

APPLIED ECONOMICS FOR MANAGERS: SESSION 5

I. REVIEW

A. CONSUMER THEORY

1. THE PROBLEM:

a. CHOOSE A COLLECTION OF GOODS & SERVICES—
QUANTITIES OF X_1, X_2, \dots, X_N THAT MAXIMIZES UTILITY

b. SUBJECT TO THE BUDGET CONSTRAINT:

$$B \geq P_1X_1 + P_2X_2 + \dots + P_NX_N$$

2. THE SOLUTION:

a. SPEND ENTIRE BUDGET (GET TO THE FRONTIER OF
THE FEASIBLE BUNDLES)

$$B = P_1X_1 + P_2X_2 + \dots + P_NX_N$$

b. CHOOSE THAT COLLECTION ON THE FRONTIER THAT
SATISFIES THE EQUIMARGINAL PRINCIPLE:

$$\frac{MU_1}{P_1} = \frac{MU_2}{P_2} = \dots = \frac{MU_N}{P_N}$$

B. IMPLICATIONS:

1. DEMAND CURVES SLOPE DOWNWARD

2. IN EQUILIBRIUM, ALL CONSUMERS OBEY THE
EQUIMARGINAL PRINCIPLE AND ALL FACE THE SAME
RELATIVE PRICES, VALUE AT THE MARGIN, WILL BE THE
SAME FOR ALL CUSTOMERS, E.G.,

$$\frac{P_X}{P_Y} = \frac{MU_X}{MU_Y}$$

E.G. SUPPOSE THAT $P_X = \$6$ AND $P_Y = \$2$. THEN $MU_X/MU_Y = 3$. I.E.,
IN EQUILIBRIUM, EACH CONSUMER CONSIDERS ONE MORE
UNIT OF X TO BE WORTH 3 MORE UNITS OF Y. THE \$ VALUE OF
THOSE 3 Y UNITS WOULD BE \$6—EXACTLY WHAT P_X SHOWS

II. PRODUCER BEHAVIOR

A. OBJECTIVE: PROFIT MAXIMIZATION, I.E., MAXIMIZE THE DIFFERENCE BETWEEN REVENUE AND COSTS, $R(Q) - C(Q)$

B. A PRODUCTION EXPERIMENT

C. REVENUE: PRICE TIMES QUANTITY = PQ

1. TOTAL REVENUE

2. MARGINAL REVENUE

D. COST CONCEPTS

1. TOTAL COST = $TC(Q)$

2. AVERAGE COST = $\frac{TC(Q)}{Q}$

3. MARGINAL COST = $\frac{\Delta TC(Q)}{\Delta Q} = \frac{dTC}{dQ}$

E. NECESSARY CONDITION FOR PROFIT MAXIMIZATION:
MARGINAL REVENUE = MARGINAL COST

F. SUPPLY CURVE FOR THE COMPETITIVE INDUSTRY

1. $P = MC$ FOR EACH FIRM

2. AT ANY GIVEN P , DETERMINE Q THAT LEADS TO MC EQUAL TO THAT PRICE AT EACH FIRM

3. ADD OUTPUT OF EACH FIRM TOGETHER TO GET TOTAL INDUSTRY OUTPUT AT THAT PRICE

4. REPEAT FOR OTHER PRICE LEVELS

III. COMPETITIVE EQUILIBRIUM IN THE SHORT- AND LONG-RUN

A. PROFIT MAXIMIZATION AT COMPETITIVE FIRMS

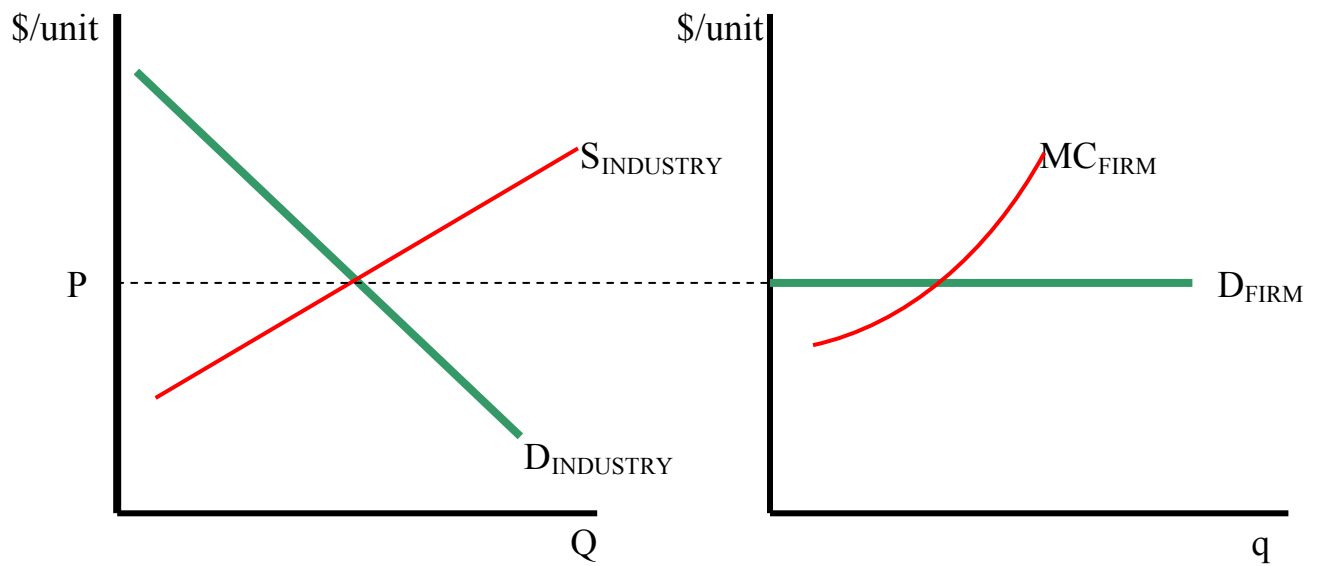
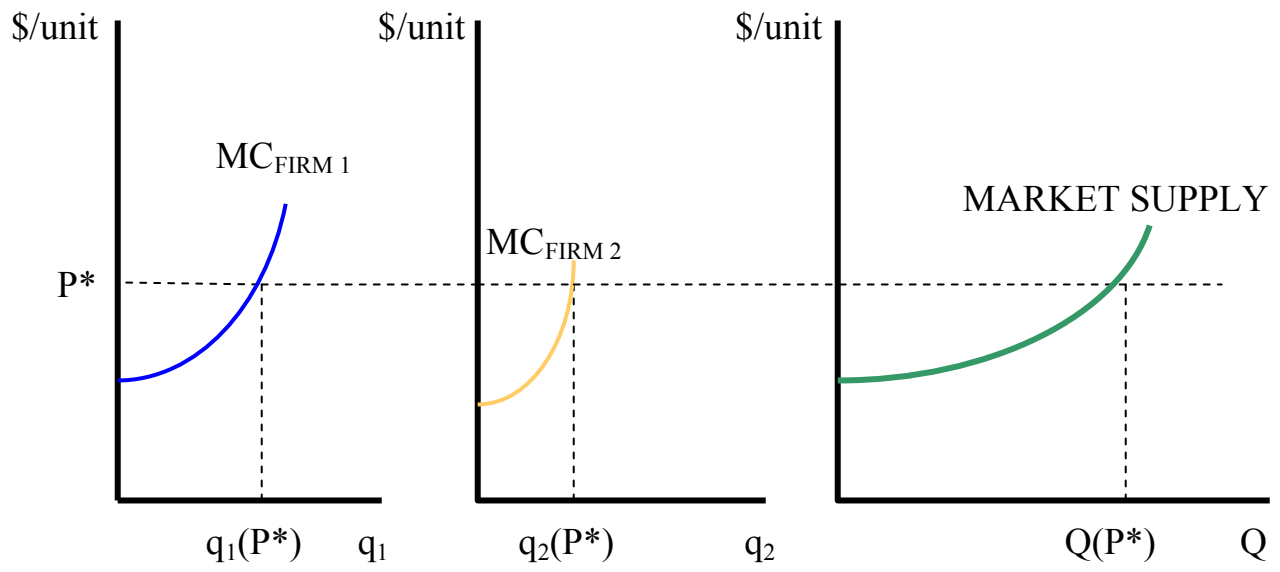
1. FIRM DEMAND CURVE VS. INDUSTRY DEMAND CURVE
2. OPTIMAL PRODUCTION FOR A PROFIT-MAXIMIZING COMPETITIVE FIRM

B. COMPETITIVE FIRMS AND PROFIT MAXIMIZATION IN THE SHORT-RUN AND THE LONG-RUN

1. $P = MC$ AS THE NECESSARY CONDITION
2. $P = AC$ AS THE LONG-RUN EQUILIBRIUM (NO ENTRY) CONDITION

C. UNDERSTANDING THE COMPETITIVE OUTCOME

1. THE COMPETITIVE INDUSTRY SUPPLY CURVE AND MARGINAL COST CURVES
2. THE LONG-RUN COMPETITIVE INDUSTRY OUTCOME
 - a. $P = AC$
 - b. $P = MC$
 - c. $P_X = \frac{MU_X}{MU_Y} P_Y$



\$/UNIT

AC

MC

Possible Short-Run
Equilibrium

Long-run Equilibrium

q

