

Market structure II: monopoly

Step 1: single producer - monopoly; single good produced
- firm's demand = market demand curve

Questions for producer:

- how much to produce (to max profits)?
- what price to charge?
 - what will profits be / is it worth operating in this market?

Ass'm # 1:

Producer's goal is to max profits
= total revenue - total costs

Ass'm # 2:

arbitrage pricing: all units sold for same price

Def'n: arbitrage: process of buying a commodity and then reselling at a favorable price

If resale possible, then arbitrage implies a single price in market

Given sole producer and arbitrage pricing - monopolist chooses point (price, quantity combination) on market demand curve.

Recall: price elasticity of demand = $\frac{\% \Delta q}{\% \Delta p} = \frac{\Delta q / q}{\Delta p / p}$

as $\Delta p \rightarrow 0$, this ratio becomes $\frac{p}{q} \frac{dq}{dp}$

where dq/dp is slope of demand curve

Total revenue and elasticity of demand:

Total revenue = $TR = pq$

From producer's perspective: As vary quantity, move along demand curve; what happens to TR?

$$\begin{aligned}\frac{dTR}{dq} &= \frac{d(pq)}{dq} = p + q \frac{dp}{dq} \\ &= p \left(1 + \frac{q}{p} \frac{dp}{dq} \right) = p \left(1 + \frac{1}{\eta} \right)\end{aligned}$$

Here, $\eta \leq 0$, since demand curve has negative slope.

So: if demand elastic, so $\eta < -1$, then $q \uparrow$ implies $TR \uparrow$

Result #1: monopolist never produces-and-sells in *inelastic* portion of demand curve - why?

Result # 2: monopolist produces/sells where $MC=MR < p$

i) no "supply curve" for monopolist - need more knowledge of demand curve;

ii) monopoly inefficient: DWL because $MC < p$ when must sell all units at same price.

Implication: consider textbooks. Authors receive royalties, percentage of sale price. Author and publisher are in conflict over book's price - author wants lower price. Why?

iii) suppose imposed tax on monopolist - who pays, in LR? (ie, in pc, consumer pays all...)

Now...what if monopolist could sell items at different prices....?

Necessary condition? No resale

1. Perfect price discrimination: different price for each unit, sell each to person willing to pay most...

- monopoly outcome efficient
- $CS=0$
- sometimes called "first degree pd"

2. Other types of price discrimination?

I) third degree: different prices in different markets

ex? Movie tickets (not Silvercity)

airplane tickets

domestic vs foreign

- key is to separate buyers in to groups between which seller can easily distinguish

rule: produce where $\Sigma MR=MC$; price from local demand curves

2. Second degree pd: quantity discounts

- different prices charged based on quantity purchased
- phone plans
- electricity

- bus tickets?

- “two-part” tariffs - entry fee + unit charge.