Faculty of Actuaries **Institute of Actuaries**

EXAMINATIONS

April 2001

Subject 107 — Economics

EXAMINERS' REPORT

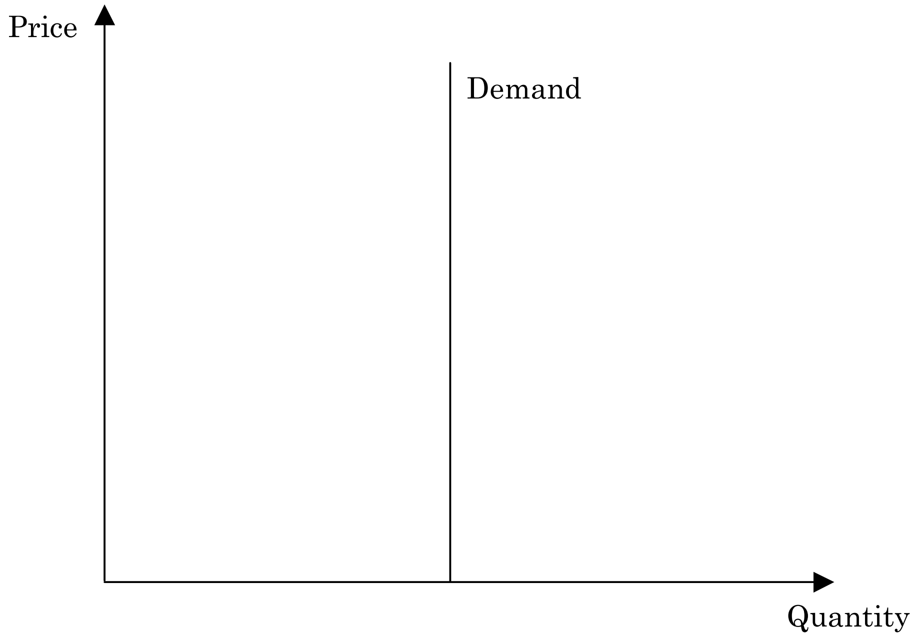
1	D
2	D
3	C
4	A
5	C
6	B
7	D
8	C
9	B
10	A
11	C
12	D
13	B
14	C
15	B
16	C
17	B
18	A or B
19	D
20	A or D
21	C
22	D
23	D
24	D
25	A
26	A

27 According to the acceleration principle investment is determined by changes in national income and small changes in national income can lead to large fluctuations in investment demand. Consequently investment is a very unstable component of aggregate demand and a major factor contributing to trade cycle fluctuations.

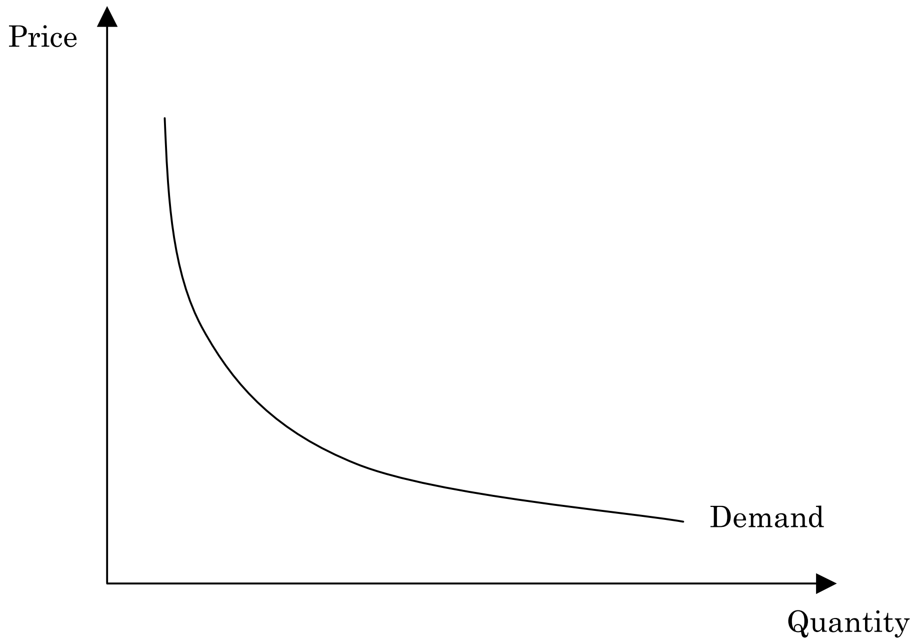
When national income is stable investment is only needed to replace machinery and equipment that has worn-out or become obsolete. When national income is rising firms will wish to expand their production capacity and will demand new investment to increase their stock of capital. When national income is falling firms will require less production capacity and investment will fall. The relationship between investment demand and the change in national income is determined by the desired capital-output ratio, this is the amount of capital needed to produce 1 unit of output.

28

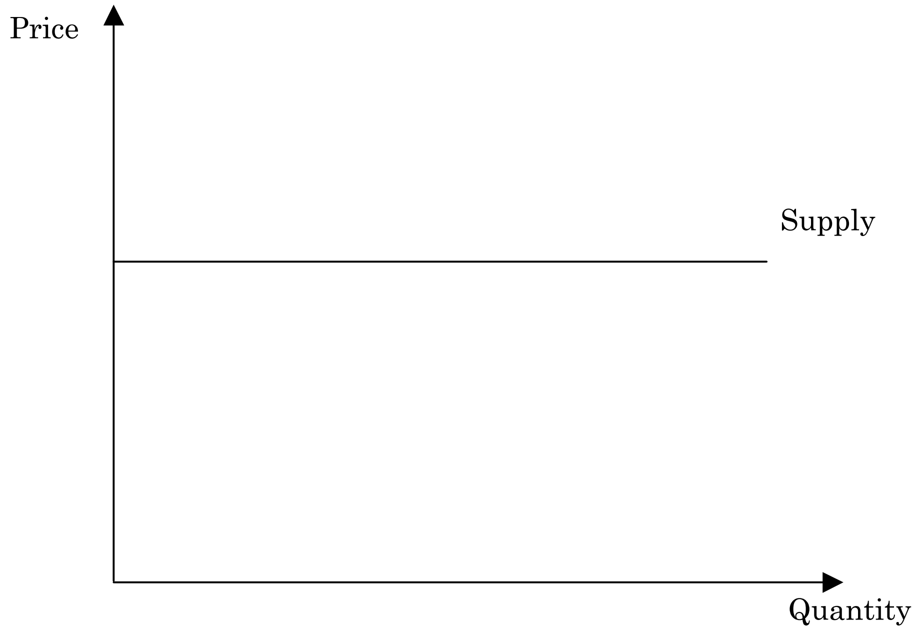
(i)



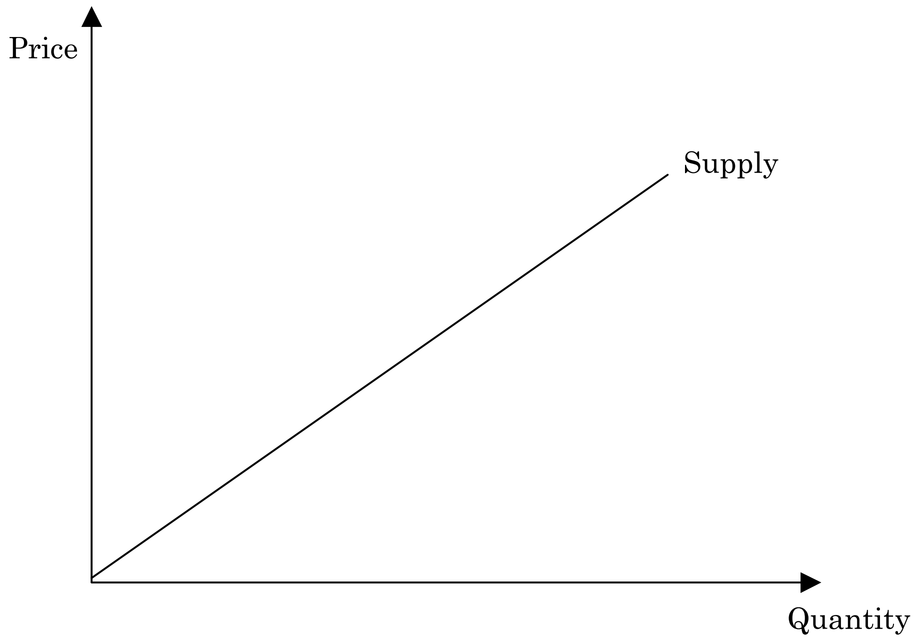
(ii)



(iii)



(iv)



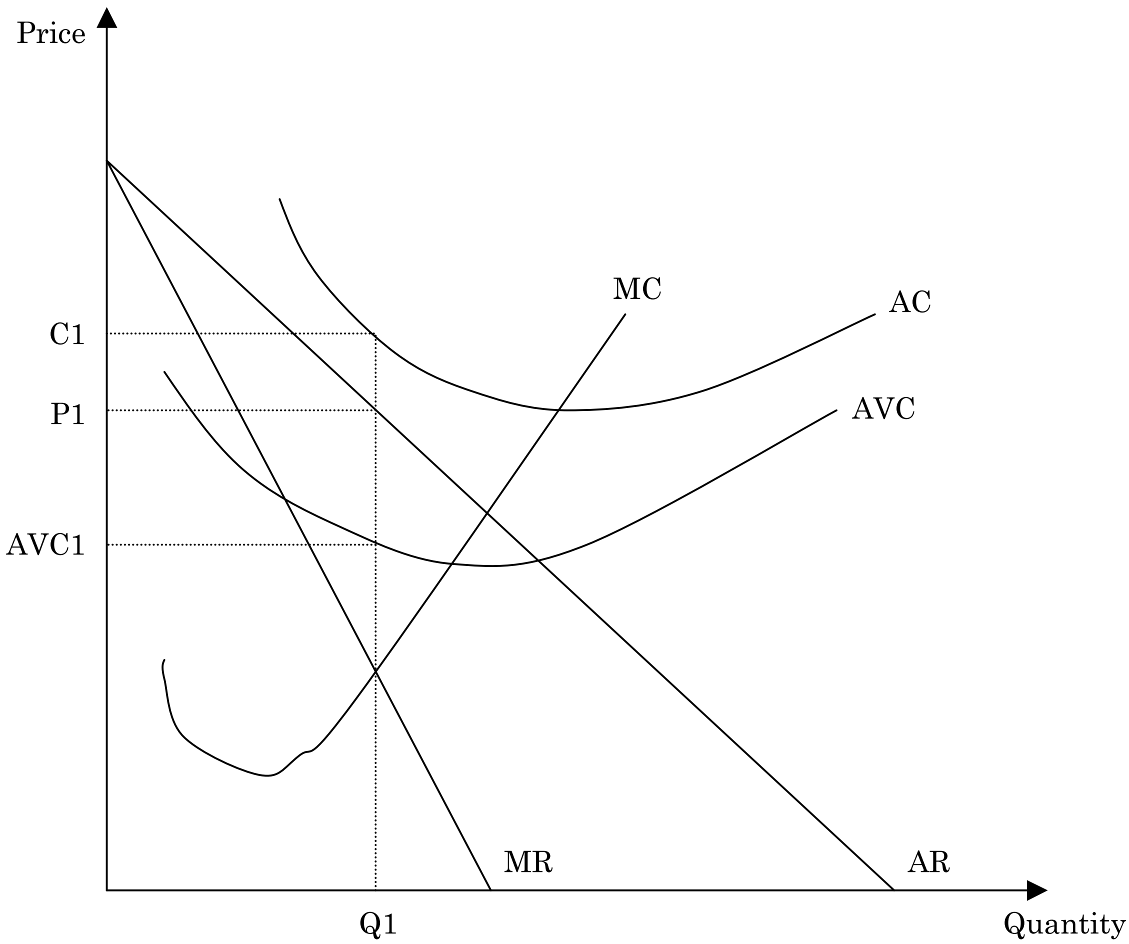
29 (i) 4 units of X and 3 units of Y

(ii) 10 units of X

(iii) 180 units of utility

(iv) 7 units of X and 5 units of Y

30



31 (i) 4 units

(ii) £840 or £841

(iii) Nothing — there is no change in output

32 (i) $S = -£100m + 0.3Y$

$= £200$ million

(ii) $dY = \dfrac{1}{1 - MPC}$ £100 million

where MPC is the marginal propensity to consumer

$dY = \dfrac{1}{1 - 0.7}$ £100 million

Therefore, national income would rise by £333 million

(iii) $Y = 100 + 0.7\,Y + 500$

$Y = £2000$ million

Therefore, $C = 100 + 0.7(2{,}000)$

$C = £1{,}500$ million

33 Crowding out is the short run consequence of expansionary fiscal policy. An increase in government expenditure or lower taxation will increase national income via the multiplier. The higher level of national income will increase the precautionary and transactions demand for money. Assuming that money supply is unchanged the higher demand for money will force up interest rates. The PSBR will also increase.

The fact that expansionary fiscal policy leads to higher interest rates will adversely affect (crowd out) private consumption and investment.

Increased public borrowing and higher interest rates might lead to large capital inflows and exchange rate appreciation which will adversely affect (crowd out) net exports.

34 (i) If the authorities conduct a contractionary open market operation, they will sell Treasury bills. The price of treasury bills will fall and the money supply will fall.

(ii) If monetary policy is sufficiently expansionary as to raise the expected rate of inflation and increase risk, then this will lead market participants to seek a higher longer-term rate of interest to compensate them for the increased inflation and risk. The result is that the long term rate of interest will rise and the price of government bonds will fall.

35 (i) A direct tax is a tax on a payment made to a factor of production, e.g. wages, rent and interest.

(ii) An indirect tax is a tax on expenditure. An indirect tax is a tax paid when a good is sold or a service provided, e.g. VAT, excise duty and customs duty.

(iii) A tax is said to be progressive if it takes an increasing proportion of a person's income as income rises.

(iv) A tax is said to be regressive if it takes a decreasing proportion of a person's income as income rises.

36 (i) True
(ii) False
(iii) True
(iv) False

37 (i) In an oligopolistic market:

- There are only a small number of firms whereas in a monopoly there is just one firm.

- There is a high degree of interdependence between firms. This means that firms have to take into account decisions made by other firms when making their price and output decisions. This is a problem that a monopolist does not have to worry about although there might be concerns about potential competition if price is set too high.

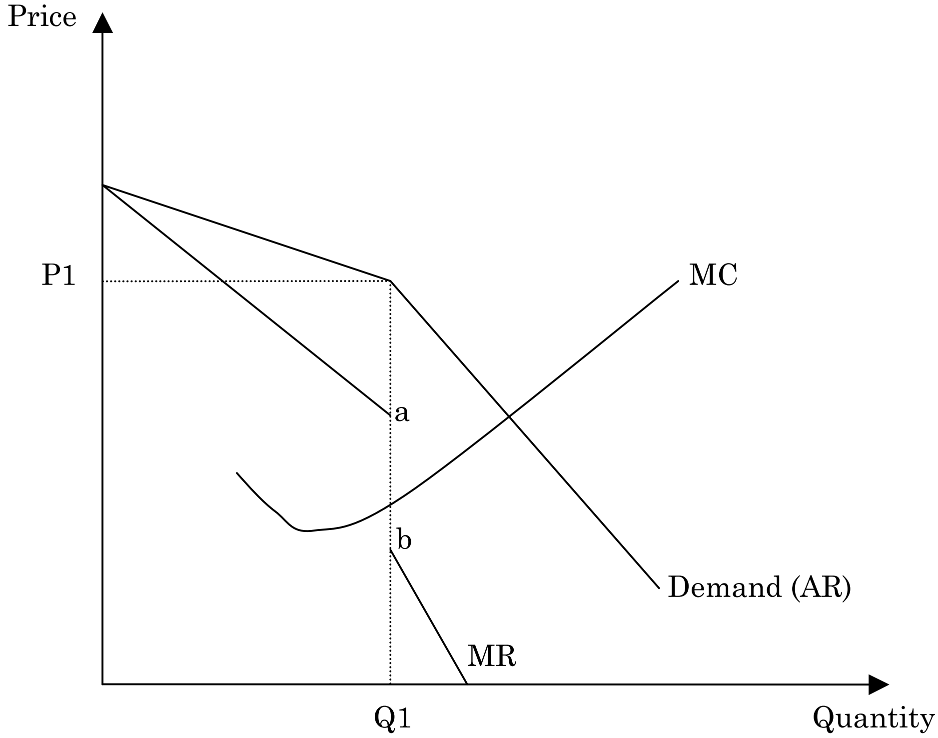
- Each firm has only a share of the market demand curve whereas for a monopoly the market demand curve is the firm's demand curve.

- Each firm may be selling either identical or differentiated products and they tend to compete with each other on both price and quality. A monopolist may also produce just one good or a variety of goods.

- There are barriers to entry in both market structures although they tend to be stronger in the case of a monopoly. The existence of barriers to entry means that there is the potential to make abnormal profits in the long run in both market structures but clearly a monopolist would have the potential to yield superior abnormal profits compared to firms operating in an oligopolistic market structure.

[10]

(ii) It is sometimes observed that prices in an oligopolistic market structure tend be sticky. This can be explained with reference to the "kinked" demand theory. According to this theory an oligopolistic firm may be reluctant to raise prices from their current level because it believes that the other firms will not raise theirs. Hence the demand curve facing the firm is perceived to be highly elastic above the current price. Conversely, if the firm cuts its price it believes that the other firms will retaliate and cut theirs and so it will not gain that many extra customers. Hence the demand curve facing the firm is perceived to be inelastic below the current price. This is depicted in the diagram below.



The perceived demand curve is elastic above the current price P1 and is perceived to be inelastic below that price. The kink in the demand curve means that so long as the marginal cost (MC) fluctuates between the region a–b where there is a discontinuity in the marginal revenue curve, then there is no reason for the firm to change its price. This combined with the fear of losing too many customers when raising prices and losing revenue when cutting prices may help explain the sticky prices that are sometimes observed under oligopoly.