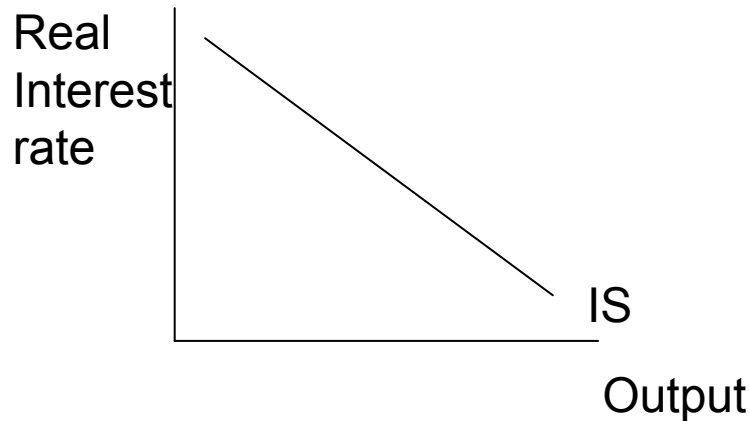
## Main References:

-Romer, David (2000), “Keynesian Macroeconomics without the LM Curve”, *Journal of Economic Perspectives*, Vol.14, No.2, pp.149-169. [Available on JSTOR.ORG].

-Chapter 26, “The Role of Money in Macroeconomics”, Lipsey and Crystal (for mainstream IS-LM).

# The IS Curve

- Links real interest rate and output.

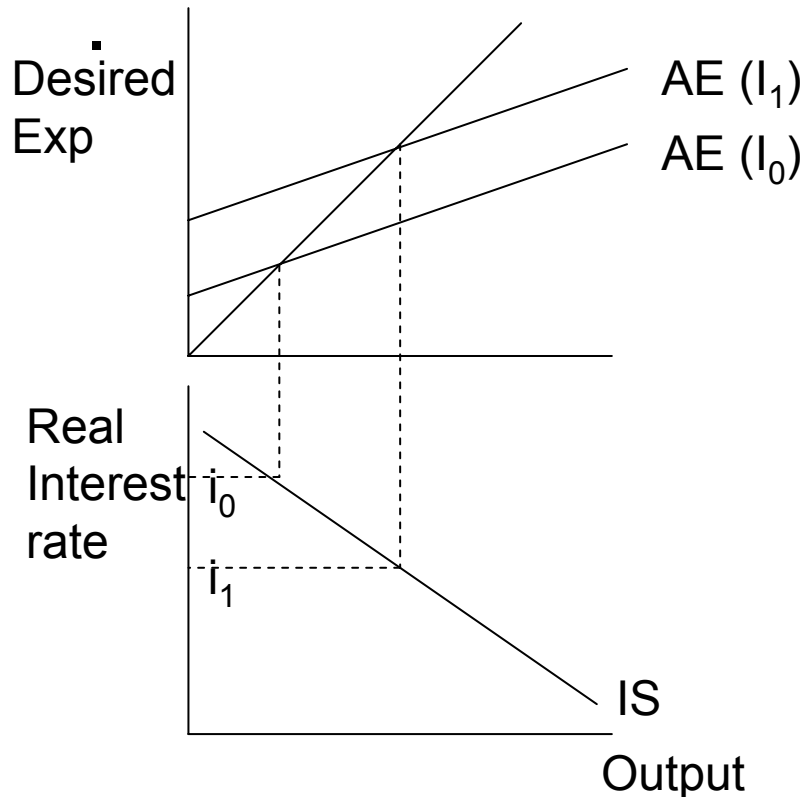


-As  $i \downarrow$ , output  $\uparrow$

-Or as  $i \uparrow \Rightarrow I \downarrow \Rightarrow$  Output  $\downarrow$

- Along IS locus,  $I=S$  in closed economy with no  $G$ .
- In open economy with  $G$ :  $(S+T+M)=(I+G+X)$

# Relationship with Aggregate Expenditure

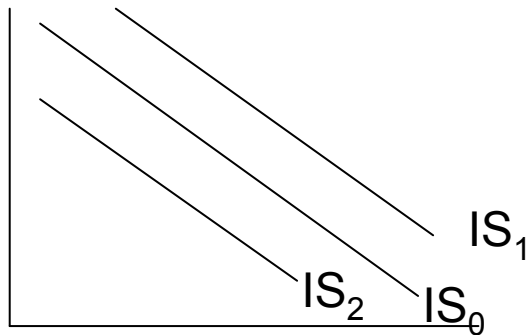


- Along 45° line, desired expenditure = output
- Note savings and autonomous consumption.

-  $i_0$  to  $i_1 \Rightarrow I \uparrow \Rightarrow AE \uparrow \Rightarrow$   
Output  $\uparrow$

# Shifts in IS Curve

- IS Curve shifts when there are changes in exogenous expenditure.
  - For example when  $G \uparrow$  ( $IS_1$ ) or consumer confidence falls ( $IS_2$ )



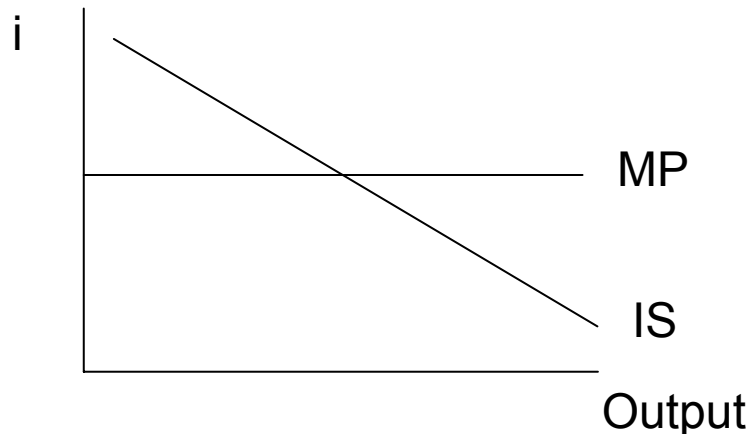
- If exogenous exp  $\uparrow$ , by how much does IS curve shift out?
  - By the initial change times the multiplier -  $1/(1-MPC)$

# Central Bank Behaviour I

- In IS-LM, CB targets money stock. In modern world, most CBs use an interest rate rule.
  - Simplest form  $r=r(\pi)$
- CB wants low inflation and high output.
  - When inflation high, concerns about inflation predominate and CB chooses high  $r$  to  $\downarrow$ inflation.
  - Why would this be the case? Think about Keynes's reasons for MD (transaction, precaution, speculation).

# Central Bank Behaviour II

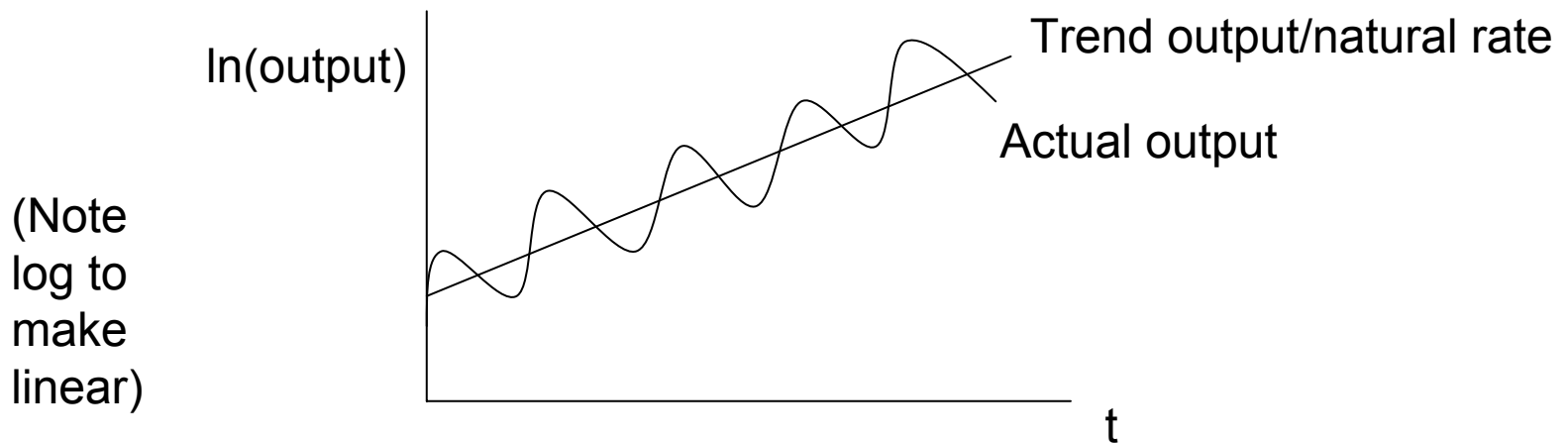
- CBs fix their  $i$  in the short-run but revisit their choice often.



- Mechanics of economy: inflation determines CB's choice of  $i$ , and IS determines output.

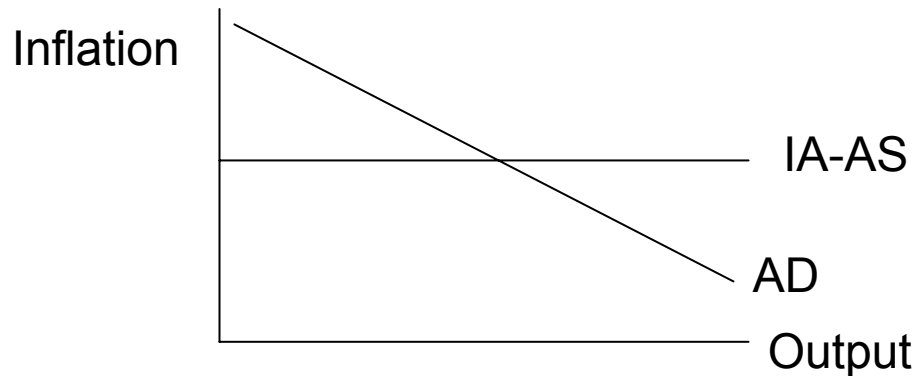
# Aggregate Supply

- At any point in time inflation is given
- In absence of inflation shocks, inflation  $\uparrow$  when output is above its natural rate, and falls when in it is below.



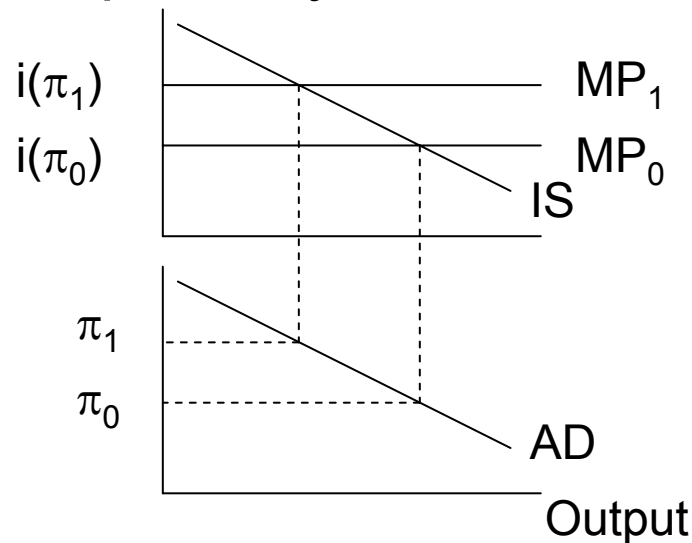
# Inflation-Adjusted Aggregate Supply

- 2 Assumptions:
  - Immediate impact of change in AD falls entirely on output (can adjust output in S-R)
  - When output=natural rate and no inflation shocks, inflation is steady:



# An example

- $\pi \uparrow$  unexpectedly.



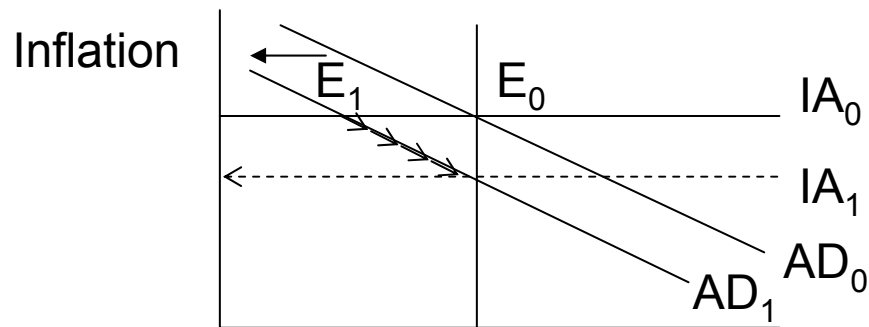
- Mechanism:  $\pi \uparrow \Leftrightarrow i \uparrow \Leftrightarrow \text{output} \downarrow$
- To note:
  - In IS-LM model: higher price level  $\Leftrightarrow \downarrow$  real money stock  $\Leftrightarrow \uparrow i$  at given output level.
  - Here we have inflation on the y-axis. Not price-level as in IS-LM.

# Mechanics

- Inflation is inherited from economy's past a  
Inflation determines real interest rate a  
real interest rate determines output.
- No simultaneity as in IS-LM (3 eq in 3  
unknowns).

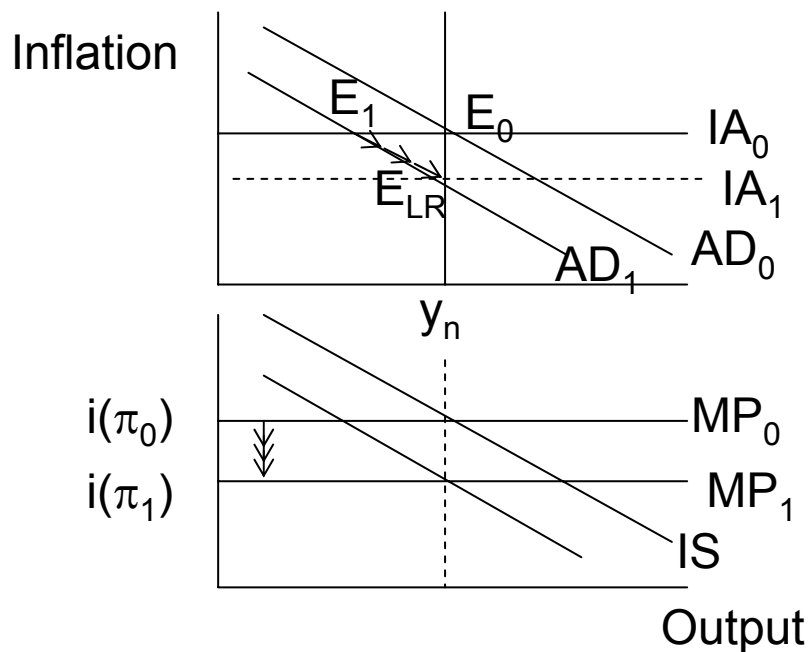
# Bringing it all together: Another example.

- Economy starts in equilibrium (output is at nat rate and inflation steady)
- Then there is a shock – consumer confidence falls (so consumption function shifts down and AD falls).



- All S-R impact is on  $y_n$   $\Rightarrow$  inflation begins to fall  $\Rightarrow$  CB  $\downarrow i \Rightarrow$  Output  $\uparrow$
- Note this all happens slowly and the process continues until we reach  $y_n$

# Continued...



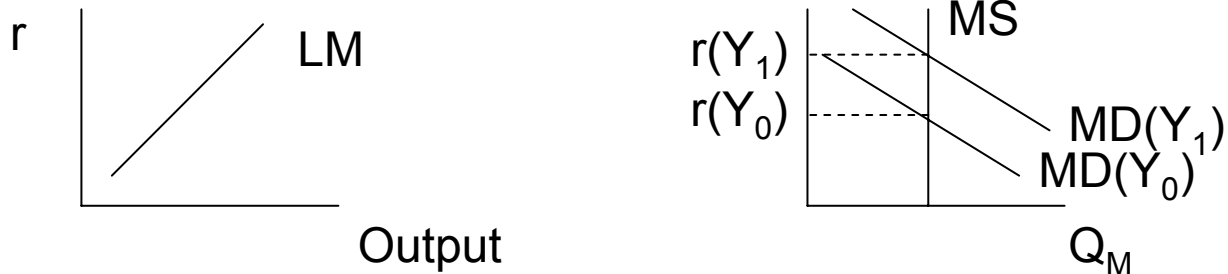
A good example can be found in the U.S. after the Gulf War of 1990. Demand decreased causing reduced output. Inflation began to fall, causing interest rates to be reduced. Output subsequently increased.

# Appendix: the Money Market with the traditional LM curve.

- Keynes's MD motivations

- Transaction, precaution, speculation

With fixed MS, as GDP  $\uparrow$ , transaction and precautionary motives cause MD  $\uparrow$ . But if MS is fixed,  $i \uparrow$ :

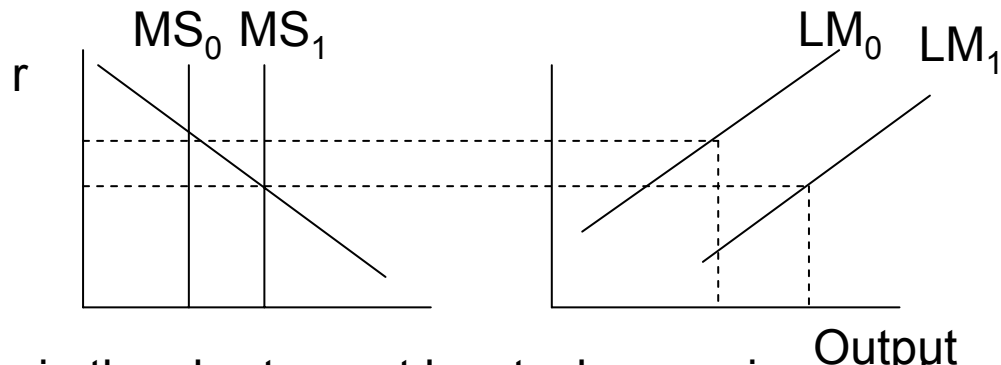


- With fixed MS, if people want more money, they must sell bonds  $\Rightarrow$   $P_{\text{BONDS}} \downarrow \Rightarrow$  interest rate  $\uparrow$

- Ex. Bond that pays £10/year. Today worth £100 ( $r=10\%$ ). If  $D_{\text{BONDS}} \downarrow \Rightarrow P_{\text{BONDS}} \downarrow$  TO £90  $\Rightarrow$  interest rate  $\uparrow$  TO  $r=(10/90)*100=11.11\%$

# Traditional LM Curve contd.

- Now let's change the MS:



- So, in the short run at least, changes in monetary changes can impact on output.
- Note that we have dispensed with all microeconomic foundations
  - Household choices are not modelled. Behaviour of consumption, investment, money demand and the nature of price adjustment are postulated and defended intuitively. Gain simplicity and lose some reality?