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(To be filled by candidate)

Name of Candidate : Ayush Agrawal

Roll No. :

Registration Number : Date of Examination :

Exam Centre : Old Rajinder Nagar ☐ Online ☒

CSE (Main) Test Series - 2022

Test-1

ECONOMICS OPTIONAL

Microeconomics/Macroeconomics

Time Allowed : Three Hours

Maximum Marks : 250

QUESTION PAPER SPECIFIC INSTRUCTIONS

(Please read each of the following instructions carefully before attempting questions)

There are **EIGHT** questions divided in two Sections and printed in ENGLISH.

Candidate has to attempt FIVE questions in all.

Question Nos. **1** and **5** are compulsory and out of the remaining, **THREE** are to be attempted choosing at least **ONE** from each Section.

The number of marks carried by a question/part is indicated against it.

Answers must be written in the medium authorized in the Admission Certificate which must be stated clearly on the cover of this Question-cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in a medium other than the authorized one.

Word limit in questions, wherever required, may be drawn/given in the space provided for answering the question itself.

Attempts of questions shall be counted in sequential order. Unless struck off, attempt of a question shall be counted even in attempted part. Any page or portion of the page left blank in the question-cum-Answer Booklet must be clearly struck off.

(For filling by Examiners only)

Q. No.	Page No.	Maximum Marks	Marks	Total	Signature
1. (a)	4	10			
1. (b)	6	10			
1. (c)	8	10			
1. (d)	10	10			
1. (e)	12	10			
2. (a)	14	15			
2. (b)	17	15			
2. (c)	20	20			
3. (a)	23	20			
3. (b)	26	10			
3. (c)	28	20			
4. (a)	15	15			
4. (b)	34	20			
5. (a)	37	10			
5. (b)	39	10			
5. (c)	41	10			
5. (d)	43	10			
5. (e)	45	10			
6. (a)	47	20			
6. (b)	50	10			
6. (c)	52	20			
7. (a)	55	20			
7. (b)	58	15			
7. (c)	61	15			
8. (a)	64	15			
8. (b)	67	15			
8. (c)	70	20			
Grand Total					

Remarks

Observations:



SECTION-A: MICROECONOMICS

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1. (a) Substitution effect is the deciding factor about the nature of goods. Comment. (10)

Substitution Effect is the effect of a relative price change on the quantity of the commodity purchased. It is always NEGATIVE.

NATURE OF COMMODITY

The nature of commodity is defined on the basis of overall price effect = Sub. Effect + Income Effect.

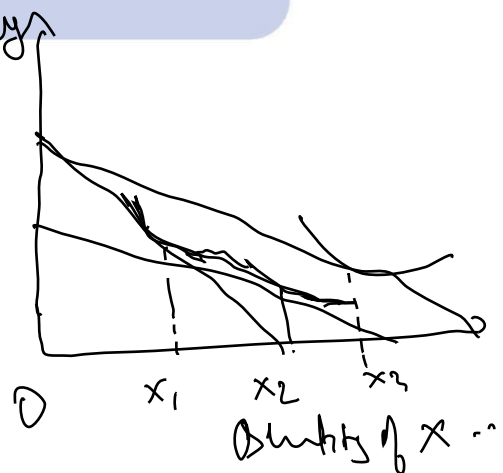
① Normal Good

When both Sub. Effect & Income

Effect is $\rightarrow$ ve.

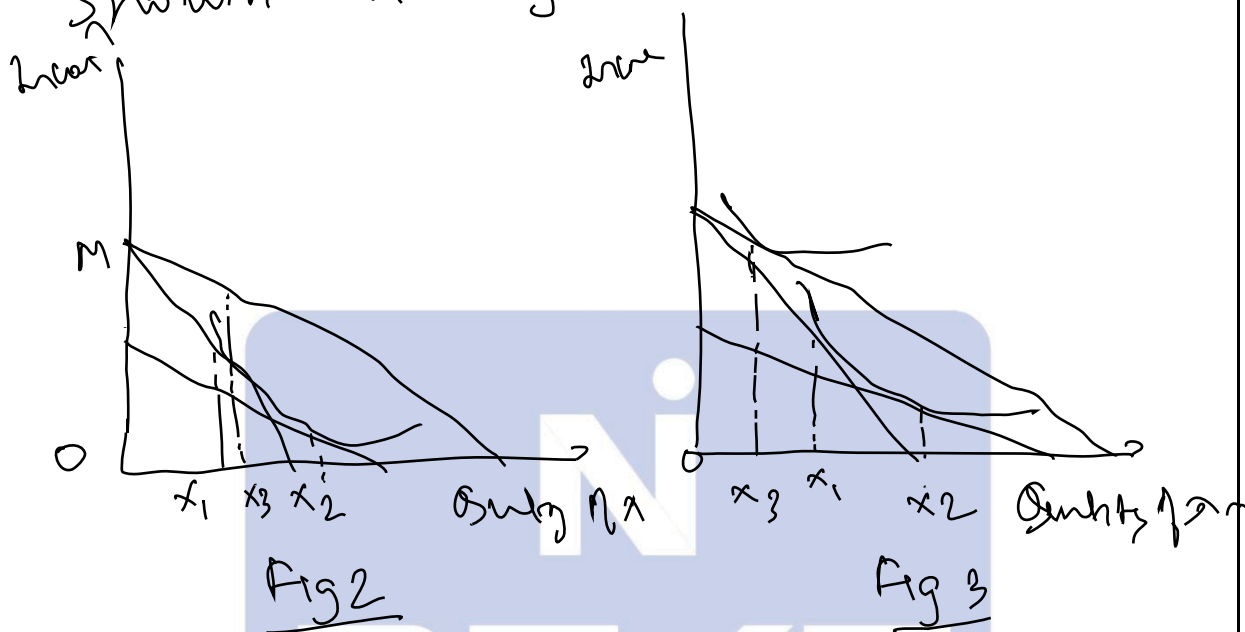
A decrease in price will increase quantity

of X_2 to X_3 due to income effect and from X_1 to X_2 due to substitution effect.



② Inferior Good

When Income Effect is +ve, then
 Price Effect < Substitution Effect as
 shown in Fig 2



③ Giffen Good

Under this case Income Effect ($x_1 x_3$)
 is even greater than Substitution
 effect ($x_1 x_2$). Thus a reduction
 in price reduces Quantity Purchased.

The Nature of Good therefore
 depends more on relative
 levels of Income Effect & Substitution
 Effect and more so on the direction
 of SE as SE is always -ve.

(b) "Marshallian stability ensures Walrasian stability." Do you agree?

(10)

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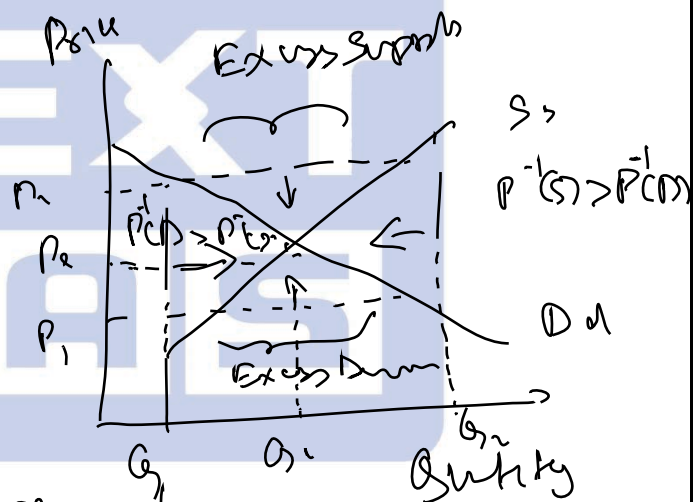
Marshallian Partial Equilibrium Stability is based on Quantity Adjustments while Walrasian Equilibrium is based on Price Adjustments. The stability of one DOES NOT imply the stability of other.

BOTH STABLE

At $P_1 < P_e$, excess demand arises and thus prices are bid up.

At $P_2 > P_e$, excess supply and thus price willing to accept is

reduced. Thus Walrasian Equilibrium is stable.

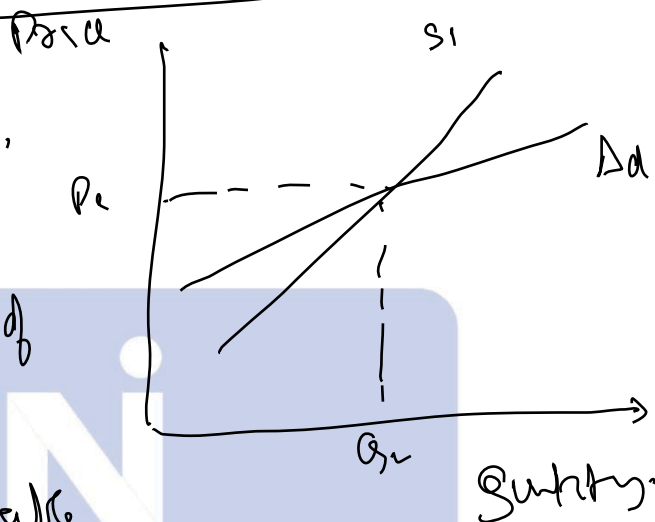


At $Q_1 < Q_e$, Price willing to pay by consumers exceeds supply price & thus more quantity is supplied. Similarly at $Q_2 > Q_e$, Demand Price is $<$ Supply Price and thus quantity reduces.

Therefore Marshallian Equilibrium is Stable.

MARSHALL STABLE WALRAS UNSTABLE

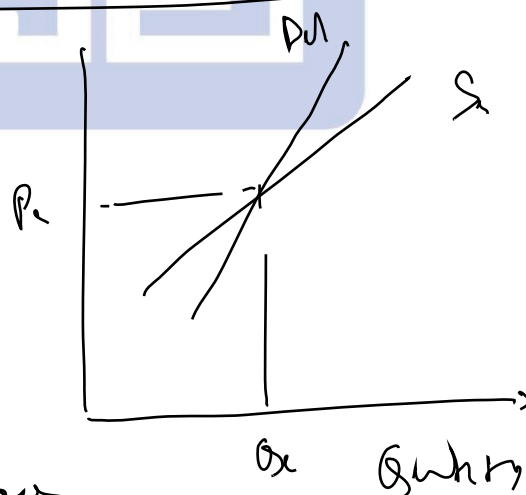
At price above P_c , Excess Demand will lead to bidding up of prices and thus Walras is unstable.



At $Q < Q_c$, Demand Price is greater than Supply Price $\Rightarrow$ Quantity $\uparrow$ Thus Marshallian STABLE

WALRAS STABLE MARSHALL UNSTABLE

In this case Demand is upward sloping and is steeper than Supply



Clearly here Marshall is unstable.

The stability of both equilibriums depend on the relative arrangements of Demand & Supply Curves.

(c) What are the different measures of monopoly power?

(10)

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Monopoly Power is the control of a firm over the market demand for a particular good / service. It implies the control over prices & quality. It doesn't necessarily mean monopoly profits.

MEASURES OF MONOPOLY POWER

① Price Elasticity of Demand

Higher the price elasticity, lesser the monopoly power. However it fails in situation where Demand is linear and thus different price elasticities at different points.

② Lerner's Index

$$L.I = \frac{P - MC}{P}$$

Thus greater is the difference between P & MC , higher will be monopoly power. However it is the same as the

measure of Price Elasticity of Demand at Equilibrium Output.

Also the difference between P & MC might be due to efficiency.

③ Cross Elasticity of Demand

Higher the Cross Elasticity of Demand for a company's product, lower is the monopoly power. For eg, Monopoly has ZERO Cross Elasticity of Demand.

However, even a firm in Perfect Competition experiences ZERO Cross Elasticity.

④ Herfindal's Index

$$H = \frac{S_i^2}{\sum S_i^2} \quad \text{where } S_i \text{ is market share of } i^{\text{th}} \text{ firm.}$$

There are thus various measures of monopoly power with each measure having its own limitations.

- (d) Explain if diminishing marginal productivity is necessary or sufficient for diminishing MRS, responsible for convexity of isoquant. (10)

Diminishing Marginal Rate of Technical Substitution (MRTS) between Labour and Capital is necessary for Convexity of Isoquants.

MARGINAL PRODUCTIVITY & MRTS

We know that

$$MRTS_{LK} = \frac{MPP_L}{MPP_K}$$

For $MRTS_{LK}$ to reduce with increasing Labour MPP_L/MPP_K must reduce. This is possible in two ways:



- ① MPP_L falls and MPP_K increases
- ② MPP_L increases but MPP_K increases even faster, compensating for increase in MPP_L and thus $MRTS_{LK}$ falls.

The first condition is the case of diminishing marginal returns to labour & capital. As L increases MPP_L falls and as K increases MPP_K rises.

The second case however represents a case of increasing marginal returns to labour coupled with DECREASING MARGINAL PRODUCTIVITY OF CAPITAL.

Diminishing Marginal Productivity of at least one factor is necessary for MRTS to fall. If both factors show increasing returns, MRTS will rise.

Therefore Diminishing Marginal Productivity is necessary as well as SUFFICIENT if both factors are considered together. But ~~only~~ ^{neither} necessary nor sufficient for a single factor.

(e) Examine the Kaldor's equation of distribution.

(10)

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Kaldor gave a theory of Distributive Shares using the Keynesian Equilibrium concept of $I = S$, but assumed a classical full employment economy.

KALDOR'S EQUATION

$$P/Y = \frac{1}{s_p - s_w} \times \left(\frac{I}{Y} - s_w \right)$$

where P/Y is profit share in National Income.

s_w & s_p is marginal propensity to save for workers & profits with $s_p > s_w$.

I/Y is investment share in Income.

INFERENCES

① $\frac{1}{s_p - s_w}$ is the coefficient of responsiveness of Profit Share to Investment Share.

② An increase in Investments will lead to rise in prices as economy is in

full employment situation. This will raise profits as wages lag prices. This will increase saving (Growth) till they equate new Investment.

- ③ Similarly a fall in investment will lead to fall in prices & profits share.
- ④ The equation only works when $sp > sw$, otherwise an increase in investment will lead to wage spiral.

CRITICISMS

- ① It assumes that workers will accept reduction in real wages and no trade unions exist.
- ② It also assumes that capitalists will accept a lower profit to regain equilibrium.

The Kaldorian Model of Distribution is an improvement over Kalecki and recommends Public Sector Investments to maximise welfare.

Q.2 (a) Explain the difference between Cournot model of duopoly with similar product and differentiated product. (15)

Candidates
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Candidates
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on this margin





Q.2 (b)

Examine how the profit, wage and rent in Ricardian system move differently with the movements in the level of income. (15)

Candidates
must not write
on this margin







Q.2 (c) Explain the impact of elasticity of demand and supply curves on stability in Cobweb Model. (20)

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on this margin







Q.3 (a) "Prices can be over and above MC only in Monopoly market structure". Analyse the statement. (20)

Candidates must not write on this margin

Under Perfect Competition, a firm faces an infinitely elastic demand curve and is in equilibrium at $MR = MC = P$. While in monopoly a firm faces downward sloping AR curve and can set prices above $MC = MR$.

RELATIONSHIP B/w PRICE & MC

Under equilibrium conditions, a firm equates MR & MC. The relation between AR & MR is given by

$$AR = MR \left(1 - \frac{1}{E_p} \right)$$

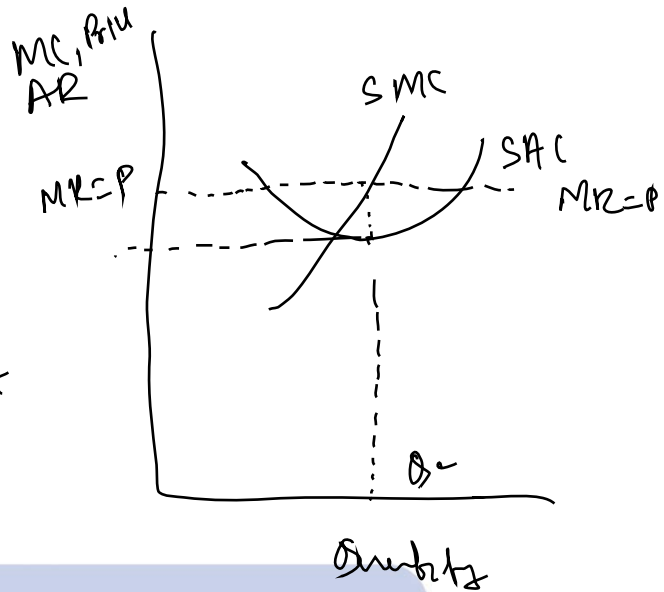
$$\Rightarrow \text{Price} = \text{Marginal Cost} \times \left(1 - \frac{1}{E_p} \right)$$

E_p is the absolute price elasticity of Demand

EQUILIBRIUM UNDER PERFECT COMPETITION

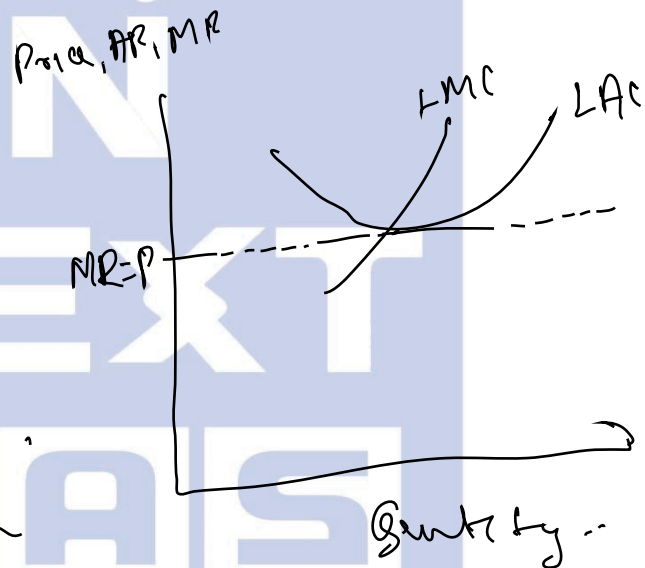
Short Run

Even in short run
a perfectly competitive
firm equates Price
and Marginal Cost
despite earning
Economic Profits



Long Run

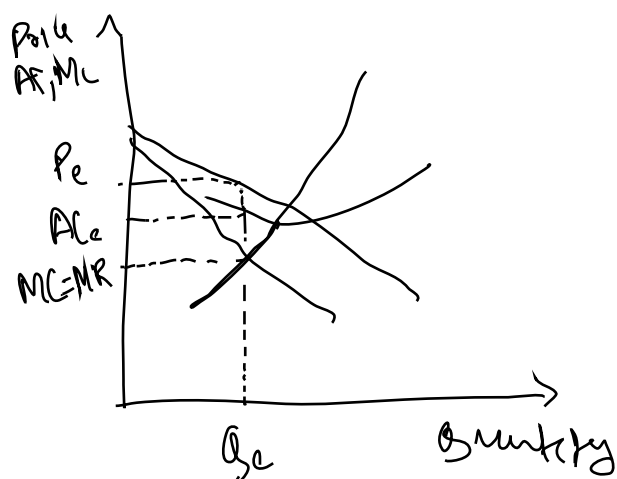
In the long run,
entry of firms
lowers price &
increases supply.
But still firm
equates Price & Marginal Cost



This is because $E_D \Rightarrow \infty$

MONOPOLY EQUILIBRIUM

Under Monopoly,
the firm equates
 MR & Marginal
Cost, but charges



a price much higher than MC at P_c which is over higher than Average Costs. Thus firm makes economic profit.

This is because Price Elasticity of Demand (E_D) is some positive quantity.

$$P = MC \times \left(1 - \frac{1}{E_D}\right) \Rightarrow \underline{P > MC}$$

WELFARE IMPLICATIONS

When Price = Marginal Cost, the produce is distributed efficiently and there is no Dead Weight Loss.

In Monopoly, however, $Price > MC$ and there exists a significant Dead Weight Loss of both consumer & Producer Surplus.

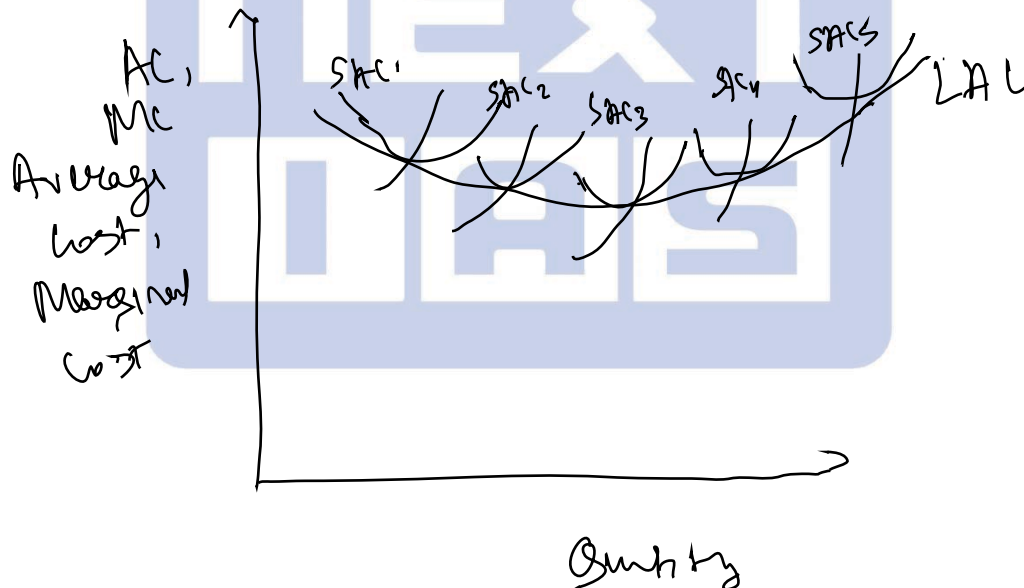
The Best way to remove or at least control Dead Weight loss is regulation of monopolies by fixing Price not above $MC = AC$.

Q.3 (b) Explain the role of returns to scale in determining the shape Long Run Average Cost Curve. (10)

Candidates must not write on this margin

Long Run Average Cost (LAC) curve shows the initial increasing returns to scale followed by constant returns to scale & finally diminishing returns to scale.

SHAPE OF LAC



Initially, at low quantities of production, firm faces increasing returns due to low utilisation of plant (SAC₁) and therefore subsequent SAC₂ (plant curves)

are below the earlier SAC.

At minimum LAC, constant returns to scale ensure $\min(LAC) = \min(SAC_2)$

When decreasing returns to scales are faced, SACs shift upwards.

FEATURES OF LAC CURVE

- ① The 'U' shape of LAC is less pronounced than SAC as both Labour & Capital can vary.
- ② During increasing returns SAC are tangent below optimal capacity and during decreasing returns they are tangent above optimal plant capacity.
- ③ The most efficient plant size (SAC_2) is tangent to LAC where returns to scale are constant.

The shape of LAC is not always U shaped and modern economists believe it to be of SAUCE SHAPED.

Q.3 (c)

How did Kalecki utilize Lerner's Index of Monopoly power in his theory of distribution? Examine the conclusions drawn by his theory. (20)

Candidates must not write on this margin

Kalecki gave his theory of distribution shown by using monopoly power as the main determinant which he measured using Lerner's Index.

LERNER'S INDEX

$$L = \frac{P - MC}{P} \quad \text{where } P = \text{Price}$$

$MC = \text{Marginal Cost}$

$L = \text{Monopoly Power}$

ASSUMPTIONS OF MODEL

- ① In the short run Average Costs equal Marginal costs. Therefore no fixed costs.
- ② Monopoly power across economy can be measured using Lerner's Index
- ③ Imperfect market exists
- ④ Income distributed between Profits & Wages.

EQUATIONS

$$\mu = \frac{P - AC}{P} \quad \text{as } AC = MC \text{ (given)}$$

Because $P - AC =$ Capitalists gains

$\mu \times P =$ Capitalists profits

Summing Over Economy

$$\mu_{\text{Economy}} = \frac{\sum n(P - AC)}{\sum n \times P}$$

Because $\sum n \times P = T$ (total transaction)

& $Y = \text{Profits } (P) + \text{Wages } (W)$

$$\Rightarrow W/A = \left(1 + \mu_{\text{Economy}} \times \frac{T}{W} \right)^{-1}$$

INFERENCES

Kalecki drew 2 conclusions:

- ① Wage Shares will fall on an increase in monopoly power as both μ & T will rise.
- ② An increase in input costs will raise T & therefore reduce wage shares.

EXPLANATION OF CONSTANT WAGE SHARE

Colonialisation Explanation

- ① During colonialisation Y increased but T was low as colonies provided cheap inputs. Thus W/A was constant.
- ② Decolonisation reduced ' Y ' but increased T .

Business Cycle Explanation

- ① During depressions, firms cut back Y & thus ' Y ' falls but T falls.
- ② During Booms, ' Y ' falls & T rises.

CRITICISMS

- ① Ignored other measures of monopoly.
- ② Difficult cost from many low profits which doesn't indicate monopoly.

Kalecki's theory was an improvement over Ricardian theory but left many phenomena unexplained.

Q.4 (a) Examine the validity of Arrow's Impossibility Theorem in the light of its criticisms. (15)

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Arrow gave 5 conditions for developing a reasonable democratic social welfare function and himself showed how these conditions were not possible to be followed together.

ARROW'S FIVE CONDITIONS

- ① Transitivity : Implied Rational Choice
- ② Sensitive To Individual Choices
- ③ Should be Non Discriminatory
- ④ Should be Non Dictatorial and thus be democratically decided
- ⑤ Be independent of irrelevant variables.

ARROW'S IMPOSSIBILITY THEOREM

Arrow showed using Agenda Manipulation, that these 5 conditions can not be satisfied simultaneously.

Proof

Consider 3 individuals A, B, C who order 3 social states X, Y, Z as shown below.

	A	B	C
X	1	2	3
Y	3	1	2
Z	2	3	1

It is clear that X is preferred to Z. At the same time Z is preferred over Y & Y is preferred over X. Thus loss of Transitivity.

Also in a case where two individuals A & B rank X, Y, Z

$$\text{as } A \Rightarrow X > Y > Z$$

$$\text{& } B \Rightarrow Y > Z > X$$

It is possible that 'Z' is an incoherent variable which will cause Y to be preferred over X, which otherwise would be indifferent.

CRITICISMS

- ① Amartya Sen criticises AIT on the grounds that it results due to information asymmetry.
- ② AK Sen also says if sufficiently large sample set is taken, then averages dominate ~~an~~ outliers.

Therefore, AK Sen converted AIT into a possibility and showed how democratic process empowers participants. Arrow's impossibility therefore remains irrelevant in today's digital world of information.

Q.4 (b)

A single firm monopolizes the entire market for widgets and can produce at constant average and marginal costs of

$$AC = MC = 10$$

Originally, the firm faces a market demand curve given by

$$Q = 60 - P.$$

- (1) Calculate the profit-maximizing price-quantity combination for the firm. What are the firm's profits ?
- (2) Now assume that the market demand curve shifts outward (becoming steeper) and is given by

$$Q = 45 - 0.5P$$

What is the firm's profit-maximizing price-quantity combination now ? What are the firm's profits.

Explain why there is no real supply curve for a monopoly. (20)

A monopolist is in equilibrium when Marginal Revenue equals Marginal Costs and therefore profits are maximum.

$$(1) \quad Q = 60 - P$$

$$\Rightarrow \text{Total Revenue (TR)} = (60 - Q) \times Q$$

$$\frac{dTR}{dQ} = MR = 60 - 2Q$$

$$\Rightarrow MR = MC \Rightarrow 60 - 2Q = 10$$

$$\Rightarrow \boxed{Q = 25}$$

$$\begin{aligned} \text{Profits of firm} &= TR - \text{Total Cost} \\ &= (60 - 25) \times 25 - 25 \times 10 \end{aligned}$$

$$= \boxed{625} \text{ Answer}$$

$$EQ \text{ Price} = 60 - 25 = \underline{\underline{35}}$$

Candidates
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(2) In this case $Q = 45 - P/2$

$$\Rightarrow P = 90 - 2Q$$

$$\text{Total Revenue (TR)} = (90 - 2Q) \times Q$$

$$\text{Marginal Revenue (MR)} = \frac{dTR}{dQ}$$

$$= 90 - 4Q$$

For Equilibrium $MR = MC$

$$\Rightarrow 90 - 4Q = 10$$

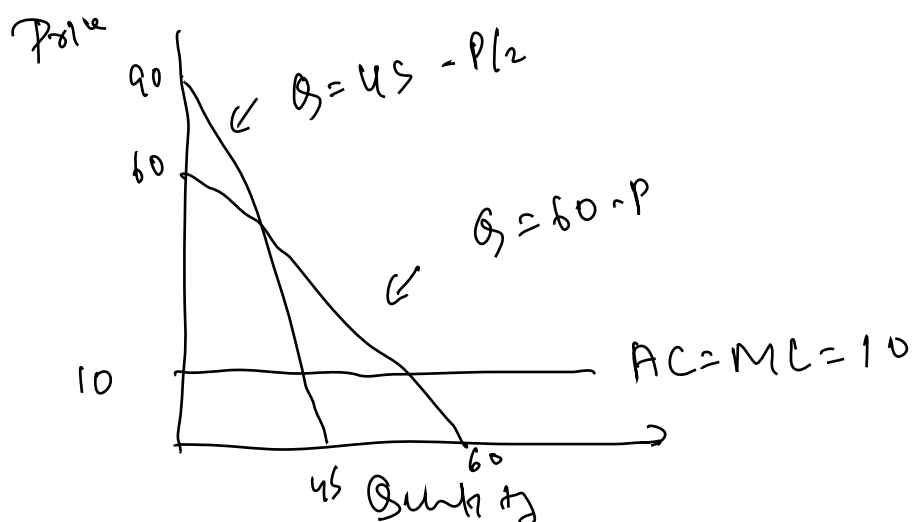
$$\Rightarrow \boxed{Q = 20}$$

$$\text{Profits} = TR - TC$$

$$= (90 - 2 \times 20) \times 20 - 20 \times 10$$

$$= 20 \times 40 = \underline{\underline{800}} \text{ Rs.}$$

$$\text{Eq Price} = 90 - 2 \times 20 = 50$$

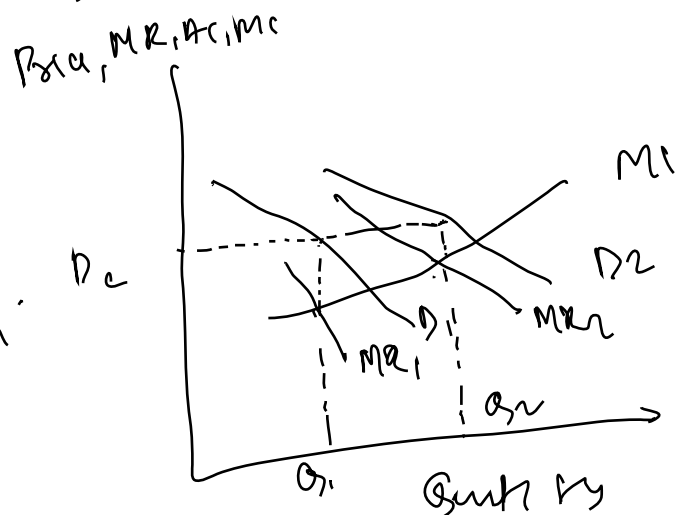


Supply Curve is defined as the response of Quantity Supplied by the firms on observing Prices. Thus Prices are given.

A monopoly, however, chooses the Price - Quantity combination to maximize profits rather than taking Prices as given.

In a monopoly it is possible that a shift in demand curve can lead to same Quantity being supplied at different prices. Also at same Price different Quantities can be forthcoming.

Therefore, there is NO SUPPLY CURVE for a monopoly firm.

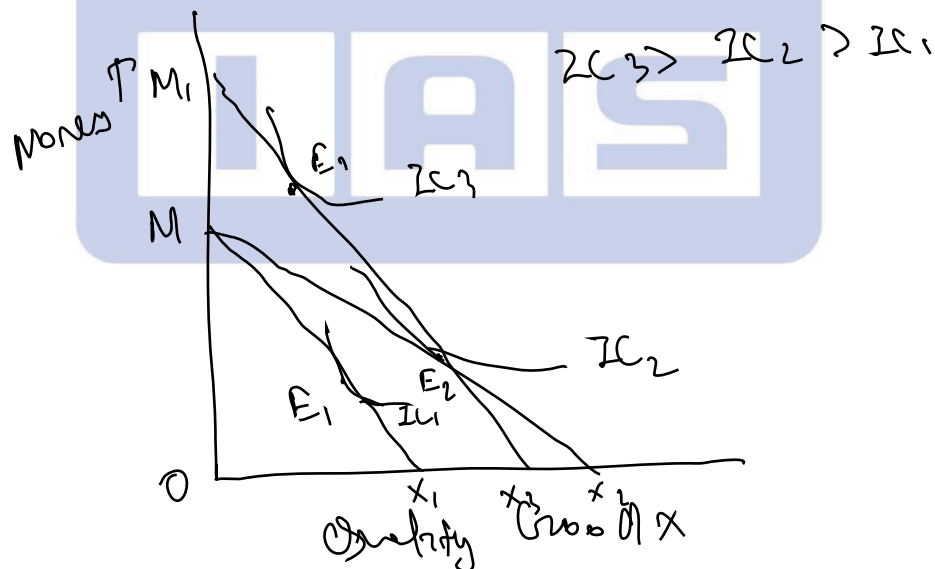


Q.4 (c) Is it always true that direct subsidy makes an individual better off than indirect subsidy of the same amount?

(15)

The net gain in welfare on account of a subsidy also depends on the nature of commodities. In case of Giffen Good for which Income Effect > Substitution Effect, Indirect Subsidy can be better than Direct Subsidy.

NORMAL GOODS



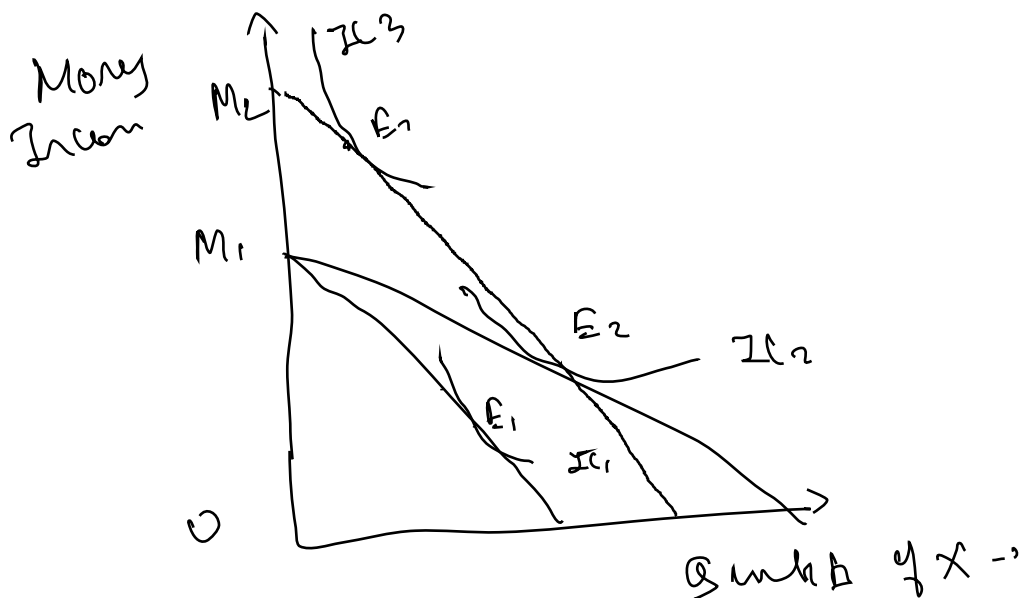
As a result of indirect subsidy, budget line shifts from MX_1 to MX_2 and Equilibrium from E_1 on IC_1 to E_2 on IC_2 .

An equal direct subsidy of $M_1 M_2$ will create new equilibrium on E_3 on IC_3 .

$IC_3 > IC_2$ because the IC is tangent to new budget line in position above E_2 as the lower position was also available earlier but not preferred.

GIFFEN GOODS

In case of Giffen goods, an increase in income leads consumer to buy less of the commodity and there might come a scenario where Indirect subsidy is better.



In this case $IC_2 < IC_3$ as
Income Effect $>$ Substitution Effect.

OTHER BENEFITS OF INDIRECT TAX

- ① The Analysis that direct taxes are better than indirect taxes assume that people understand what is best for themselves. Eg, Alcohol.
- ② The aim of a subsidy might be to encourage consumption of particular commodity. Eg, Milk.

Therefore, the desirability of the type of subsidy will depend on the goal of the subsidy as well as the nature of commodity for which it is used.

SECTION-B : MACROECONOMICS

- Q.5 (a) "Monetarists and Classicals draw same conclusions in both short run as well as long run." Analyse. (10)

While Monetarists believe that only money matters, Classicals believe in Dichotomy of Money where money has no effect whatsoever on Output.

MONETARISTS

For monetarists, private sector AD is stable and money velocity is also stable.

They used Cambridge Quantity Theory of Money $M^d = K \times PY$ and defined 'K' explicitly to depend on sectors on equity, bonds, money, wealth, and institutional factors.

$$\text{Thus } PY = \frac{M^s}{K} \quad \text{As } M^s \text{ is}$$

exogenously fixed, it is an Income Equation.

Thus Money supply can increase and change Nominal Income.

In the short run, prices are little inflexible and thus the change is in Real Output. In the long run, prices adjust and Real Output returns to original.

CLASSICALS

For Classical, real output was totally determined by supply factors and AD depended solely on money supply. $P \times Y^d = M^s \times V^s$ Money Velocity

The money supply thus had no impact on output even in the short run.

Therefore, Monetarists & Classical gave same conclusions in Long Run but differed in Short Run.

Q.5 (b) Define Sacrifice Ratio. What was its utility as stated by Okun?

(10)

Candidates
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Sacrifice Ratio is defined as the ratio of Percentage Points where employment rate remained above natural rate times number of time periods divided by reduction in Inflation.

UTILITY OF SACRIFICERATIO

- ① It can help plan the economic policy for inflation control.
- ② It helps decide the perfect timing and quantity of policy variable to be changed to achieve desired reduction in inflation rate.
- ③ Helps policy makers decide whether to go for a COLD TURKEY

OKUN'S LAW & SACRIFICE RATIO

Okun Stated that for USA, an employment 1% higher than the

will lead to actual growth rate of output to be 2.5% ~~below~~ below natural growth rate (g_n).

It therefore helped define the SACRIFICE RATIO in terms of growth rate. For eg. Sacrifice ratio of 2 in unemployment terms means 5 in growth terms.

RATIONAL EXPECTATION CRITICISM

The New Classical economists asserted that a CREDIBLE POLICY announcement will reduce inflation without any sacrifice instantaneously.

Nevertheless, Sacrifice Ratio is an important & useful metric for policy makers specially in recent times of HIGH INFLATION.

Q.5 (c) What is the role of low interest sensitivity of investment in determining effectiveness of monetary and fiscal policy? (10)

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A low interest sensitivity of Investment as during depression phase, means a steeper IS schedule. This implies Fiscal Policy is more effective than Monetary.

SCOPE OF IS

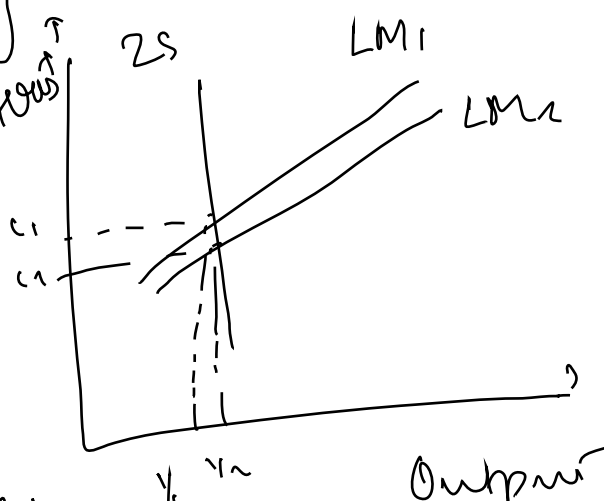
IS schedule defines product market equilibrium where Savings Equal Investment.

If Investments are less sensitive to interest rates, an increase in income leading to increase in savings will need a higher reduction in interest rates. Thus IS will be steep.

MONETARY POLICY

An increase in money supply shifts LM to LM2 towards right and reduces interest rates to i_2 .

However, investment doesn't increase much

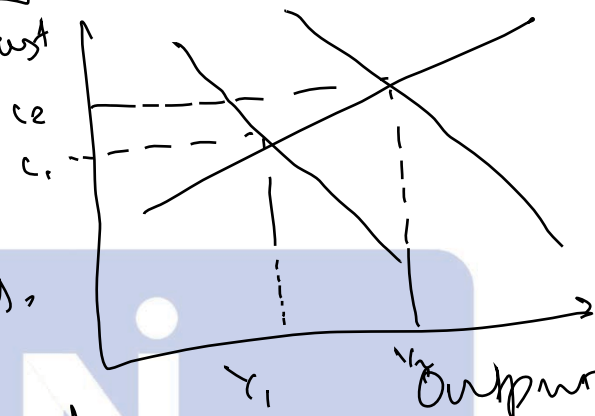


and therefore incomes are raised by y_2 to y_1 from y_1 .

FISCAL POLICY

As government expenditure rises,

IS shifts rightward.



However, interest rate

rises by very little to c_2 and thus there is very little crowding out. This ensures a high impact on Output from y_1 to y_2 .

The conclusion is important

for COVID-19 times where fiscal policy will be much more effective than monetary policy. However, the centre is doing just the opposite.

Q.5 (d) How does the autonomous multiplier get affected if investment is also a function of income? (10)

Candidates must not write on this margin

Autonomous Multiplier is the number of times income will rise on a given increase in autonomous expenditure.

INVESTMENT FUNCTION

$$\text{Let } I = I_0 = C_1 i + C_2 Y$$

where C_1 & C_2 are positive constant

$I_0 \Rightarrow$ Autonomous Investment

$Y =$ Output, $i \rightarrow$ interest rate

We know that

$$Y = C + I + G \quad (\text{For Equilibrium})$$

$$Y = C_0 + c \times (Y - Y_0) + I_0 - C_1 \times i + C_2 \times Y + G_0$$

$$\Rightarrow Y - cY - C_2 Y = C_0 - cI_0 + I_0 - C_1 i + G_0$$

$$\Rightarrow Y = \frac{1}{1 - c - C_2} \times [C_0 + I_0 + G_0 - cI_0 - C_1 i]$$

The autonomous multiplier

$$\frac{dY}{dC_0} = \frac{dY}{dI_0} = \frac{dY}{dC_1} = \frac{1}{1 - c - C_2}$$

The multiplier is therefore greater than when investment is autonomous only. This is because an increase in investment will also increase income which in turn will again raise investment by more and so on.

$$\frac{dY}{d\%} = \frac{-C}{1-C-C_2} \quad \& \quad \frac{dY}{dC} = \frac{-C_1}{1-C-C_2}$$

Therefore a rise in taxes and interest rates impact income adversely.

In case of accelerator effect where income affects investment, autonomous multiplier is larger and thus AD is more unstable.

Q.5 (e) Explain Classical Dichotomy. What is its relevance to neutrality of money?

(10)

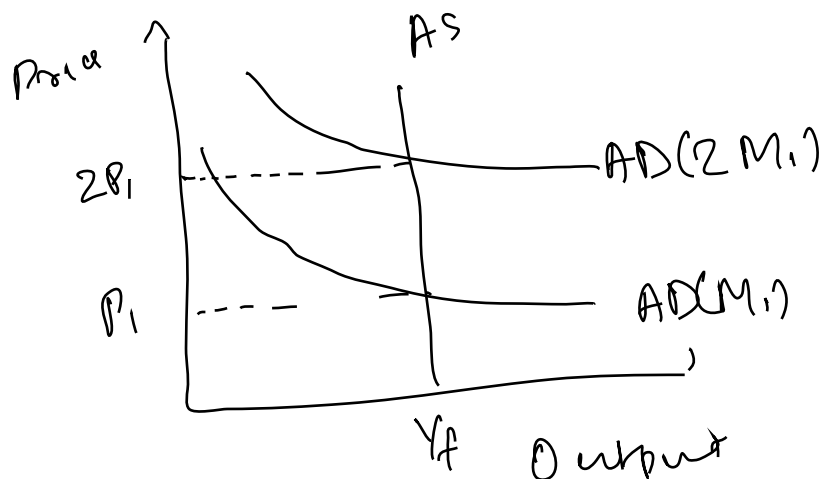
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CLASSICAL DICHOTOMY is the phenomena where real variable impact only real variables while nominal variables like money impact only nominal ones.

ASSUMPTIONS OF CLASSICAL MODEL

- ① Perfect Competition
- ② Supply creates its own Demand
- ③ Dichotomy
- ③ Perfect Wage-Price flexibility, thus AS curve is vertical.
- ④ Classical AD curve $\Rightarrow P = M^s \times V$

CLASSICAL MODEL



An increase in money supply from M_1 to $2M_1$ has no impact on real output. The AD shifts rightwards & prices rise to $2P_1$ even in the short run.

The money wages would have doubled to maintain the real wages constant.

The CLASSICAL DICHOTOMY thus leads to neutrality of money in the Classical Model.

CRITICISMS

- ① Money wages & Prices are not perfectly flexible in the short run.
- ② Interest rates are not flexible.

The Classical neutrality of money will thus fail in case there exists rigidity in either money or labour markets.

Q.6 (a) Explain the shape of AS curve in long run in Neo- Classical Model. How is it different from Short run AS curve? (20)

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Neo- Classical synthesis or the Neo- Classical Reconciliation is also called the FOLIOH model as it allows for AD expansionary policies to work in SHORT RUN but not in LONG RUN. The Long Run AS is thus VERTICAL.

ASSUMPTIONS OF MODEL

- ① It uses Neo- Keynesian AD curve
- ② The market has imperfect competition
- ③ $Y = AL$ is the production function with constant returns to scale.
 $L \Rightarrow$ Labour & $A =$ Tech. coefficient.
- ④ Labour market wages and prices of goods market are sticky.
- ⑤ Labour suppliers make decisions on the basis of Price Expectations formed on basis of Adaptive Expectations
- ⑥ Defined Natural Output Y_n where unemployment is only voluntary/frictional.

AS IN SHORT RUN

At unemployment = $u_n \Rightarrow Y = Y_n \Rightarrow P = P_c$

When $u < u_n \Rightarrow Y > Y_n \Rightarrow P$ rises as wages rise.

Therefore AS curve is upward sloping.

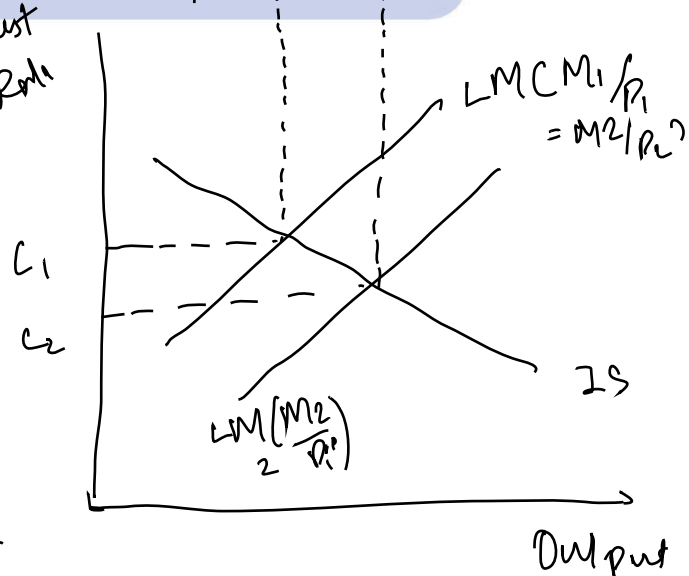
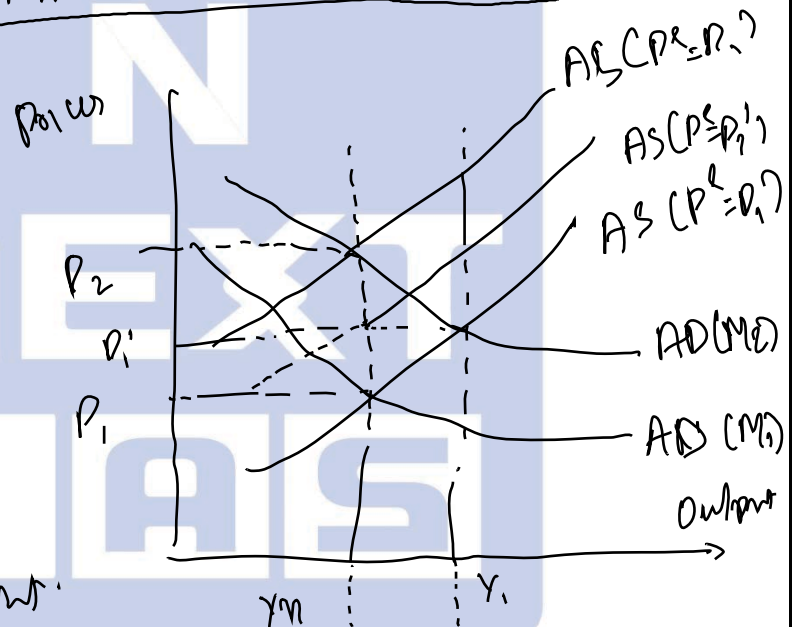
IMPACT OF EXPANSIONARY POLICY

In the short run an expansion in money supply from M_1 to M_2 shifts LM to LM_2 towards right.

Thus interest rates fall from i_2 to i_1 & income/output rise from Y_n to Y_1 .

And prices from

P_1 to P_1' . Thus policy is EFFECTIVE



Gradually however, labour suppliers will realise the increase in actual prices. Thus the wage setting curve will shift upwards and Aggregate Supply curve will start shifting towards left to AS' and finally to AS'' where $Y = Y_n$ and price rises to P_2 such that $M_1/P_1 = M_2/P_2$ and real money supply returns back to original level along with interest rate.

The long run Aggregate Supply can thus be viewed as vertical while short run supply is upward sloping.

This difference stems majorly due to the adaptive expectations of price & wage-price stickiness.

Q.6 (b) Does government borrowing always crowd out private investments? Analyse. (10)

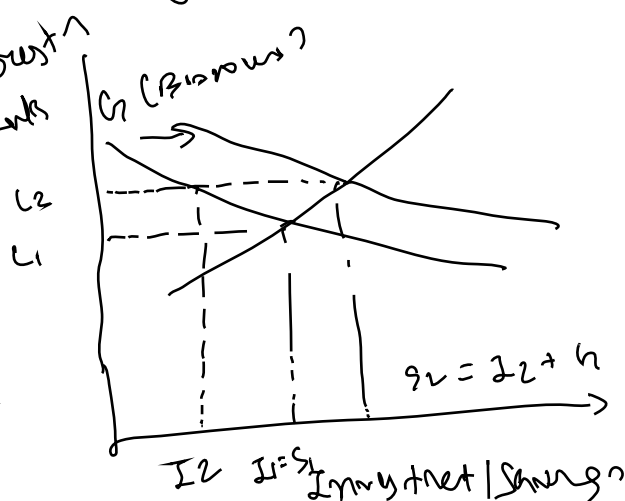
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In the neo-Keynesian IS-LM framework, an increase in Government Expenditure leads to increase in interest rates which might or might not lead to crowding out.

CROWDING OUT

In the Classical Macroeconomic framework and its loanable funds theory, Savings act as the supply of funds while Investment & Govt. Borrowing act as supply of bonds. Savings vary positively with interest rates while Investments negatively.

An increase in interest rates
Government Borrowing will
increase interest
rates from i_1 to i_2
and crowd out

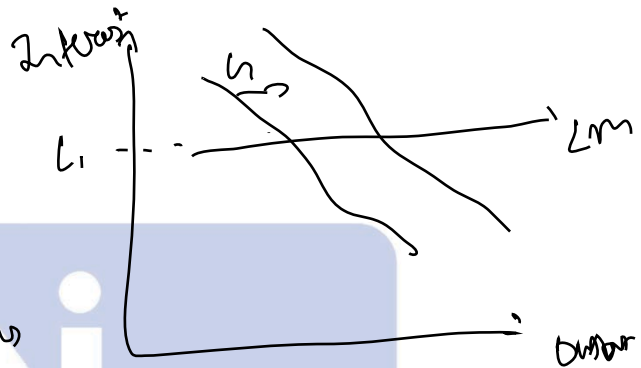


$$\text{Private investment} = I_1 - I_2$$

WAYS TO AVOID CROWDING OUT

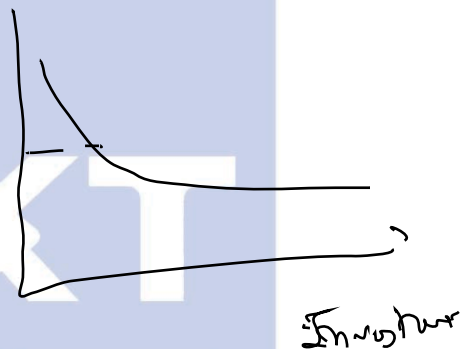
① If LM is horizontal in Neo-Keynesian

In this case there will be no crowding out of private investments as interest rates don't increase.



② If the government

borrowings are used to provide investment subsidies, Autonomous investment rises & no crowding out.



③ If Government uses borrowing to pay back existing debt then also crowding out is averted.

The amount & direction of crowding out on government borrowing depends on the use of proceeds. CAPEX is thus desirable.

- Q.6 (c) Examine why classical theory couldn't explain paradox of thrift? What were the different assumptions under Keynes that it could be explained? What was its role in explaining great depression. (20)

Paradox of Thrift is the macro-economic scenario where, the collective will of people to save more for a rainy day results in a lowering of income & no change in income.

KEYNESIAN EXPLANATION

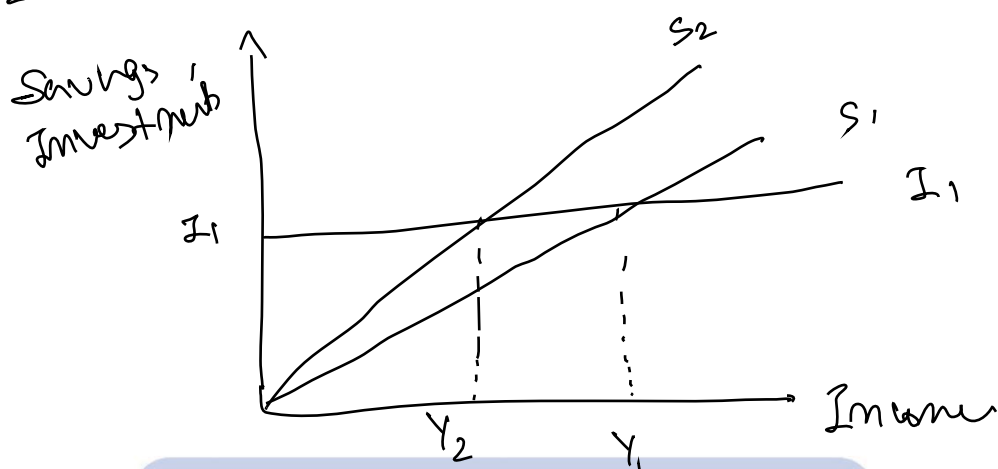
Assumptions

- ① Investment is totally autonomous and depends on animal spirits.
- ② Income is demand determined as economy is assumed to be below full employment output
- ③ Savings & consumption are functions of income only.

Explanation

An increase in Marginal Propensity to save will rotate & shift the savings schedule anticlockwise as

Shown below:



Because Investment is fixed at I_1 and in equilibrium $I=S$, the increase in MPS will keep total savings constant at I_1 .

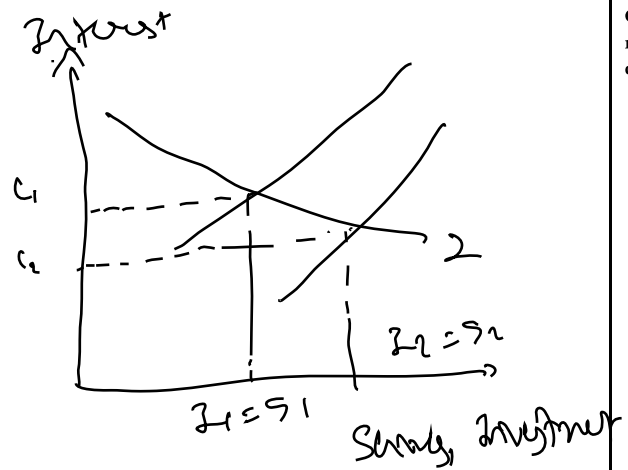
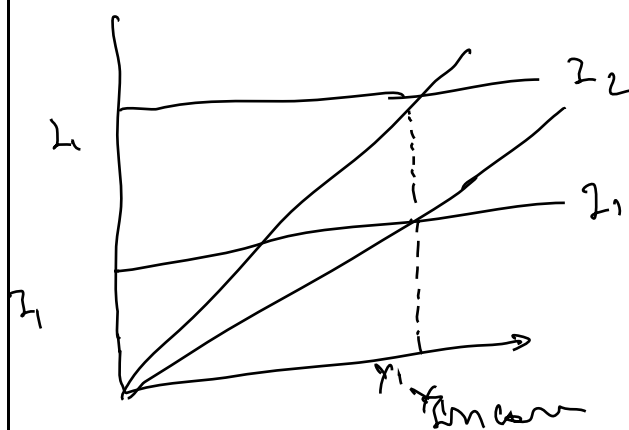
CLASSICAL VIEW

The Classical Economists saw both savings & investments to depend on interest rates.

According to them, as savings increase due to autonomous shock, interest rates will fall & Investments will increase to equate Savings & Investment.

This is shown in figures below in both Classical & Keynesian Model.

Saving Investment



Therefore income is increased at r_1 as investment schedule shifts up.

EXPLAINING GREAT DEPRESSION

During Great Depression in 1930's, people wanted to save more for a rainy day. This increased their marginal propensity to save and low animal spirits caused income to fall while savings either fell or were constant.

To get out of the Paradox, Keynes suggested Government Expenditure as it is not dependent on animal spirits. It will shift I-schedule up and revive the economy.

- Q.7 (a) Explain transmission mechanism and how is it impacted by autonomous multiplier and income sensitivity of money demand. Does it get affected by endogenous money supply.
(20)

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Q.7 (b) "Transaction demand for money is always dependent on income." Comment. (15)

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Q.7 (c) How did Keynesians differ from monetarists?

(15)

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Q.8 (a) Explain the impact of technological improvement in a gradual monetarist model. (15)

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Q.8 (b) Explain how New Keynesians defined rigidity in the market?

(15)

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Q.8 (c) Policy ineffectiveness proposition in rational expectations can be applied in long run, but not always in the short run. Discuss. (20)

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SPACE FOR ROUGH WORK

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