UNIT III

PRICE-OUTPUT UNDER PERFECT COMPETITION AND MONOPOLY

(9 Hours)

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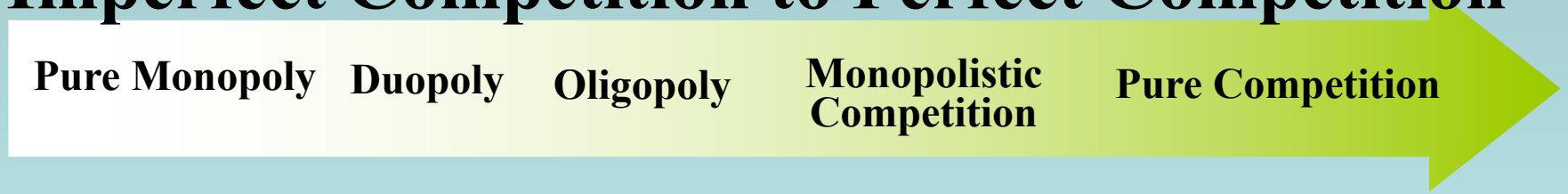
Contents

- Perfect Competition: Short-run and Long-run Equilibrium; Supply curves of the Firm and Industry; Dynamic Changes and Industry Equilibrium.
- Monopoly: Short-run and Long-run Equilibrium; Predictions in Dynamic Changes, Regulated Monopoly (Taxation, and Price Regulation); Govt. regulated Monopoly; Discriminating Monopoly. Comparison of Competitive and Monopoly Firms and Excess Capacity.

Classification of Market Models

- **Perfect/Pure competition**
- **Imperfect Competition:**
  - Pure monopoly
  - Oligopoly/Duopoly
  - Monopolistic competition

Imperfect Competition to Perfect Competition



Market Structure Variety

Market structure

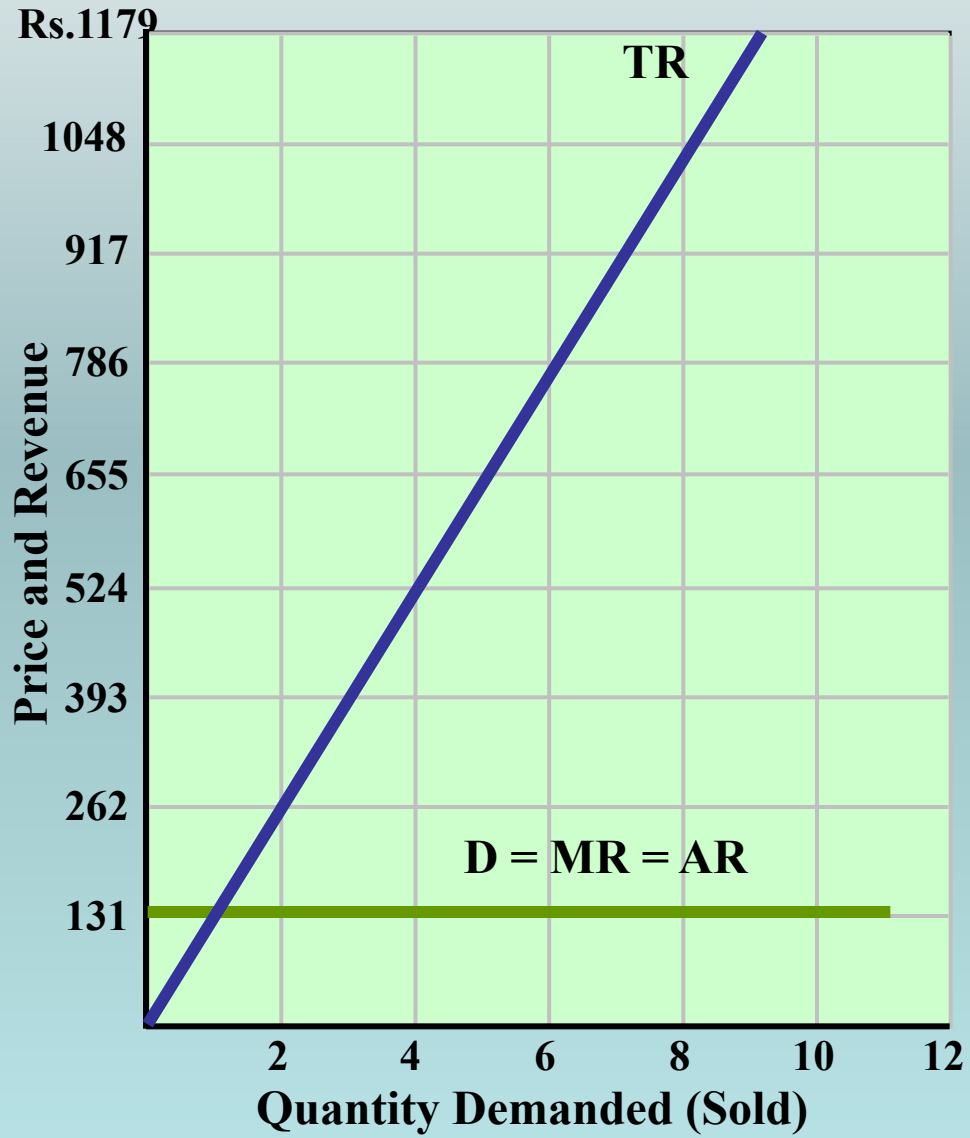
•	Numbers of Firms	Type of product	Demand curve	Entry condition	Example
Perfect competition	Many	Homogenous	Perfectly elastic	None	Fruit/ Vegetables at local market
Imperfect competition					
1. Monopolistic competition	Many	Differentiated	Not perfectly elastic	None	Mobile phone/ electronic goods
2. Oligopoly	Few	Differentiated	Less elastic	Some	Cars/mobile service
3. Monopoly	One	Unique	Market demand curve	No entry	Patented drugs

Assumptions of Perfect /Pure Competition

1. Very large numbers: Many buyers and many sellers
2. Standardized product: The goods offered for sale are largely the same.
3. Price takers: takes the price as given
4. Free entry and exit: Firms can freely enter or exit the market, no effect if some sellers and buyers exit and entry from the market
5. Perfectly elastic demand: (i) Average revenue (ii) Marginal revenue
6. Consumer and producer be rational: perfect knowledge about market

Pure Competition

Firm's Demand Schedule (Average Revenue)		Firm's Revenue Data		
P	Q_D	TR		MR
Rs.131	0	Rs.0		Rs.
131	1	131		131
131	2	262		131
131	3	393		131
131	4	524		131
131	5	655		131
131	6	786		131
131	7	917		131
131	8	1048		131
131	9	1179		131
131	10	1310		131



Short Run Profit Maximization

- Market price is given
- Three questions:
  - Should the product be produced?
  - If so, in what amount?
  - What economic profit (loss) will be realized?

Profit Maximization

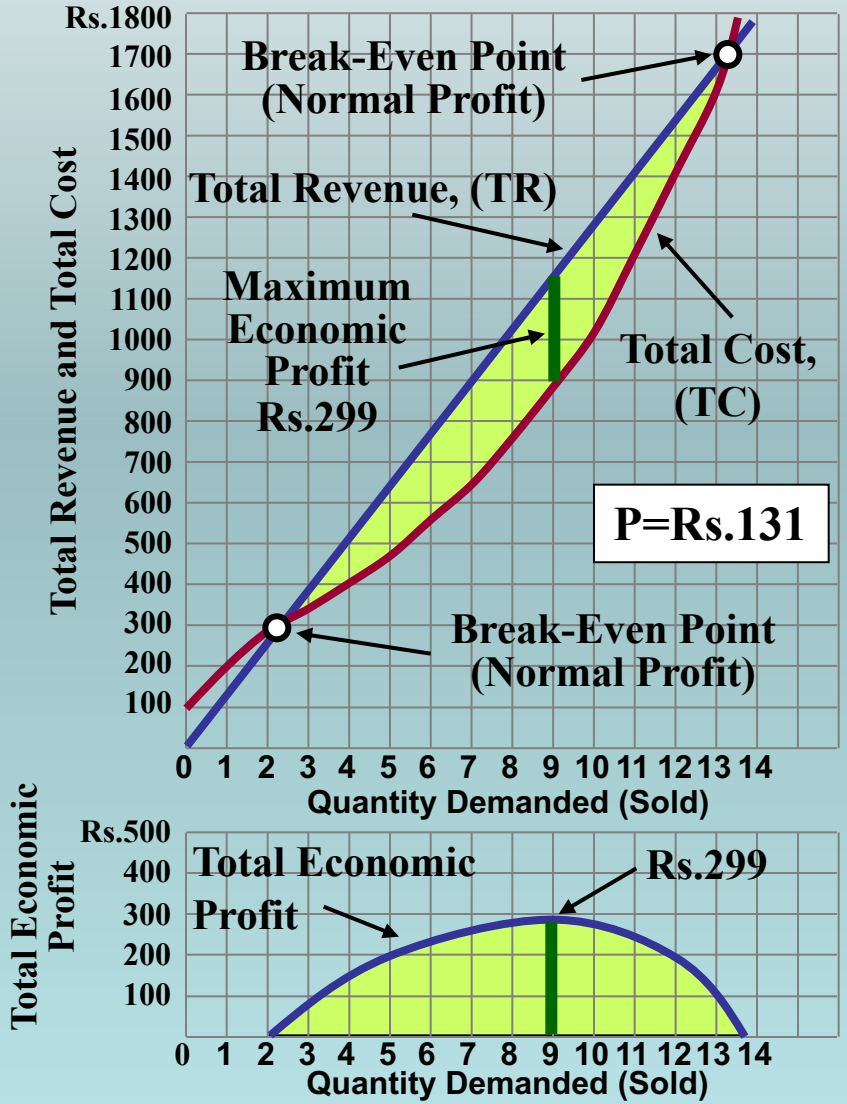
- Two approaches
- Total revenue and total cost approach
  - Produce where TR-TC is greatest
- Marginal revenue and marginal cost approach
  - Produce where MR=MC

Total Revenue Total Cost Approach

(1) Total Product (Output) (*Q*)	(2) Total Fixed Cost (*TFC*)	(3) Total Variable Cost (*TVC*)	(4) Total Cost (*TC*)	Price = Rs.131 (5) Total Revenue (*TR*)	(6) Profit (+) or Loss (-)
0	Rs.100	Rs.0	Rs.100	Rs.0	Rs.-100
1	100	90	190	131	-59
2	100	170	270	262	-8
3	100	240	340	393	+53
4	100	300	400	524	+124
5	100	370	470	655	+185
6	100	450	550	786	+236
7	100	540	640	917	+277
8	100	650	750	1048	+298
9	100	780	880	1179	+299
10	100	930	1030	1310	+280

Which point is the Profit Maximization?

Total Revenue Total Cost Approach



Marginal Revenue Marginal Cost Approach

(1) Total Product (Output)	(2) Average Fixed Cost (A*FC*)	(3) Average Variable Cost (A*VC*)	(4) Average Total Cost (A*TC*)	(5) Marginal Cost (M*C*)	(6) Marginal Revenue (MR)	(7) Profit (+) or Loss (-) TC-TR (Page 9)
0						Rs.-100
1	Rs.100.00	Rs.90.00	Rs.190.00	Rs.90	Rs.131	-59
2	50.00	85.00	135.00	80	131	-8
3	33.33	80.00	113.33	70	131	+53
4	25.00	75.00	100.00	60	131	+124
5	20.00	74.00	94.00	70	131	+185
6	16.67	75.00	91.67	80	131	+236
7	14.29	77.14	91.43	90	131	+277
8	12.50	81.25	93.75	110	131	+298
9	11.11	86.67	97.78	130	131	+299
10	10.00	93.00	103.00	150	131	+280

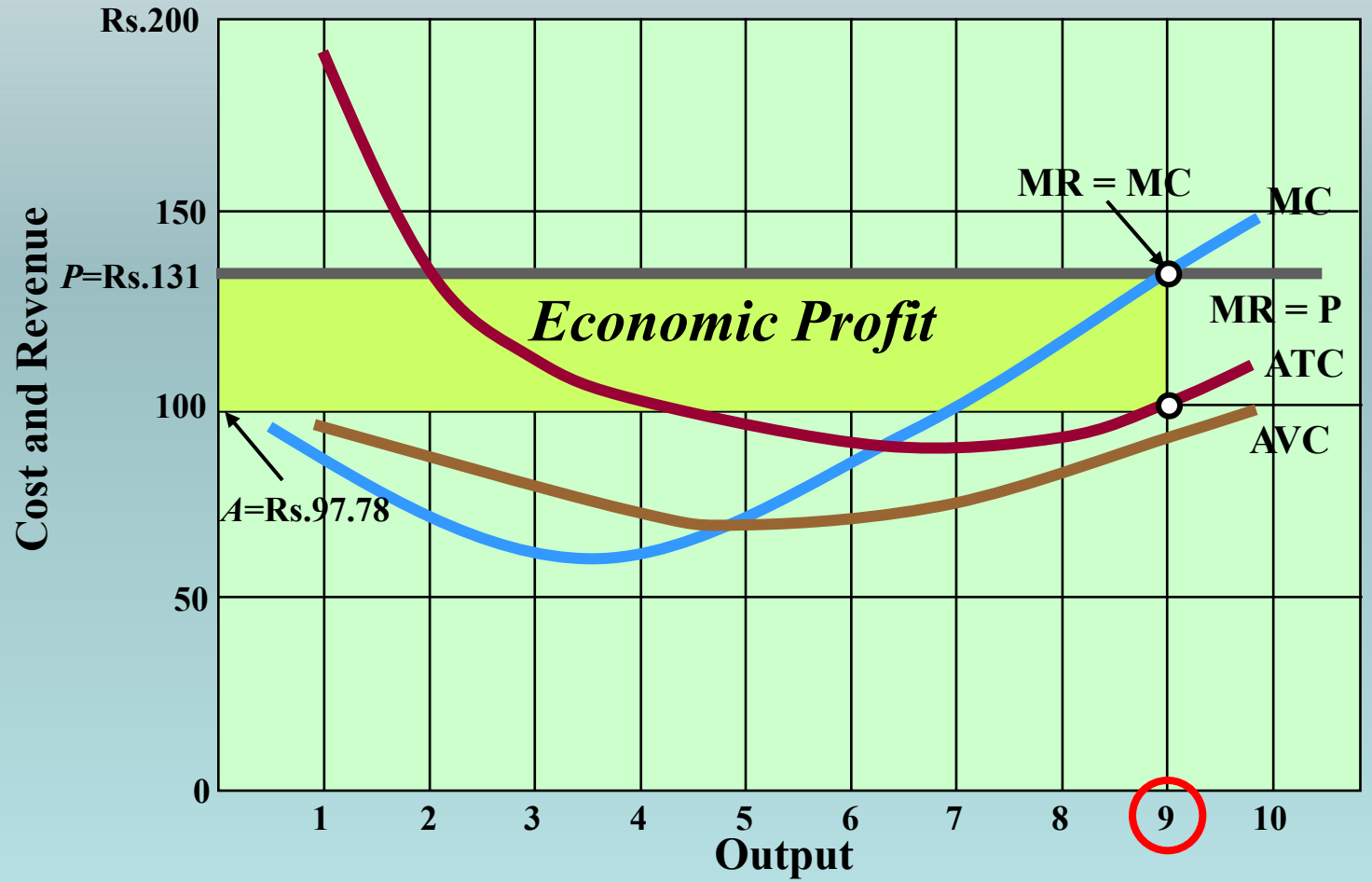
Do You See Profit Maximization Now?

Marginal Revenue Marginal Cost Approach

TC	*TR*	(1) Total Product (Output)	(2) Average Fixed Cost (A*FC*)	(3) Average Variable Cost (A*VC*)	(4) Average Total Cost (A*TC*)	(5) Marginal Cost (M*C*)	(6) Marginal Revenue (MR)	(7) Profit (+) or Loss (-) TC-TR (Page 9)
Rs.100	Rs.0	0	Rs.100.00	Rs.90.00	Rs.190.00	Rs.90	Rs.131	Rs.-100
190	131	1	50.00	85.00	135.00	80	131	-59
270	262	2	33.33	80.00	113.33	70	131	-8
340	393	3	25.00	75.00	100.00	60	131	+53
400	524	4	20.00	74.00	94.00	70	131	+124
470	655	5	16.67	75.00	91.67	80	131	+185
550	786	6	14.29	77.14	91.43	90	131	+236
640	917	7	12.50	81.25	93.75	110	131	+277
750	1048	8	11.11	86.67	97.78	130	131	+298
880	1179	9	10.00	93.00	103.00	150	131	+299
1030	1310	10						+280

Do You See Profit Maximization Now?

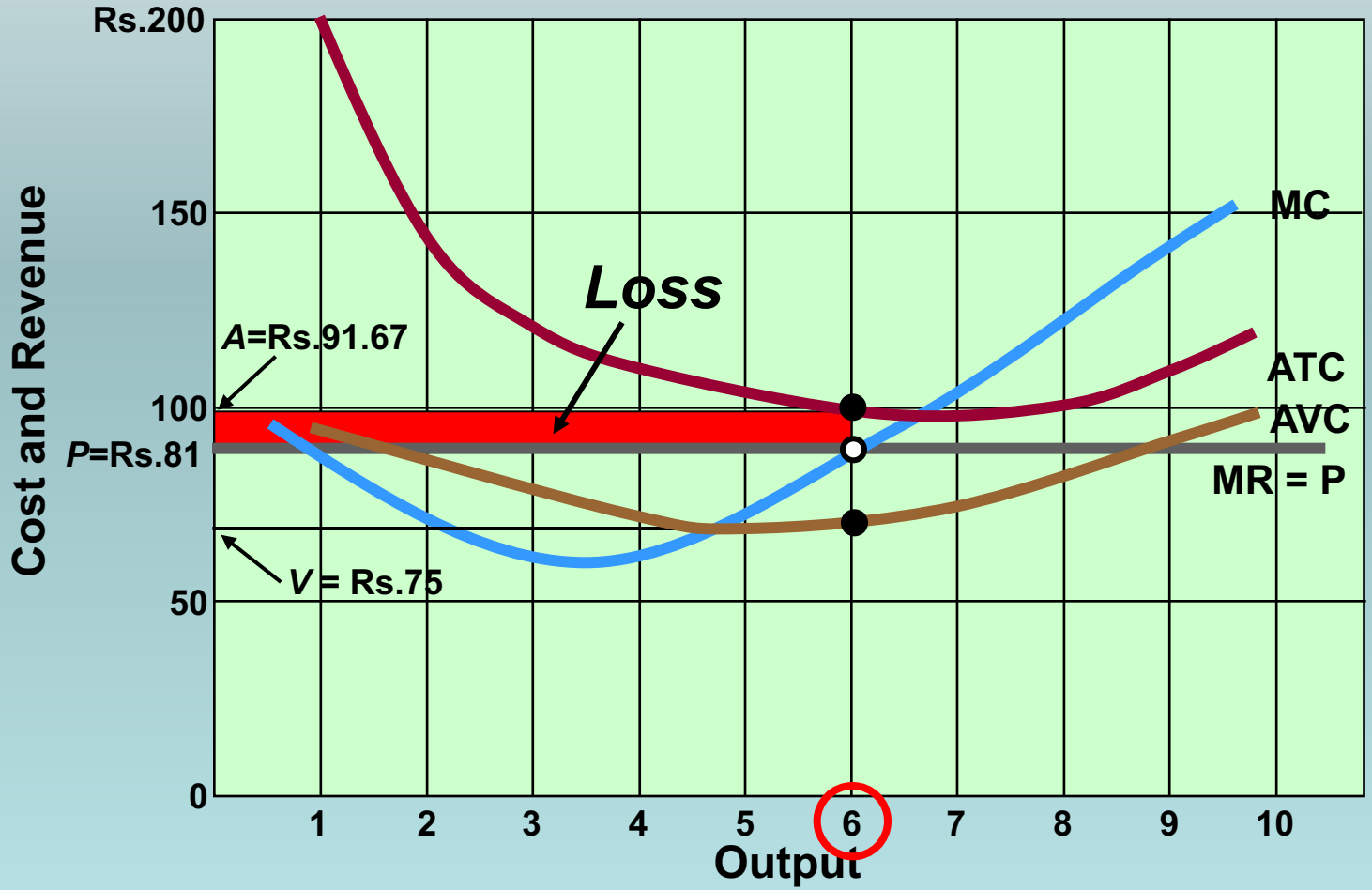
Marginal Revenue Marginal Cost Approach



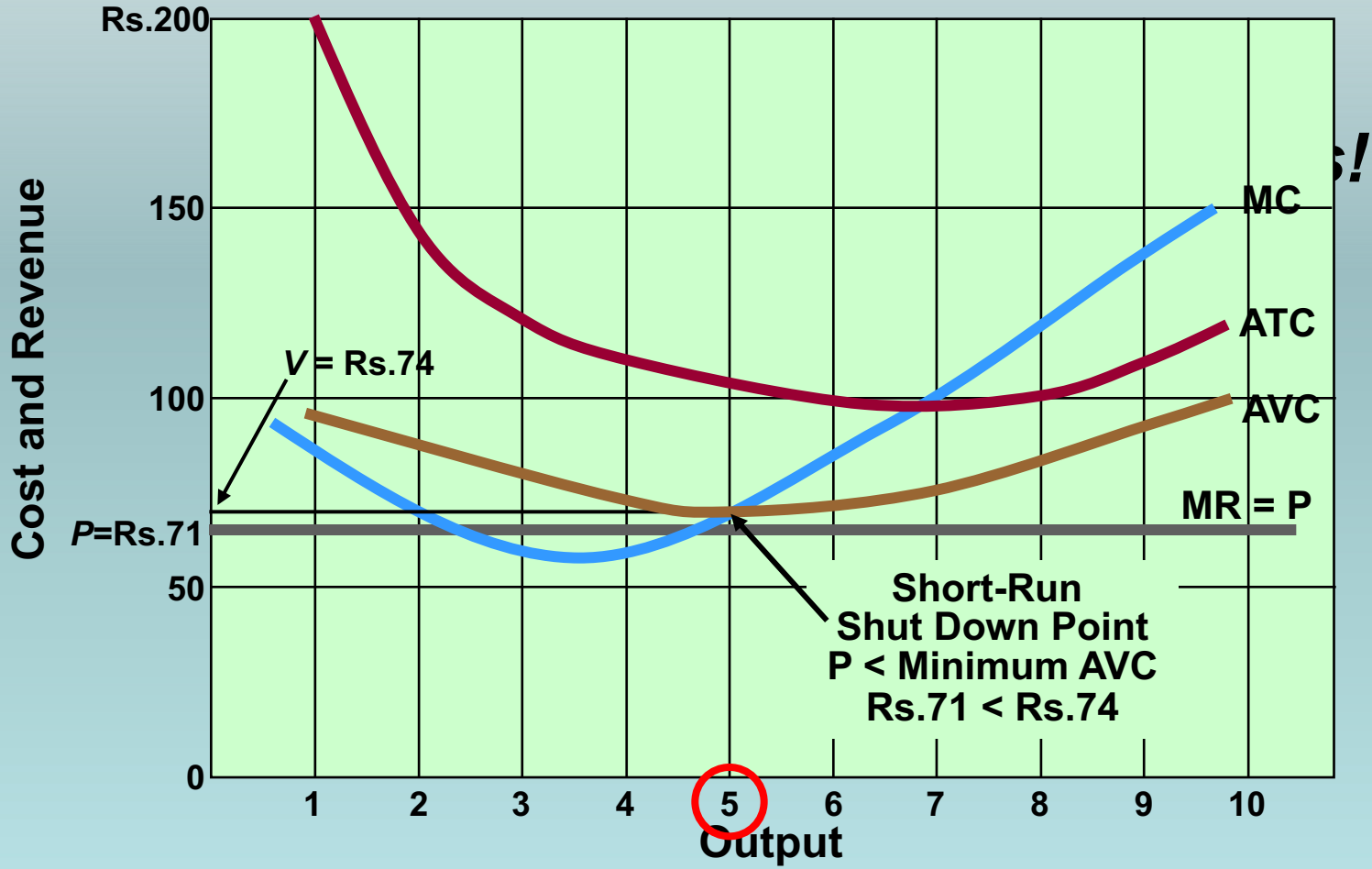
Short Run Profit Maximization

- Produce where MR (=P) = MC
- Suffer loss, still produce?
- Yes if loss is less than fixed cost
  - Cover variable cost
- Shut down if loss greater than fixed cost
- Produce if P > min AVC

Short Run Loss Minimizing Case



Short Run Shut Down Case



Short-Run Supply Curve

Continuing the Same Example…

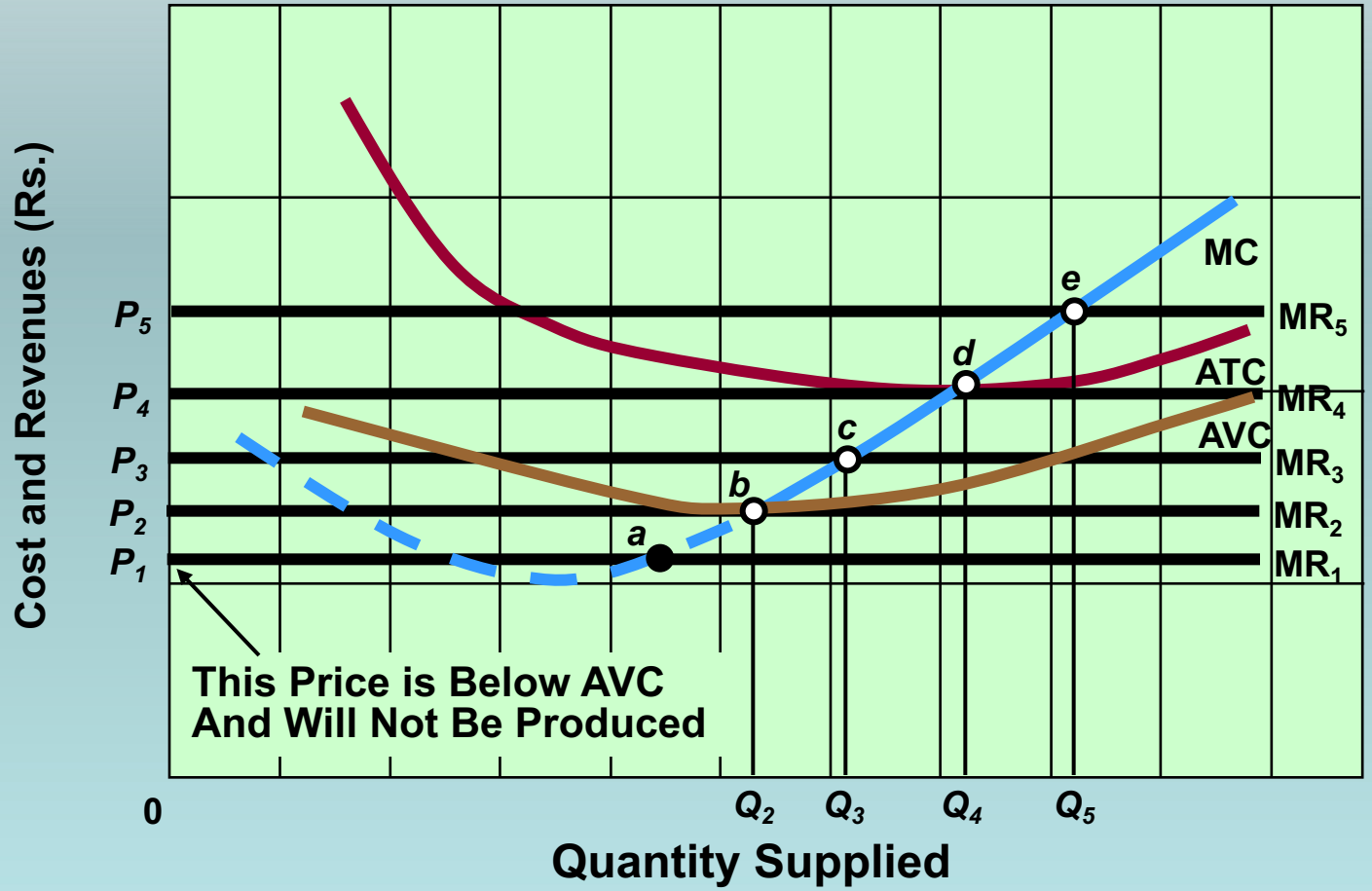
Supply Schedule of a Competitive Firm

Price	Quantity Supplied	Maximum Profit (+) or Minimum Loss (-)
Rs.151	10	Rs.+480
131	9	+299
111	8	+138
91	7	-3
81	6	-64
71	0	-100
61	0	-100

The schedule shows the quantity a firm will produce at a variety of prices

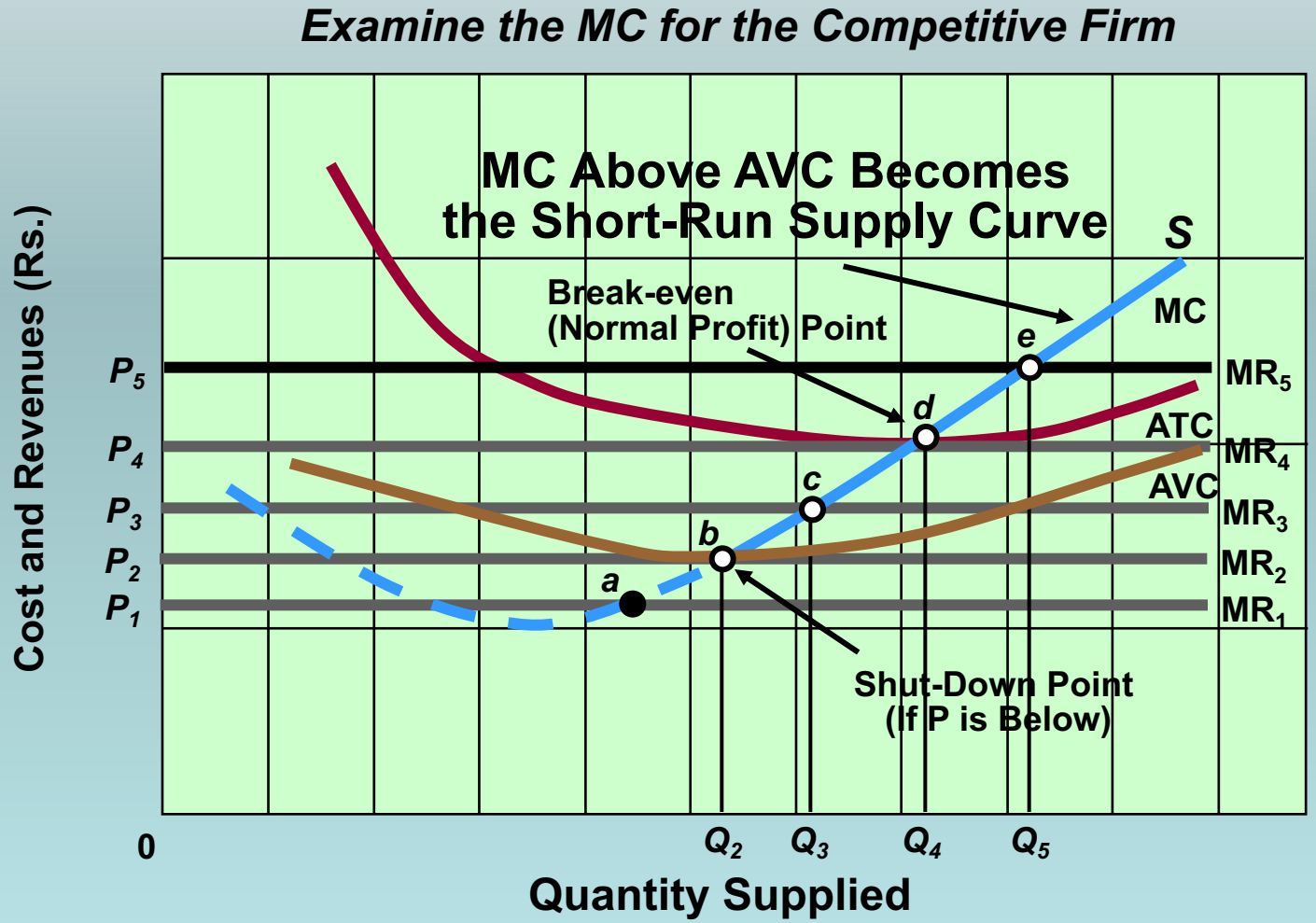
Short-Run Supply Curve

Firms produce where MR=MC



Short-Run Supply Curve

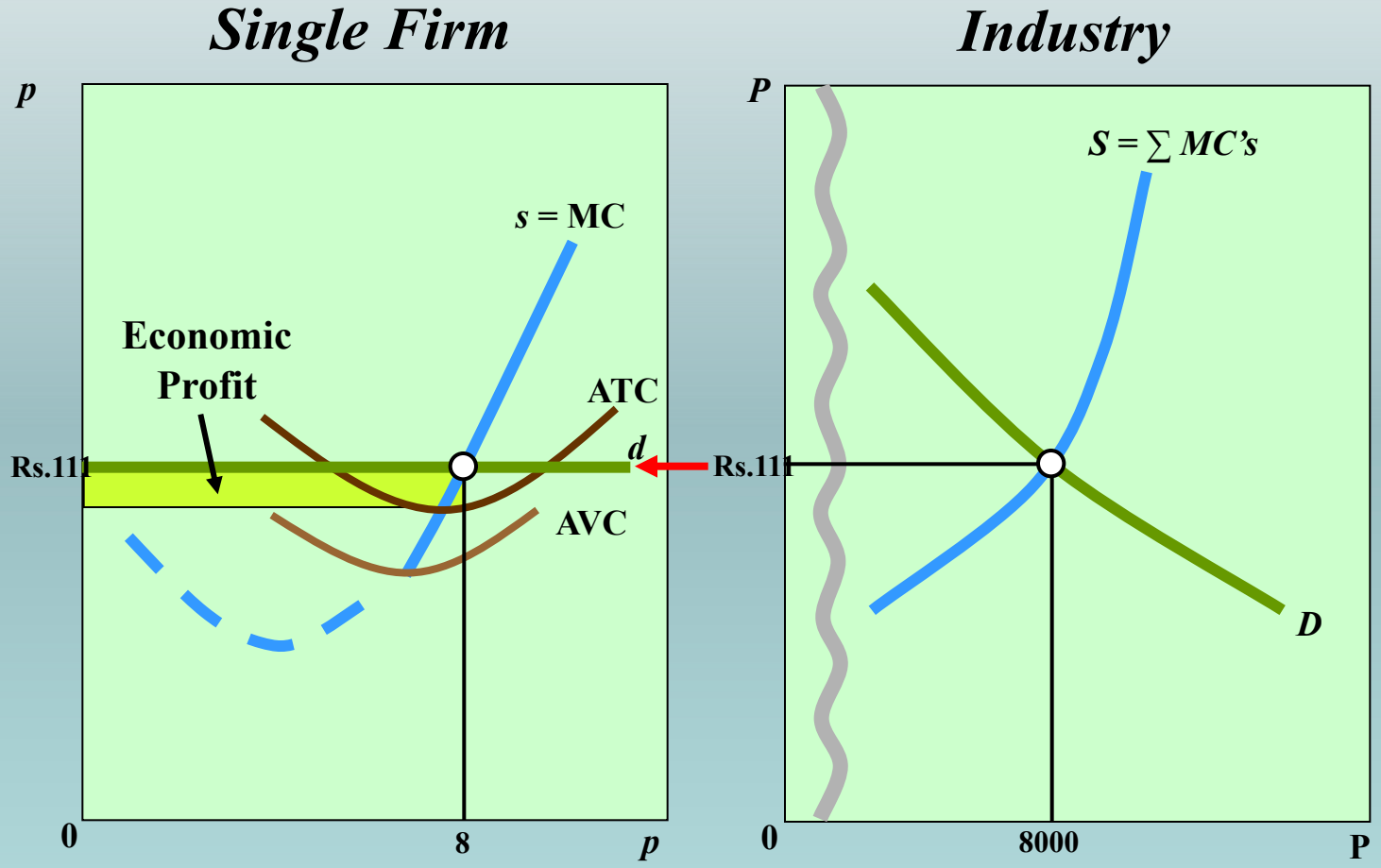
Firms produce where MR=MC



Firm and Industry Supply

- Changes in firm supply
  - Shifts in marginal cost
  - Input price or technology
- The industry (total) supply curve
  - Sum of individual supply
- Industry supply and demand
  - Determine market price

Firm and Industry Supply

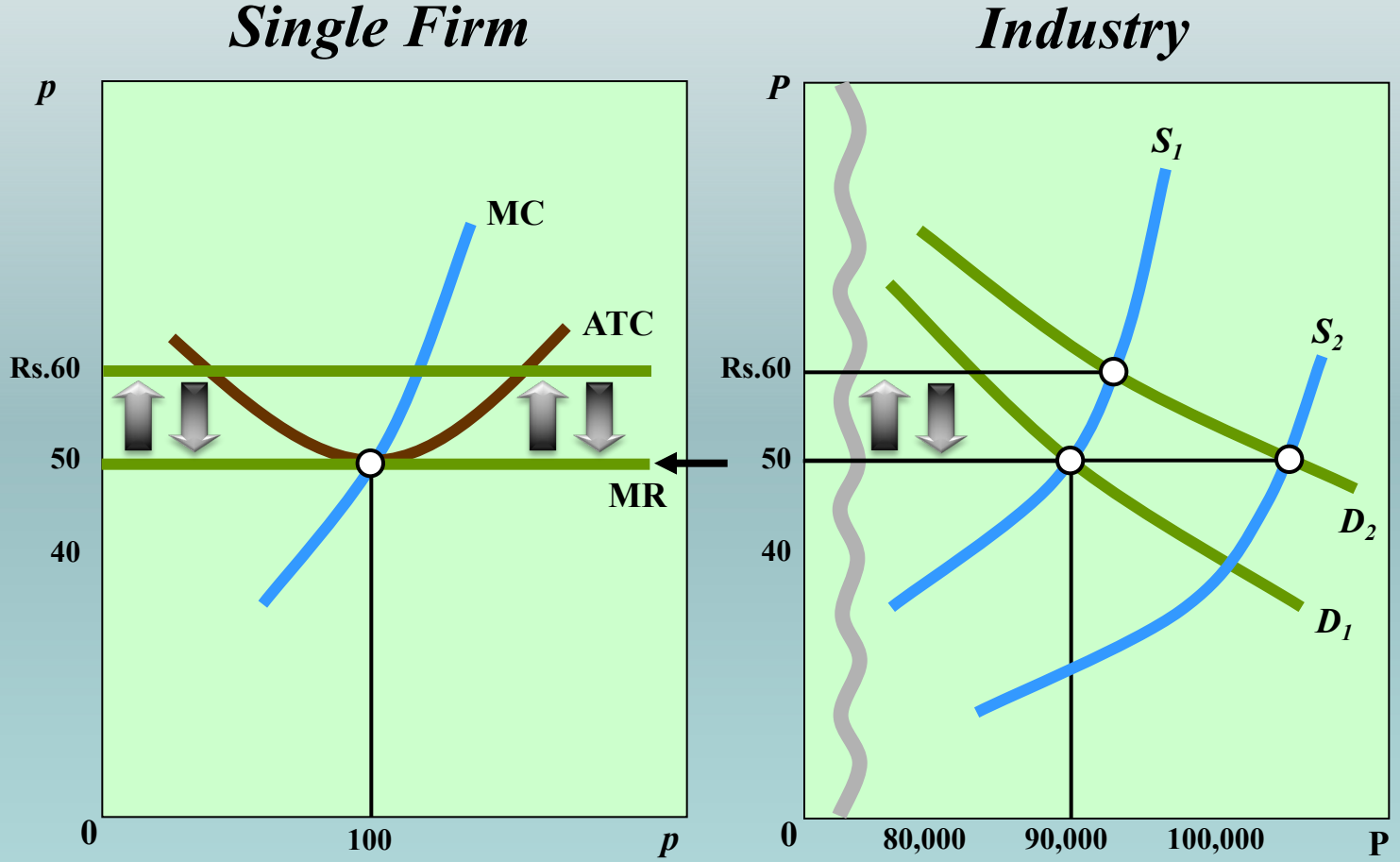


Competitive firm must take the price that is Established by industry supply and demand

Long Run Profit Maximization

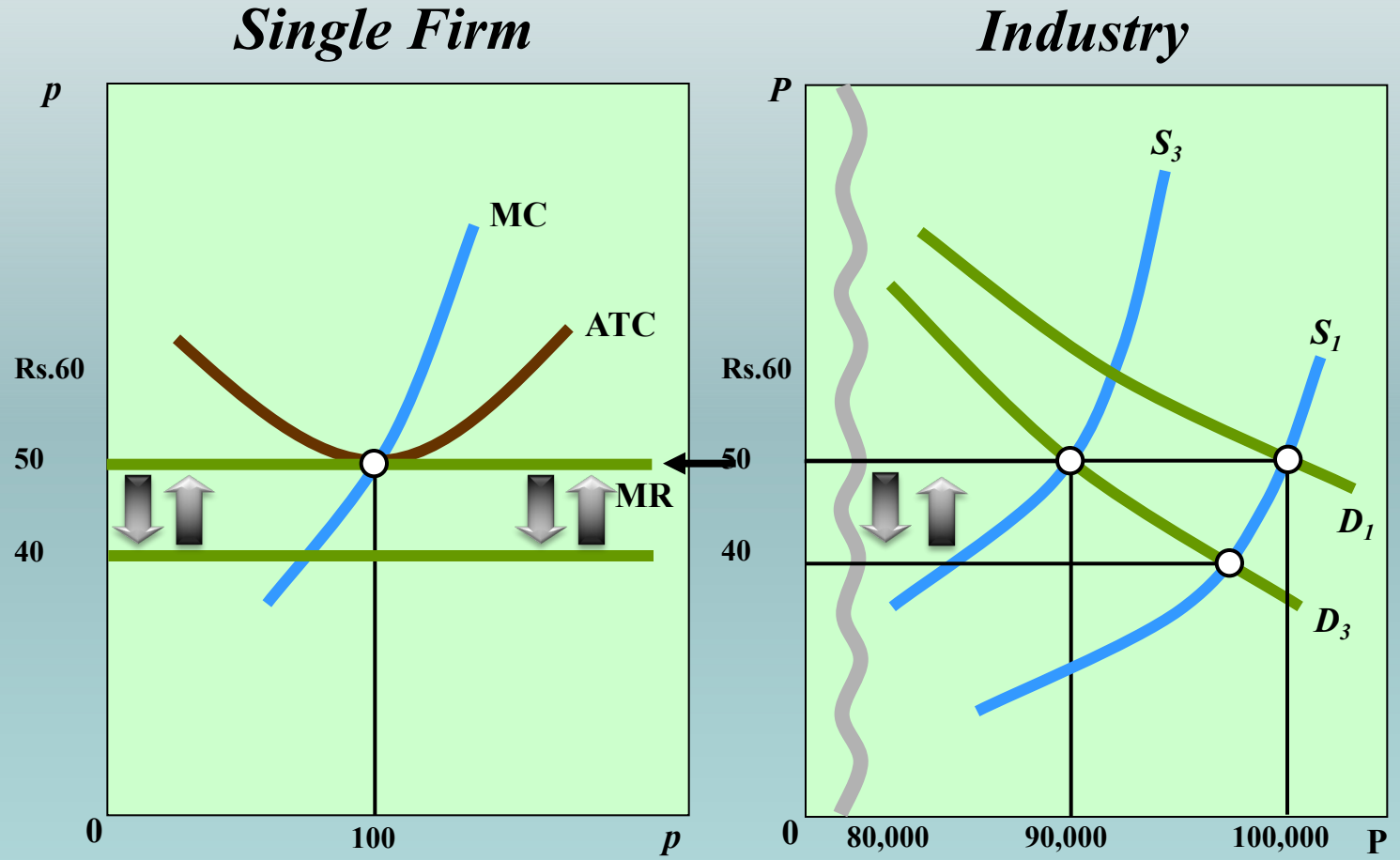
- Assumptions
  - Entry and exit only
  - Identical costs
  - Constant-cost industry
- Goal of the analysis
  - In the long run, P = min ATC
  - Entry eliminates profits
  - Exit eliminates losses

Entry Eliminates Profits



An increase in demand temporarily raises price. Higher prices draw in new competitors. Increased supply returns price to equilibrium

Exit Eliminates Losses



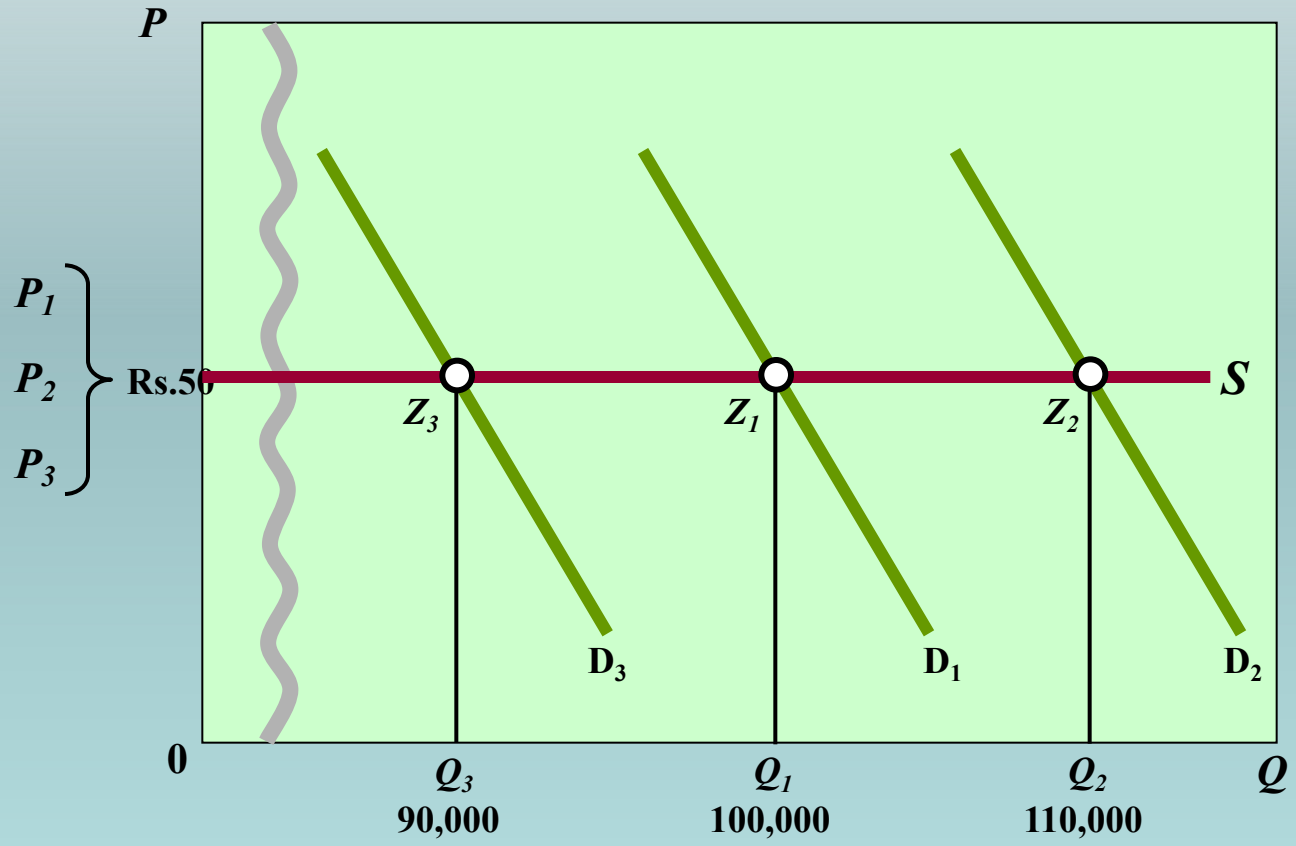
A decrease in demand temporarily lowers price. Lower prices drive away some competitors. Decreased supply returns price to equilibrium

Long Run Supply

- Constant cost industry
  - Entry/exit does not affect LR ATC
  - Constant resource price
  - Special case
- Increasing cost industry
  - Most industries
  - LR ATC increases with expansion
  - Specialized resources
- Decreasing cost industry

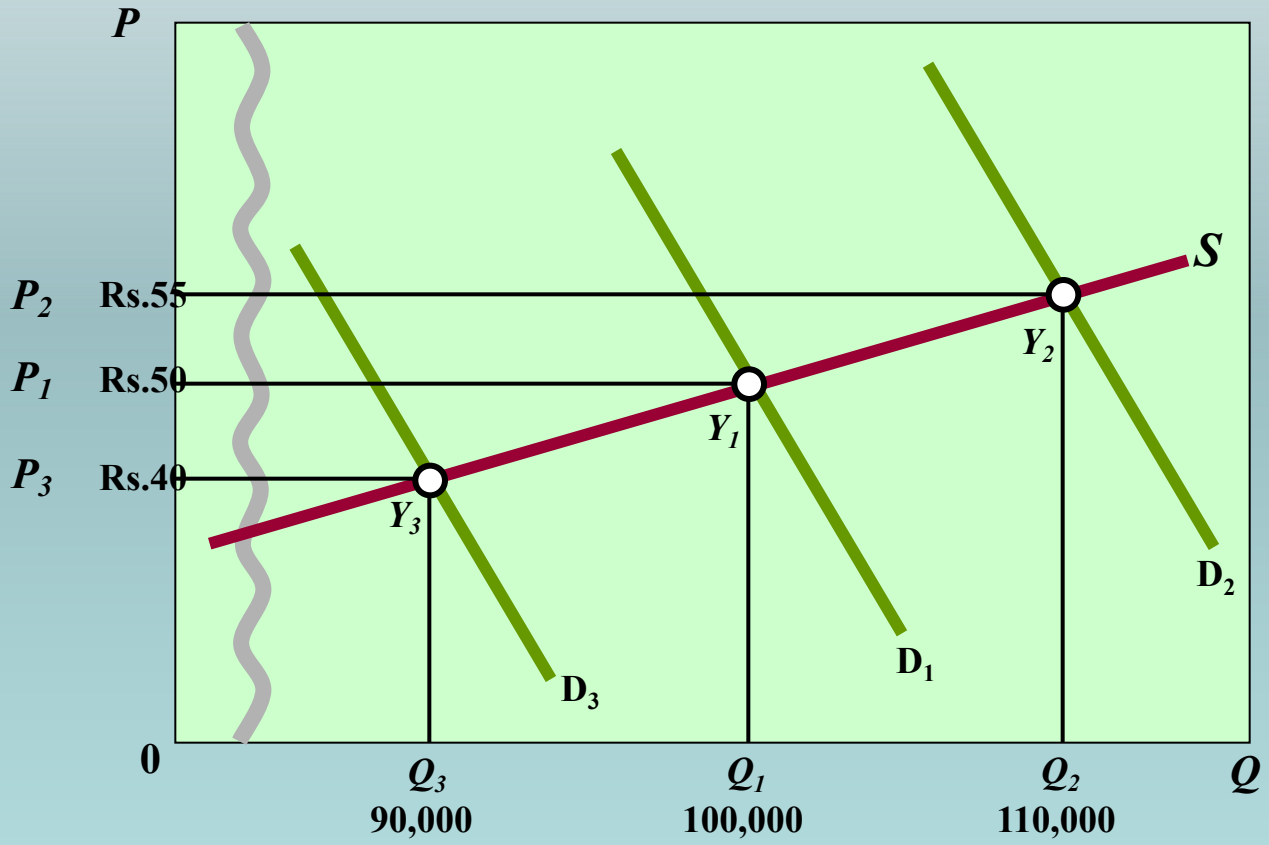
Long-Run Supply Curve

Constant-Cost Industry



Long-Run Supply Curve

Increasing-Cost Industry



How would a decreasing-cost industry look?

Pure Competition and Efficiency

- Productive efficiency

  P = minimum ATC

- Allocative efficiency

  P = MC

- Maximum consumer and producer surplus
- Dynamic adjustments
- “Invisible Hand” revisited

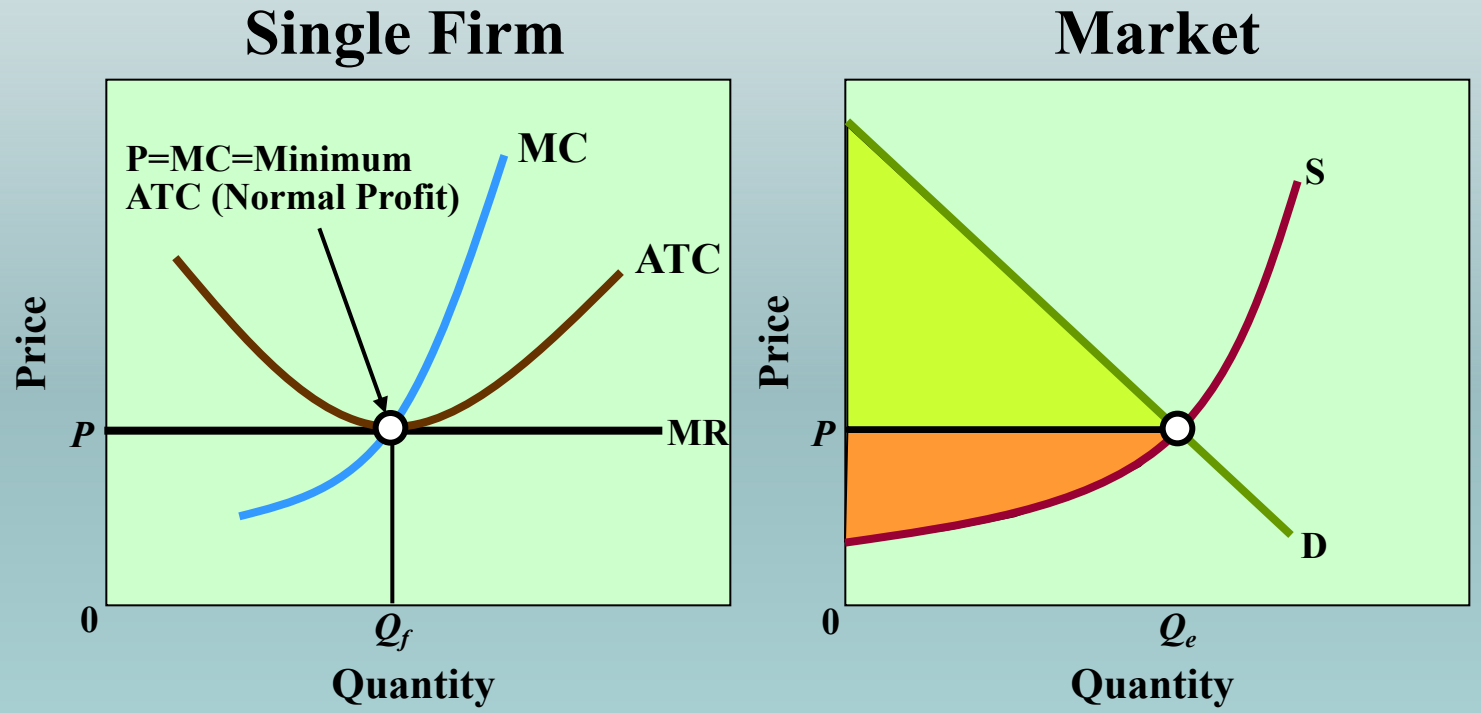
Invisible Hand

- The invisible hand is a symbol for the unseen forces that move the free market economy.
- Through individual self-interest and freedom of production as well as consumption, the best interest of society, as a whole, are fulfilled.
- The constant relationship of individual pressures on market supply and demand causes the natural movement of prices and the flow of trade.

Invisible Hand

- The invisible hand is part of *laissez-faire,* approach to the market.
- In other words, the approach holds that the market will find its equilibrium without government or other interventions forcing it into unnatural patterns.

Long-Run Equilibrium



Productive Efficiency: Price = minimum ATC

Allocate Efficiency: Price = MC Pure competition has both in its long-run equilibrium