**Perfect Competition**

 Model developed from a number of simplifying assumptions

1. Product is standardized within a given industry

2. Consumers/Producers have perfect information

3. Factors of production are perfectly mobile in the long run

 Conditions adequately describe only a few industries

 Model serves as paradigm

Firm

P

q

d

P\*

Market

P

Q

D

P\*

S

Q\*

Price determined by market

Individual firms’ decisions don’t impact market price

d is the individual firm’s demand curve

Theoretically, firm could sell all it wants at market determined price, P\*

For each unit firm sells, total revenue increases by P: ∆TR=$\overbar{P}∆q$

**Short Run**

$$π$$

Output

The

q\*

q1

q2

Output

The

q\*

$

P\*

q1

q2

SMC

MR

Profit max at q\* where MR=MC

From output of 0 to q\*: $\frac{∂π}{∂q}$ > 0 MR>MC

Revenues increasing faster than costs with output

Beyond q\*: $\frac{∂π}{∂q}$ < 0 MR<MC

Is the firm making a profit at q1?

Is it making a profit at q2?

Why doesn’t the profit maximizing firm produce up to q2?

 Total profit calculation (short run)

π = Pq – TC (multiply/divide by q)

 $\left(\frac{q}{q}\right)π=q\left(\frac{pq}{q}-\frac{TC}{q}\right)$

 = q (P- SAC) SAC – short run average cost

Output

The

q\*

$

P\*

SMC

MR

SAC

e

a

Pa

Area of rectangle is short run economic profit (area P\*eaPa)

What is the definition of economic profits?

**Long Run**

In long run, economic profit should trigger entry into industry until profits eliminated

Firms in long run should make normal return – zero economic profit

Define zero economic profit. Could zero economic profit be consistent with substantial accounting profit?

Long run firm entry/exit should drive profit-maximizing firm to make normal return

Output

$

P\*

LAC

q\*

e

d

P\* - determined by market

At q\* Price = LAC; economic profit is zero

What returns to scale does the above firm experience at output less than q\*? beyond q\*?

Suppose the firm never experienced decreasing returns to scale. Could we find a unique zero profit equilibrium?

If each firm is at point e, no reason for exit or entry

 **Industry in equilibrium**

Constant Cost Industry

P

Q

LS

Increasing Cost Industry

P

Q

LS

**In competitive model**

LS is collection of equilibrium points

Each firm in industry making normal return

If as industry expands, input prices rise, LS upward sloping (**Increasing Cost Industry**)

If input prices remain constant as industry expands, LS is horizontal (**Constant Cost Industry**)

Supply elasticity measures the responsiveness of the industry quantity supplied to price.

 Industry Supply elasticity: $\frac{\%∆Q\_{s}}{\%∆P}$

[Estimated Long Run Supply Elasticities](http://milesfinney.net/410/handout/supply.pdf) (Urban Housing Analysis)

**Producer Surplus**

Return to the owners of inputs beyond the amount they would have been willing to accept

Reflects net benefit suppliers derive from an industry (Example: ethnic restaurants in Monterey Park)

P

Q

LS

producer surplus

 **Consumer Surplus**

Measure of net gain to consumers from purchasing a good

Arises from difference between market price and the consumer’s willingness to pay

P

Q

D

$10=P1

Q1

$15

Q’

consumer surplus at P1

At P1 all but marginal consumer making up Q1 are willing to pay more than $10

For example some consumer willing to pay $15 for Q’th unit of the good

Consumer surplus area represents difference between consumers’ willingness to pay and final price (P1) of good

 **Under competitive structure**

Market

P

Q

D

P\*

Q\*

**CS**

**PS**

LS

Market established prices maximize

PS + CS

Net gain to society from using resources

to produce output is maximized at P\*Q\*

[Market for Peanuts](http://milesfinney.net/410/handout/peanut.docx)