lecture 9: competition and antitrust: market structure (contd.)

the story so far

Regulation of a natural monopoly:

- Definitions
- (Ideal) Pricing solutions
- Regulation in practice
- Regulation under asymmetric information

Competition and antitrust

- Collusion
- Market structure: concentration, scale economies, barriers to entry, potential competition
- Horizontal mergers

to come

Competition and antitrust

- Horizontal agreements (other than horizontal mergers): joint-ventures, cross-licensing, patent pooling
- Vertical mergers

References

- VHV, ch. 7, 8
- MM, ch. 5, 6

Other horizontal agreements

Joint-ventures (JVs)

- Horizontal agreement (non-collusive) creating a new entity to carry out some activity instead of the partners (btw cartel and merger)
- Exs: research JVs, production JVs, marketing JVs, ...
- Economic analysis similar to that of a merger
  - Trade-off btw market power and efficiency

Research JVs

- R&D features spillovers: know-how flows from one firm to another through imitation and worker mobility; this reduces incentives to invest in R&D!
- R&D is non-rival: it can be used by other parties without having its value decreased (thus, diffusion avoids duplication of costs)
- R&D JVs may help to cope with these problems!
- But, spillovers should be important enough + such agreements should be limited in scope (not far into the product market) not to harm competition

Other forms of cooperation regarding technology

- Cross-licensing
  - Two firms allow each other to use technology protected by patents
    - Competition suffers when patents are substitutable and contact has per-unit royalties that reduce incentive to market aggressively
    - When patents are complementary, cross-licensing allows for technological advance
- Patent pool
  - A firm holds patent rights of two or more firms and licenses them to a third party as a package
    - If patents are essential, package is desirable
    - If complementary, pooling keeps royalties lower
    - Decrease transaction costs

Other forms of cooperation regarding technology

- Cooperative standard setting
  - Firms competing in the development of a new technology set common standards
  - Exs: compact discs, tv, web protocols, telephone,...
  - Adv: consumers will all belong to same network (e.g., can exchange computer files,...), enjoy variety in indirect networks, safety (standard will not be abandoned later), fiercer (ex-post) competition
  - But: no competition for the dominant standard (ex-ante competition), so that there is no guarantee that the best will be chosen
  - Thus, caution!

Mergers

- Vertical mergers: between firms with actual or potential buyer-seller relationships

- Conglomerate mergers (all the others):
  - Product extension merger: non-competing firms merge to use same marketing channels or production processes (ex: Pepsico and Pizza Hut)
  - Market extension merger: firms selling same product in different areas
  - Pure: no obvious relationship between firms

Conglomerate mergers

- Potential benefits:
  - conglomerate organizations are better than capital market in allocating investment funds: top management has better information than banks and stockholders
  - managers are constantly under pressure to be efficient by the takeover of another firm

- Anticompetitive effects:
  - eliminating a potential competitor (ex: Procter & Gamble removed itself as a potential competitor by buying Clorox in 67 and a constraint on price in bleach market disappeared)
  - reciprocal dealing: buying from a supplier only if the supplier buys from you
  - predatory pricing: pricing below cost to drive out competitors

Vertical mergers

- Merger of firms with actual or potential buyer-seller relationship
- Coase: there are transaction costs in performing operations inside the firm and in the market, so that firms develop to minimize such costs
- Mergers not only impact costs, but also increase market power and influence price; welfare change is *ex ante* ambiguous!

Vertical mergers

benefits

- Lower costs through (efficiency gain!):
  - Technological economies: joint production may decrease costs because part of technological process is common (ex: integration of ironmaking and steelmaking)
  - Decrease in transaction costs:
    - Coordination costs: in activities such as determining price and bringing sellers and buyers together
    - Motivation costs: cost in inducing people to behave in a manner necessary for trade; examples:
      - Costs may be due to asymmetric information – a firm may not hire another to perform some service because of the inability to measure performance
      - In manufacturer-retailer relationship: a manufacturer may want the retailer to offer services (sales people explaining virtues); some retailers free-ride on the services of the others

Vertical mergers

benefits

- Double marginalization: the price of the input is marked up twice when the supplier and the downstream firm have market power

Vertical mergers

benefits

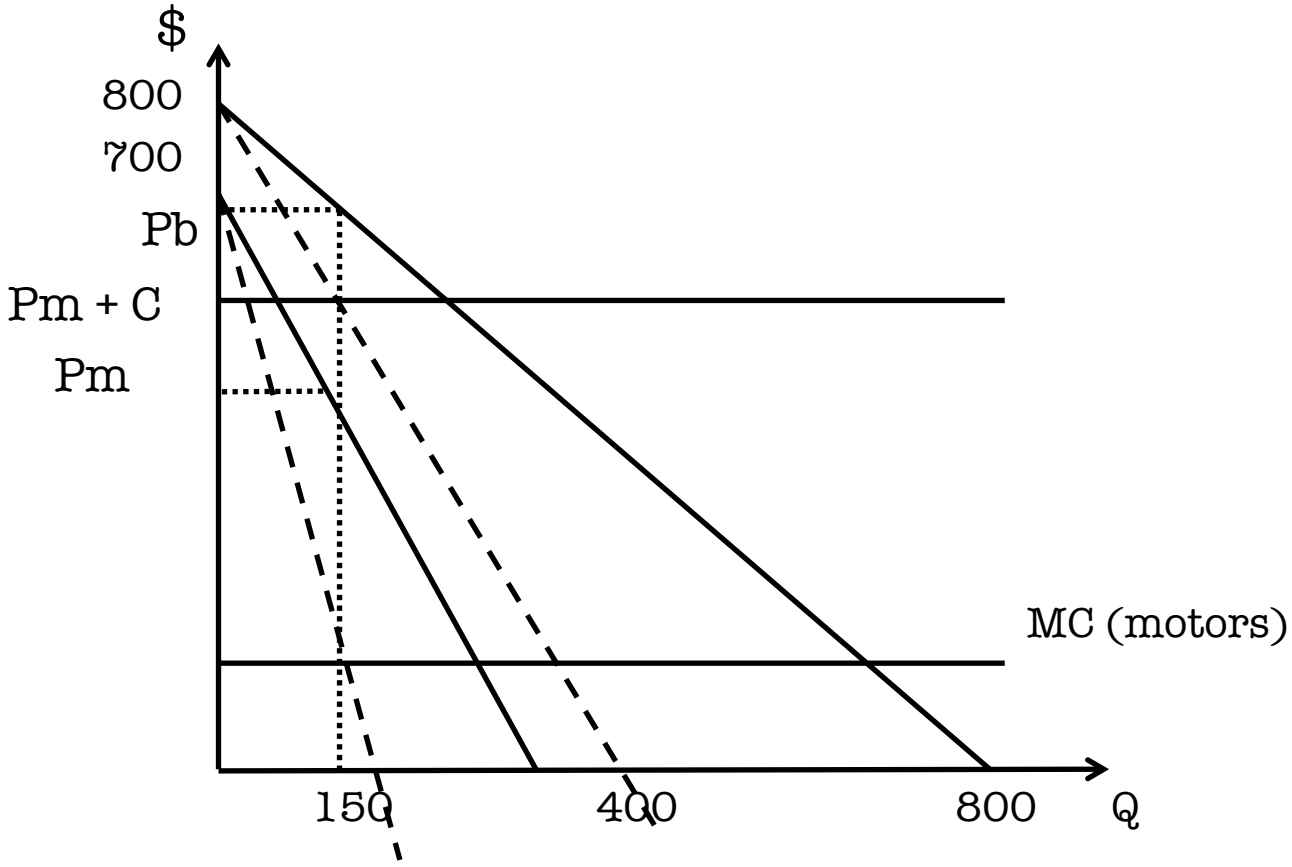
- Double marginalization: the price of the input is marked up twice when the supplier and the downstream firm have market power

- Example: boat monopolist buys motors from motor monopolist and produces boats at a constant conversion cost of C=100 per unit; the boat monopolist accepts price set by motor firm; MCm=100

  Db = 800 – Pb implying Dm = 350 – Pm/2

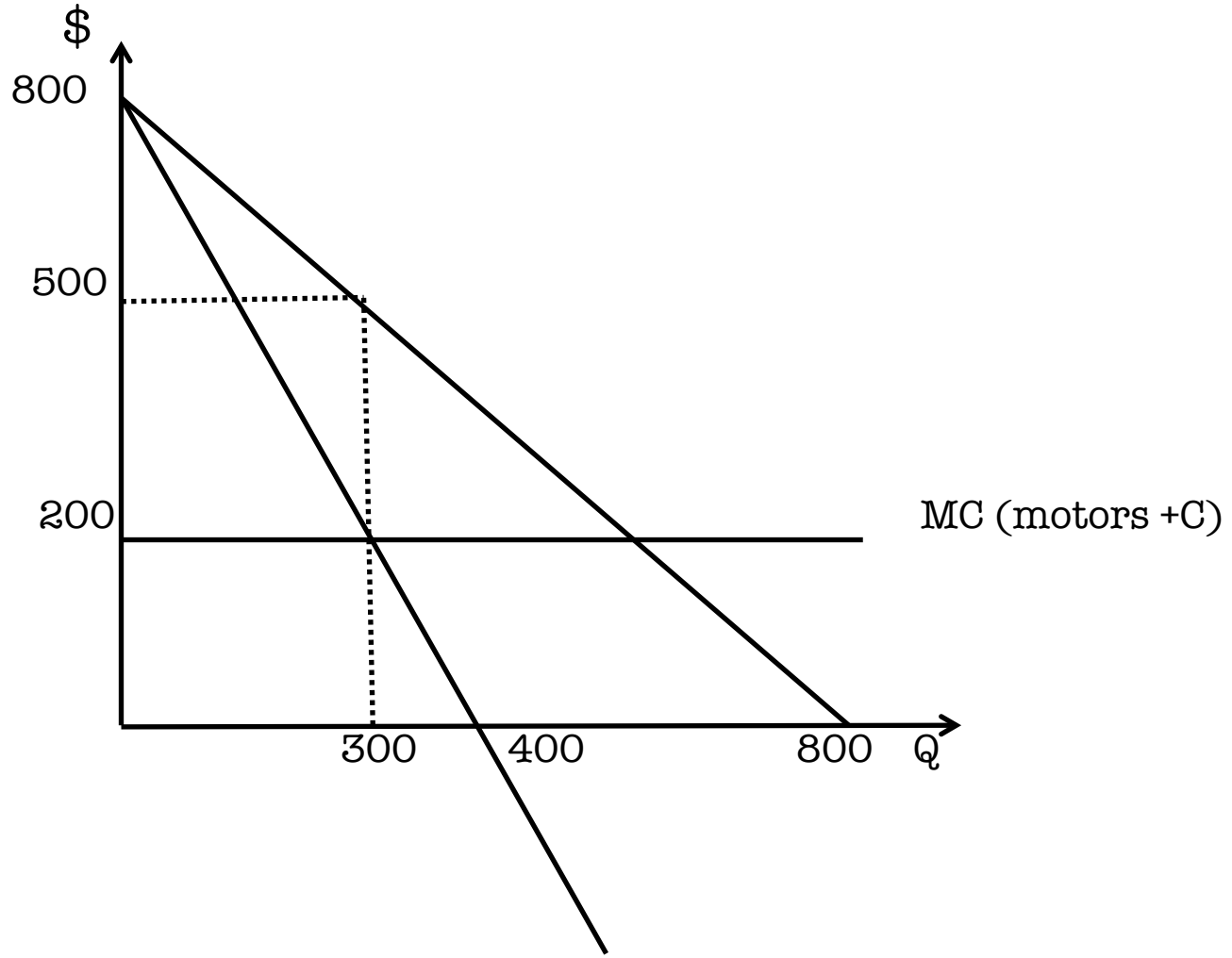
Vertical mergers

double marginalization – example (before merger)



Vertical mergers

double marginalization – example (after merger)



Vertical mergers

benefits

- Double marginalization: the price of the input is marked up twice when the supplier and the downstream firm have market power

- In the case of successive monopolies, a merger will increase both profit and welfare; in the more realistic case of successive oligopolies, double marginalization is also reduced

- Another efficiency gain: when the downstream firm uses multiple inputs and all but one is supplied competitively, an inefficient input mix is used; vertical integration can eliminate it!

Vertical mergers

anticompetitive effects

- The Chicago school showed in the 80s that market foreclosure does not happen; recently, GT identified situations in which foreclosure can have anticompetitive effects

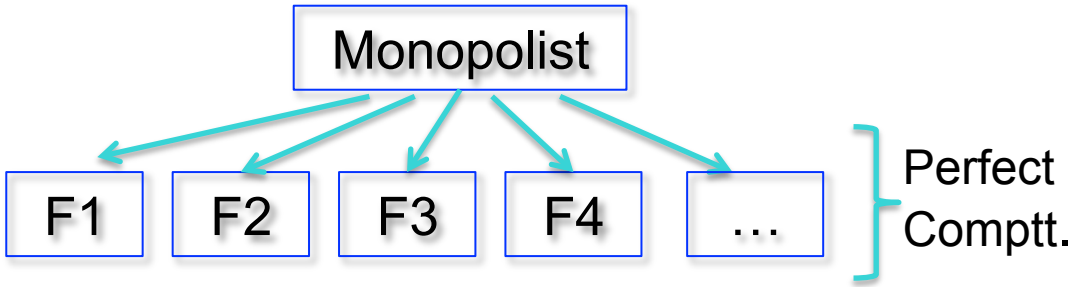
- Ex: the acquisition of ready-mixed concrete firms by a cement supplier forecloses the market for cement to nonintegrated cement suppliers (some demand is taken out of the market)

- It is necessary for a vertical merger to have anticompetitive effects that there is market power in one or both markets

Vertical mergers

anticompetitive effects - monopolization

- Extreme example:



the upstream monopolist acquires one downstream firm (in a perfectly competitive industry) and does not provide input to competing firms, so that the downstream industry becomes a monopoly

Is this anticompetitive?

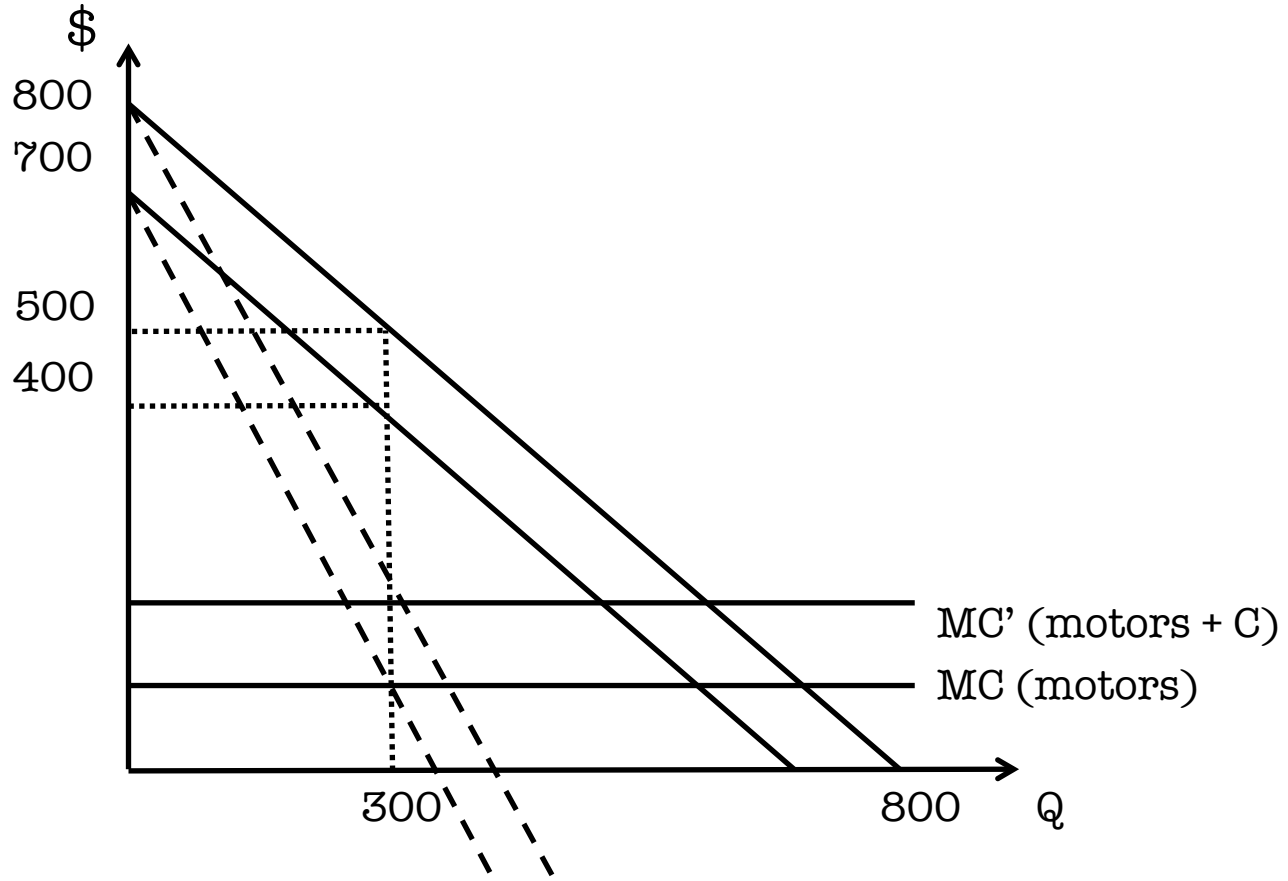
Vertical mergers

anticompetitive effect - monopolization

- Not according to the Chicago school: the final product's price is unaffected in case of a **fixed-proportions** production technology (one unit of output requires a fixed proportion of various inputs)

Vertical mergers

vertical monopolization with fixed proportions production



Vertical mergers

anticompetitive effects - monopolization

- Not according to the Chicago school: the final product's price is unaffected in case of a fixed-proportions production technology (one unit of output requires a fixed proportion of various inputs)

- Here, the monopolist gains nothing by monopolizing downstream (same profit)

- (So, what's the motivation for a merger here?)

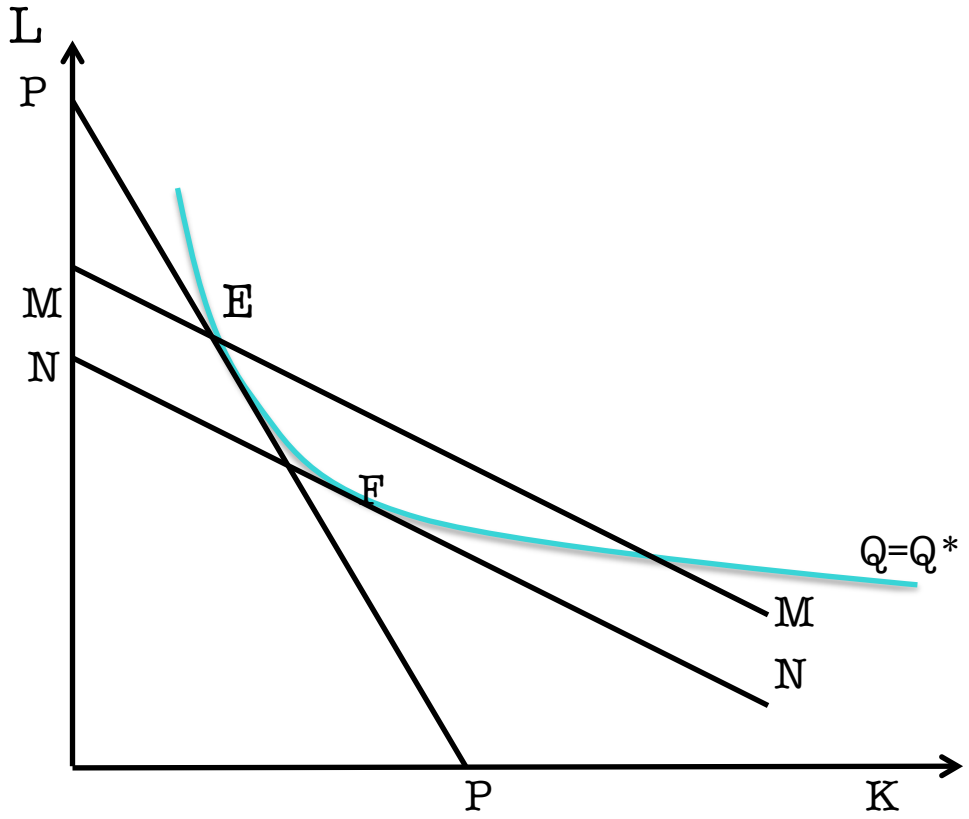
Vertical mergers

anticompetitive effects - monopolization

- Now assume variable proportions
- Example: capital (K) and labor (L) are needed to produce shoes; K is produced by a monopolist

Vertical mergers

variable proportions – example



Vertical mergers

anticompetitive effects - monopolization

- Here, as the price of K is increased, the shoe industry substitutes K for L!!
- Slope of isocost NN = ratio of MCk to wage; so, F: least cost input mix
- Since Pk > MCk, actual pre-merger isocost is PP; so, E is chosen, resulting in loss of MN in units of L
- If the upstream firm monopolizes forward, the production of shoes shifts to F; so, cost saving = MN (merger is profitable)
- But the price can rise or fall due to monopoly pricing... there may be deadweight loss!

Vertical mergers

anticompetitive effects - oligopolies

- When both upstream and downstream markets are oligopolistic, vertical integration can be profitable and raise the final price by causing downstream competitors to have higher costs

- This is the effect "raising rivals' costs;" two types:
  - *Input foreclosure*: the upstream division of an integrated firm does not sell input to other firms, who have to face higher price/inferior quality suppliers
  - *Costumer foreclosure*: upstream suppliers are denied access to selling to the downstream division of an integrated firm; this can result in exit

Vertical mergers

anticompetitive effects - oligopolies

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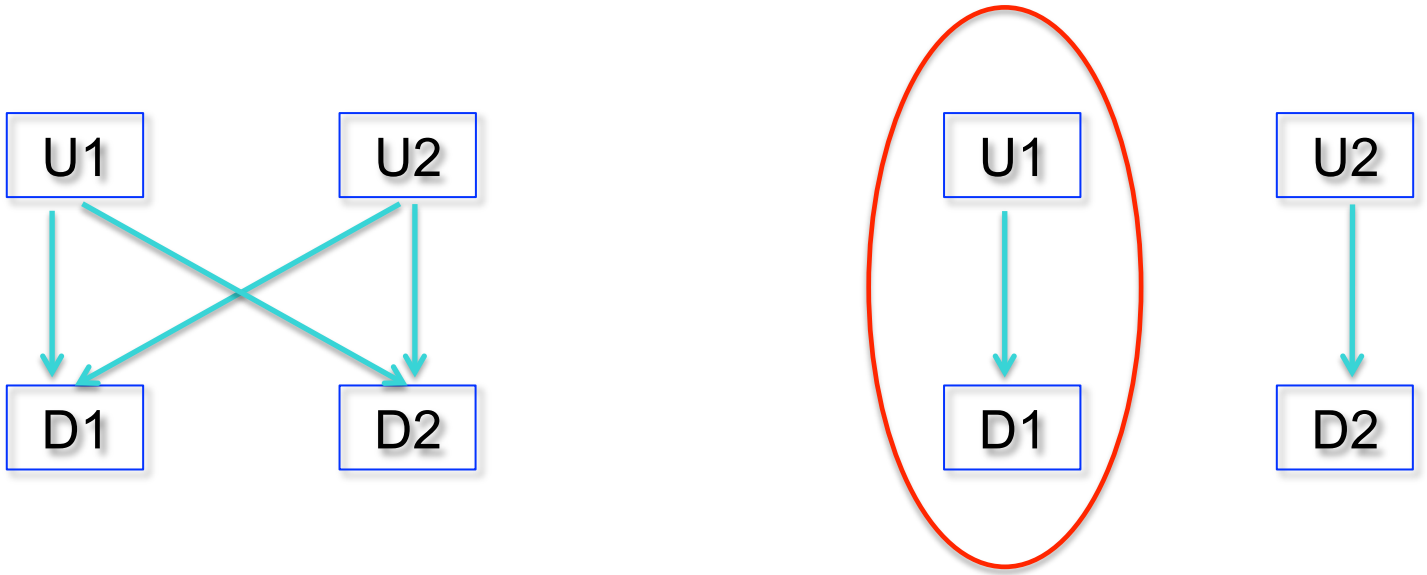
Vertical mergers

anticompetitive effects – oligopolies – input foreclosure



Vertical mergers

anticompetitive effects – oligopolies – input foreclosure

- Ui offer a homogeneous product and have marginal cost of production of 10; Ui price is wi, i=1,2

- D^i offer differentiated products and require 1 unit of the upstream commodity to produce 1 unit of output; D^i's cost is wi if it buys from Ui plus 15

- Let $D^1(p^1,p^2)=100-p^1+0.5p^2$ and $D^2(p^1,p^2)=100-p^2+0.5p^1$

- If downstream firms compete in prices, the NE prices are (w^i is price paid by D^i) $P1 = 76.67 + 0.534w^1 + 0.133w^2$

$$P2 = 76.67 + 0.534w^2 + 0.133w^1$$

Vertical mergers

anticompetitive effects – oligopolies – input foreclosure

- In the absence of a merger, the upstream firms compete in prices; in NE, they charge w1=w2=10, so that P1=P2= 83.34

- If U1 and D^1 merge, the lone supplier of D^2 is U2; what price will U2 set?

- The monopoly price of w2=72.45, so that D^2 ends up with a much higher MC

- Thus, both firms' prices will be higher; the merged firm profits are higher and social welfare is reduced

Vertical mergers

anticompetitive effects – oligopolies – input foreclosure

- But! There are assumptions:

  - Upstream firms produce homogeneous products
  - Compete in prices
  - If not, reducing double marginalization through a merger increases welfare
  - And U1 may prefer to actually supply D^2...
  - U2 and D^2 may integrate themselves too