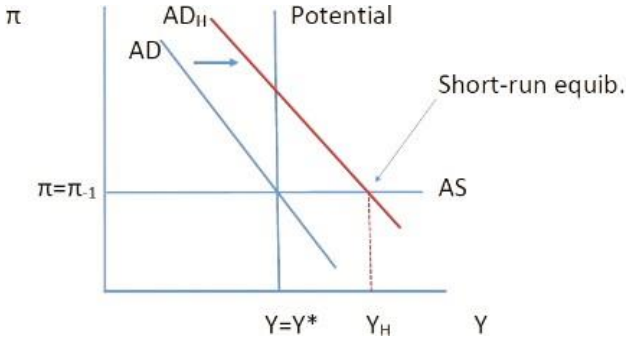
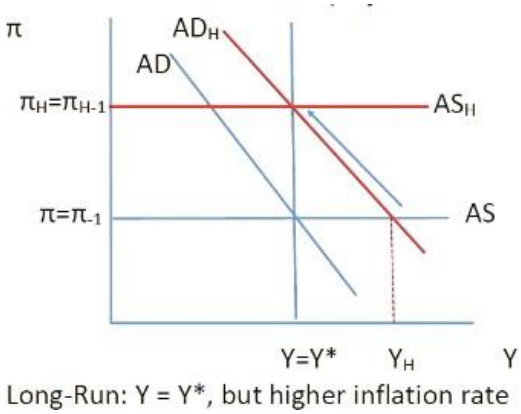
### 8.3.1 – permanent AD shock

- AD shocks (permanent)
  - Exogenous changes in AD curve



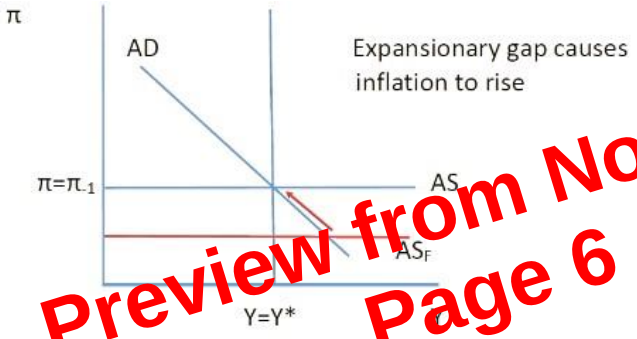




Long-Run: Y = Y*, but higher inflation rate

  - H stands for high
  - In the short run nothing happens to inflation, it takes time to respond

### 8.3.2 – temporary AS shock

- AS shocks (one-period)
  - General inflation of cost shocks to economy




Long-Run: Y=Y* and inflation returns to initial level.



### 8.3.3 – is the economy self correcting

- AD-AS model implies that while economy may experience recessionary and expansionary gaps in the short – run; it will, in the long-run, return to a position where Y = Y*
- The justification for active stabilisation policy using monetary and fiscal policy instruments is that the speed at which the economy returns to long run equilibrium may be undesirably slow

### 8.3.4 policy responses to AD shocks

- Use discretionary monetary or fiscal policy
- In theory policymakers can completely offset the effect of AD shocks
- In practice, lags mean policymakers need to be forward-looking and base policy on their forecasts
- Difficult to achieve complete stabilisation of the economy against AD shocks

### 9.1.6 – financial account

- Measures transactions between residents and non-residents involving financial assets and liabilities
- Asset is a claim by resident on non-resident e.g. shares and bonds
- Liability is a claim by non-resident on resident
- Includes equities/shares and debt (e.g. bonds)
- Direct and portfolio investment
    - Classification based on level of ownership and control
    - Direct investment is where investor has a sufficient level of ownership to have some control of business
    - Portfolio investment is where investor has no influence on operation of business e.g. purchase of 10 apple shares

### 9.1.7 – capital account

- The net acquisition/disposal of non-produced, non – financial assets e.g. sales/purchases of land for foreign embassies
- Cancellation of debt to foreign countries
    - Relatively small component of account

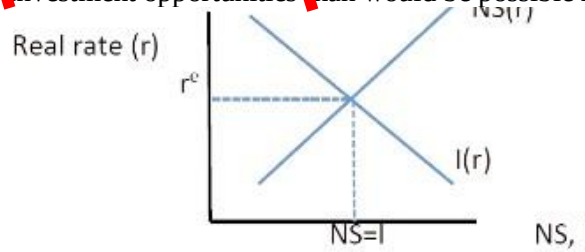
### 9.1.8 – balance of payments

- Accounting principle for balance of payments imply that
    - Current account = (-) capital and financial account or
    - Current account + capital and financial account = 0
    - Balance on capital and financial account will be the same value as the balance on the current account, though have the opposite sign



### 9.2 – national saving and investment in open economy

- ☐ In a closed economy, we have seen that national saving and investment are equal
- ☐ in an open economy, where capital and financial flows are possible, savings from other countries can finance investment
- ☐ International capital and financial flows allow countries to invest in more productive investment opportunities than would be possible relying on national saving




- ☐ in a closed economy, the real interest rate is determined by the intersection of national saving and investment schedules
- ☐ must be the case than national saving and investment are equal
- ☐ to induce the rise in national saving the domestic real interest rate must rise
- ☐ in an open economy the tight relation ship between national saving and investment is broke

### 10.2.2 – Constant returns to scale

- The CB production given features constant returns to scale in L and K
- By doubling both aggregate labour and capital we have doubled total output, and hence exhibit constant returns to scale
- The key to this cobb – Douglas function having CRS is that the exponents on labour (□) andcapital (1-□) add to one
- If the exponents sum to to more than one there are increasing returns to scale (IRS), whereas if the exponents sum to less than one there are decreasing returns to scale (DRS)

### 10.2.3 – Marginal Products

- Marginal product measures the effect on output of a change in a single input while all others inputs are held constant
- The marginal product of labour is the change in aggregate output for a small change in the labour input when both K and A are held fixed
- The aggregate marginal product of capital is the change in aggregate output for a small change in the capital input when both L and A are held fixed
- marginal product of labour:

$$MPL = (1-\alpha)\frac{Y}{L}$$

- marginal product of capital

$$MPK = \alpha\frac{Y}{K}$$

- MPL is equal to the exponent on L in the Cobb Douglas production fx by the average product of labour (Y/L)
- Similarly the MPK is just equal to the exponent on K multiplied by the average product of capital (Y/K)



### 10.3 – sources of economic growth

- Argued that labour productivity is a key driver of economic growth over the long run

### 10.3.1 – Per worker production function

- We transform the Cobb Douglas function into per worker terms

$$Y = AK^{\alpha}L^{1-\alpha}$$

- now dividing both sides by L gives

$$\frac{Y}{L} = AK^{\alpha}L^{1-\alpha}\frac{1}{L}$$

$$\frac{Y}{L} = AK^{\alpha}L^{-\alpha}$$

$$\frac{Y}{L} = A(\frac{K}{L})^{\alpha}$$

or letting $y = \frac{Y}{L}$ and $k = \frac{K}{L}$

$$y = Ak^{\alpha}$$