
MARKET POWER:
MONOPOLY
210222

Linear demand q=1-p c=0

- Geometry; foc; TR, MR, …
- p=a-bq and C=cq
- Harberger triangles; GDP %dwl
- Note Posner suggested we might need to include profits in dwl if they are dissipated through rent-seeking competition for them. One estimate (India, 1970's?) then ranged as high as 30% of GDP for dwl !
- Dwl with externalities
- Monopsony
- Back to Pi = TR – TC
- Investigating TR slower; and MR
- And kinked demands (both kinks!)
- Quasi-concavity; h/o
- Marg cost increase doesn't raise output
- Pass-through and convexity and MR slope: rho-concavity h-o

Monopsony

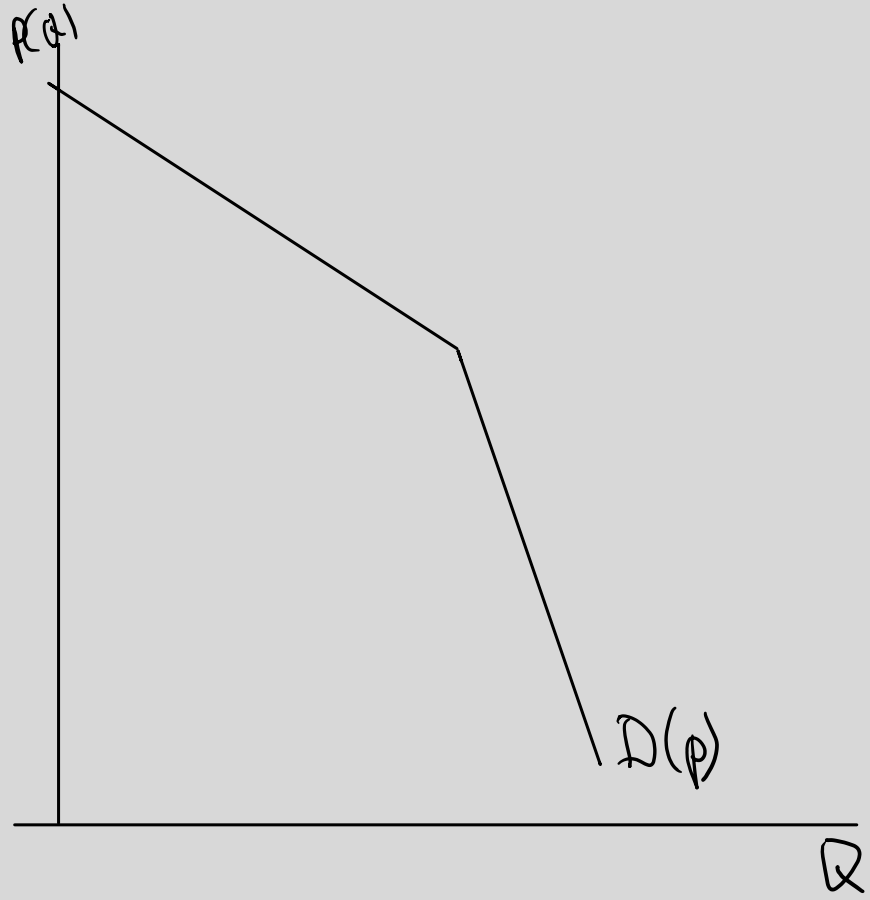
- Single buyer
- Monopoly "on it's head"
- (Inverse) Labor supply w(L),

So wage bill is Lw(L)

Total Revenue, p(Q)Q

- Hence MR=p(Q)+p'(Q)Q
- Picture
- Kinked demand
- 2 cases going forward:
- For 3rd degree Price Discrimination
- For Dominant Firm model

What is MR?



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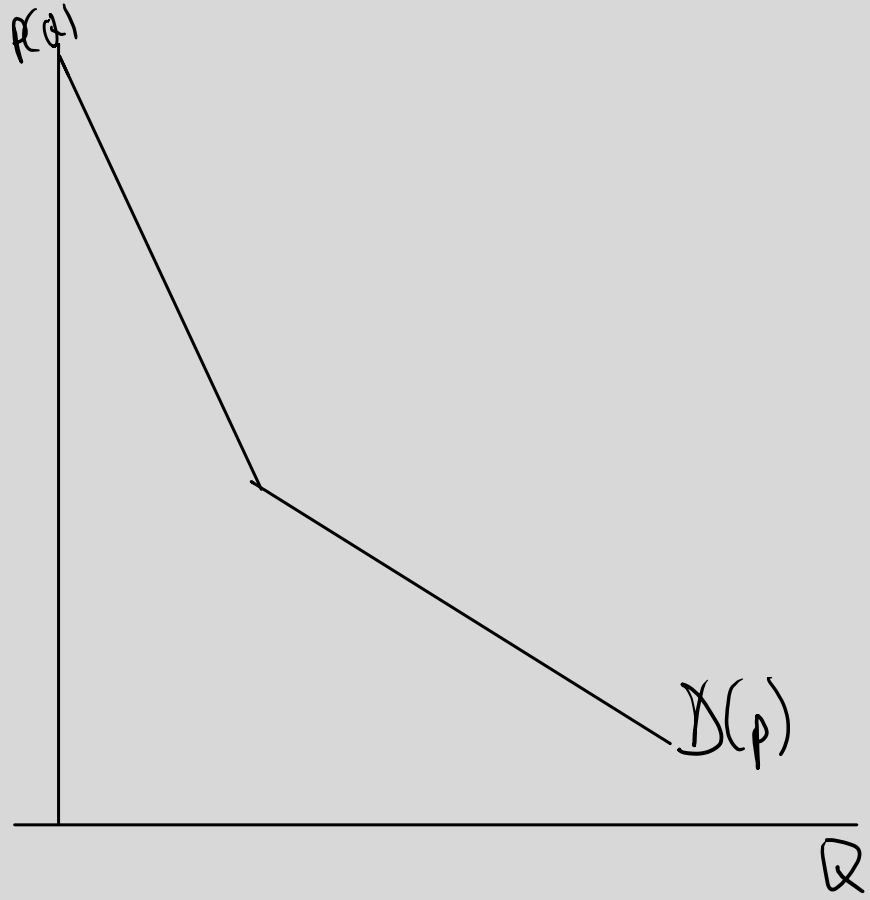

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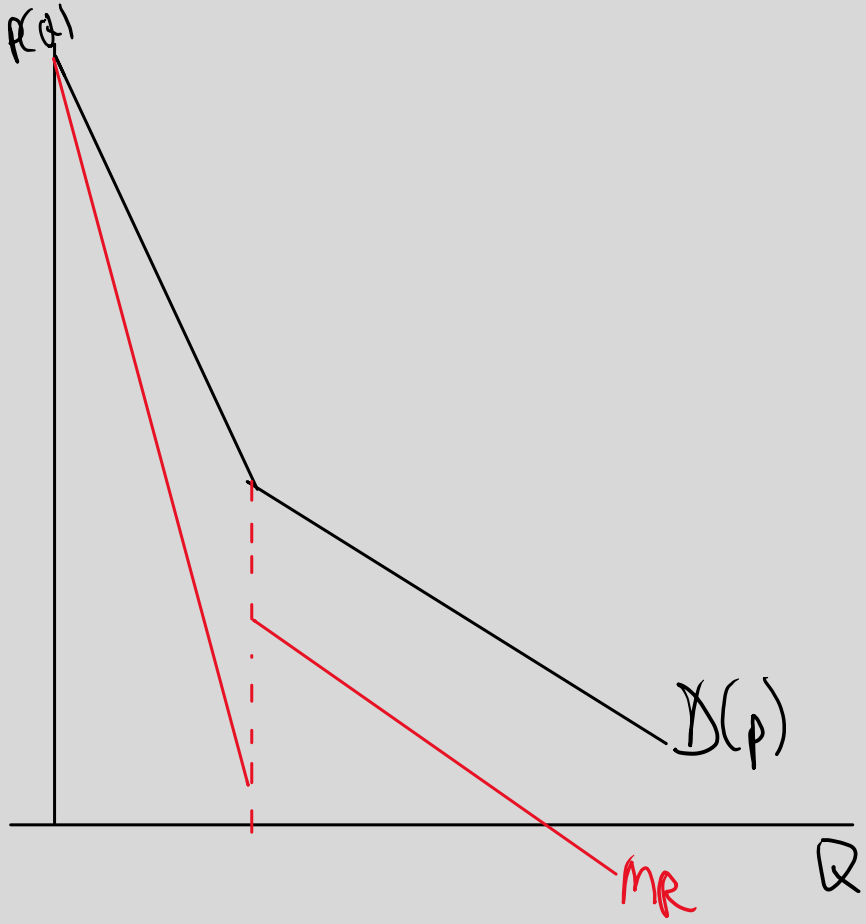
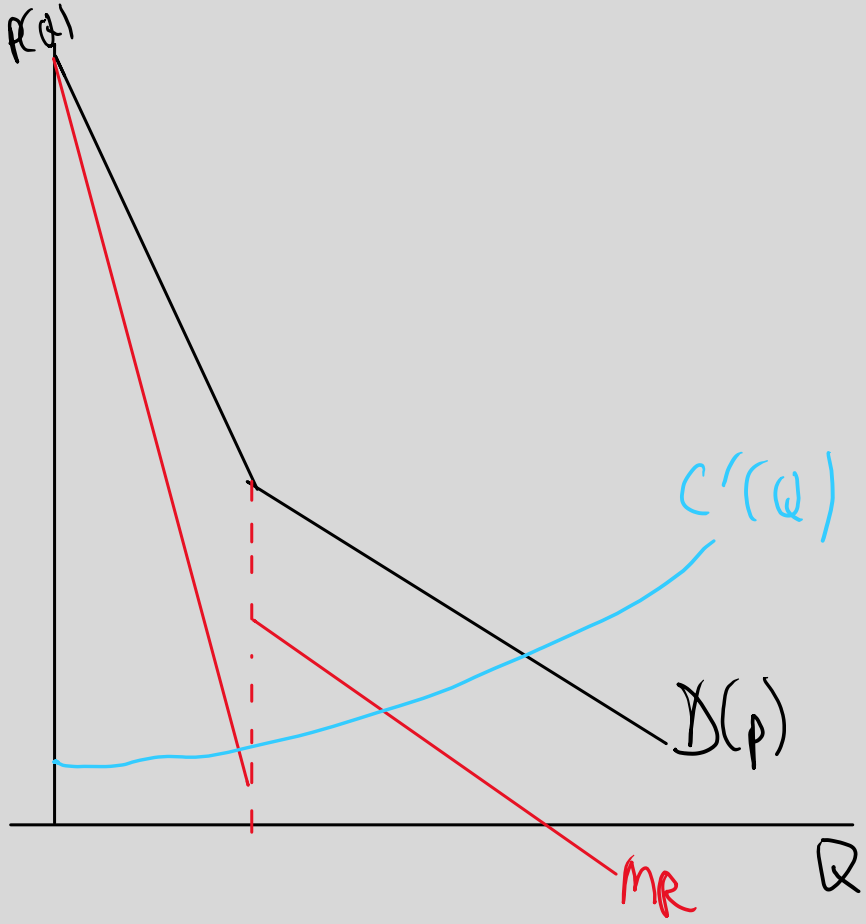
- P'(Q)Q+P(Q)



What is optimal choice?

- P'(Q)Q+P(Q)
- Corresponding Profit Function



“Hand-Out”

- Solution to monopoly problem and Quasi-concavity

Increased Marginal Cost

- Assume $C_1'(Q) > C_2'(Q)$
- Then $Q_1 \leq Q_2$
- (By revealed preference)

Monopoly and c Pass-through

- (or, indeed, unit tax incidence)
- How do we find it?
- We want dp/dc …

Implicit Function Theorem !

- On monopoly foc
- foc: p'(Q)Q+p(Q) – c =0
- So. $\frac{dp}{dc} = \frac{dP}{dQ}\frac{dQ}{dc}$

$$= p'(Q)\left(\frac{1}{p''(Q)Q + 2p'(Q)}\right)$$

- So negative when soc holds

When does soc hold?

- OK for $p'' \leq 0$ (concave demand)
- "boundary" function?
- $p = 1/Q$
- Anything "less convex" gives downslope MR
- (what is MR for $p = 1/Q$?)

Back to pass-through

$$\frac{dp}{dc} < 1 \quad \text{as} \quad \frac{p'}{p''Q + 2p'} < 1$$

$$\text{or} \qquad p' > 2p' + p''Q$$

"boundary" function: $0 = p' + p''Q$

$p = -\ln Q$

anything "less convex" has absorption more than over 100% pass-thru

$TR = -Q \ln Q$

Why? $MR = p - 1$ (parallel MR!)

Hand-out on rho-concavity

- Ties together the points above!
- Next: Price discrimination!

Dominant Firm and Fringe

Oligopoly: Cournot!

- Reaction functions and beyond
- Slopes;
- Comparative statics
- iso-profit loci
- Stackelberg leadership
- Existence theorem