Econ 101 Notes

Agenda 10/30/12

- Bertrand: Heterogeneous Goods
- Sweezy/KDC
- Contestable Markets
- Score Card
- Preview of Coming attractions

Practice Problems from Baye

CH 9: 7, 8, 12, 14, 20
CH10: 2, 5, 12, 14

Bertrand (1880) Model

Structure: 2 or n firms, no entry or exit Perfect Substitutes. Same cost structure

Conduct: each sets own price P_i [lowest price gets all demand]

Performance: Perfect competition: P = MC

Q1: What if the firms have different MC?

A: Lowest MC firms gets whole market, sets $P_1 = MC_2$ ← second lowest MC

Q2: What if the goods are not perfect subs heterogeneous or differentiated goods
This case is very useful in the real world however it is tricky to explain, discussion below

Bertrand- Diff-goods

Demand for #1's output is $Q_1(P_1, P_2) = 16+2P_2-4P_1 = 16 -2P_1 - 2(P_1-P_2)$

↑ Some sensitivity to Price difference

$$\prod_1(P_1, P_2) = P_1Q_1 - C(Q_1) = (P_1 - 2)Q_1$$

$$= (P_1 - 2)(16 + 2P_2 - 4P_1)$$

$FC_1 = FC_2 = 0$

$MC_1 = MC_2 = 2$

FOC:

$$0 = \frac{\partial \pi 1}{\partial P1} = Q_1 + (P_1 - 2)(-4)$$

$$= 16 + 2P_2 - 4P_1 - 4P_1 + 8$$

$$= 24 + 2P_2 - 8P_1$$

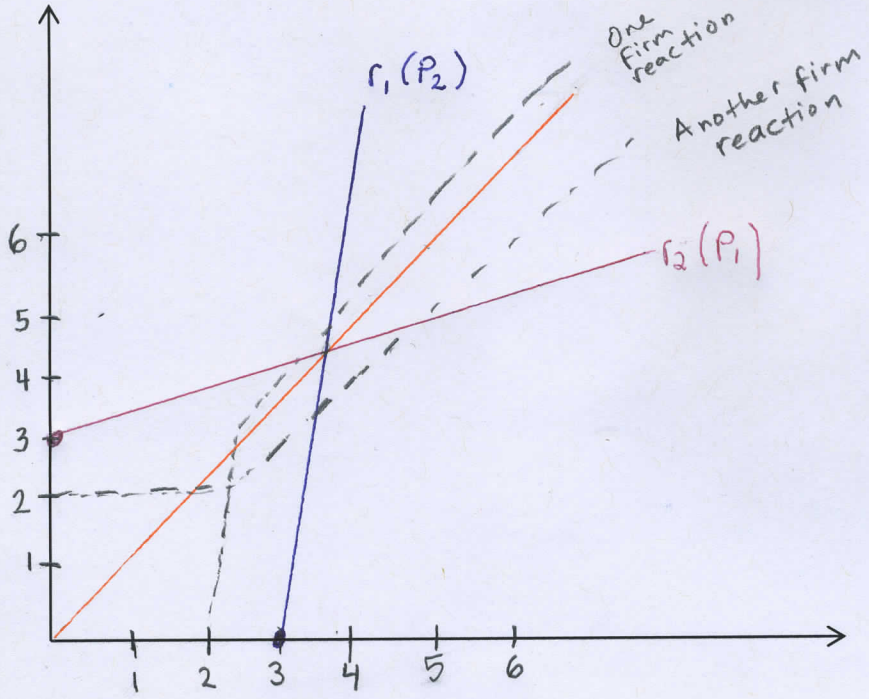
Nice Reaction (Solve for P_1)

$$P* = r1\,(P2) = 3 + \frac{P2}{4}$$

Similarly, firm #2 solves

Max $\prod_{P2 \geq 0} 2\,(P_2, P1)$ Via FOC

$$P* = r2\,(P1) = 3 + \frac{P1}{4}$$



Performance/equilibrium: both firms react optimally to each other

$\pi_2 = P_2 Q - C(Q_2)$

$= P_2 (16 + 2P_1 - 4P_2)$

$P_1 = 4, P_2 = 4$

Sweezy / KDC

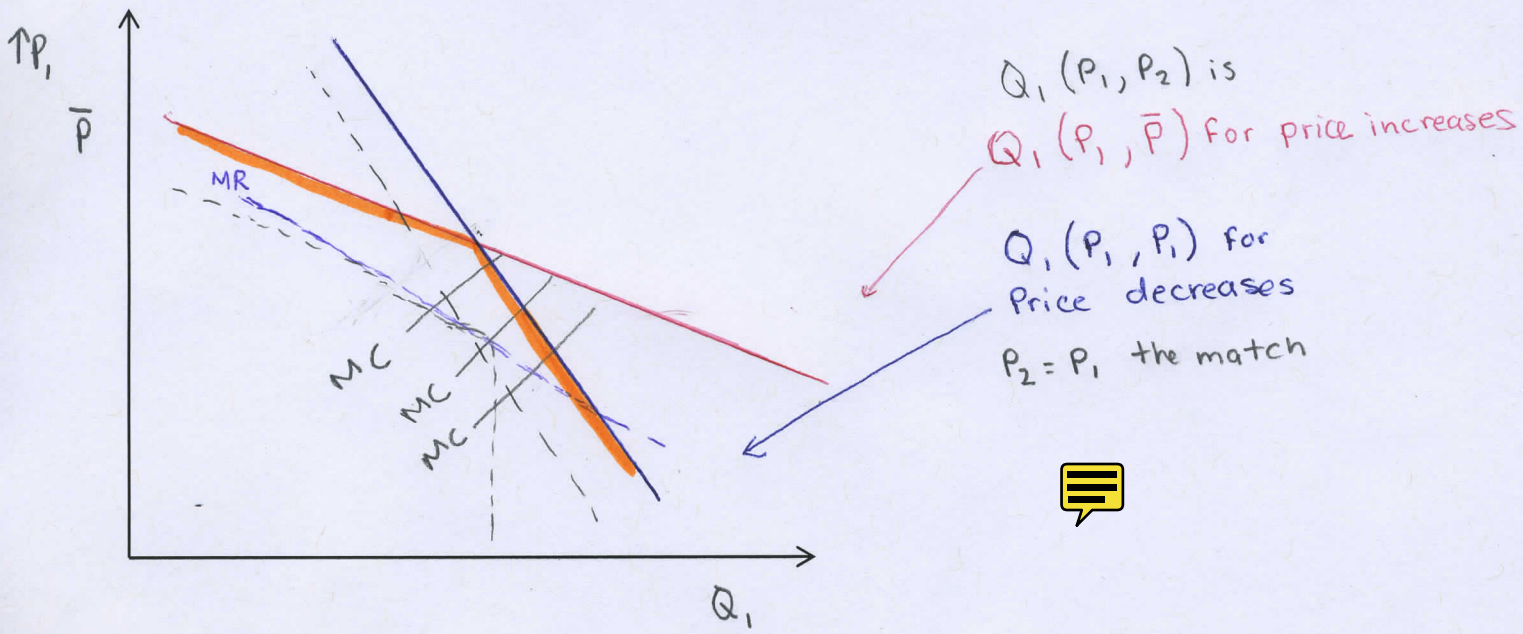
Set up the same as in Bertrand - Diff - Goods

Except

- Each firm anticipates that the other will watch any price decreases from $\bar{P}_1$ but not a price increase

example of industries & Airlines, gasoline

↑ Prevailing Price



$\bar{P}$ is "sticky" even if MC moves around, optimal price does not. We stay at $P_1 = P_2 = \bar{P}$ until a really large Shift in MC takes it outside the MR gap

Contestable Markets (Baumol ~ 1980)

- Perfect substitutes
- Price setting firms
- Free entry + exit → no sunk cost
- Rivals can react as quickly as consumers to prices (ex. Lunch truck)

Then:

Bertrand Competition drives price to second-lowest MC of any possible entrant
→ A monopoly! But very competitive!
Really? Will they price this low?? … Game theory
(Whatever it takes to discourage rivals)