Unilateral effects

- The concept
  - Unilateral effects is the elimination of significant "local" competition between the merging firms, allowing the merged entity to raise prices or otherwise act anticompetitively independently of how other competitors inside or outside the market react
    - Unilateral effects requires no accommodating conduct by other firms in the market
- An example

Suppose two of the three producers of premium ice cream merge. Although differentiated, the merging firms are each other's closest substitutes. They also compete with regular ice cream producers, but the cross-elasticity of demand with regular ice cream is substantially lower.

A premium-only candidate market fails the HMT, and the *Brown Shoe* indicia—such as pricing, product features, and customer usage—support a broader all-ice-cream market. In that broader market, the postmerger HHI and delta fall below the thresholds needed to trigger the *PNB* structural presumption. On traditional structural analysis, the merger appears competitively unobjectionable.

Nonetheless, the merger eliminates significant head-to-head competition between the merging premium brands. Premerger, a large share of sales lost by one of the merging firms would have captured by the other merging firm. The merged firm internalizes this diversion and thus finds it profitable to raise price postmerger.

The unilateral effects theory captures this loss of localized competition. Even without coordinated behavior or high market concentration, the merger may substantially lessen competition under Section 7 by enabling unilateral price increases through internalization of competitive externalities.

Unilateral effects

- The history
  - The 1992 DOJ/FTC Horizontal Merger Guidelines introduced unilateral effects and recognized it as an anticompetitive effect cognizable under Section 7
  - The courts quickly and widely adopted the theory
  - In practice, it is rare for the agencies to challenge a horizontal merger that would not produce a unilateral effect
- Two theories of unilateral effects
  - *Recapture unilateral effects*, which depends on the merged firm being able to increase prices in one product and "recapture" a large portion of the lost marginal sales through substitution to the other merging product (assuming no price increase in the second product)
  - *Auction unilateral effects*, which depends on the merging firms being the likely number 1 and number 2 low bidders when sales are made in an auction process

We will focus only on recapture unilateral effects in these slides. We will return to auction unilateral effects in the Sysco/US Foods case study

Unilateral effects

- Some important economic concepts
  - Differentiated products
    - *Definition*: *Differentiated products* are similar but not identical, so that customers substitute imperfectly among them based on price, features, brand, or other differentiating factors
    - Examples:
      - Smartphones (iPhone, Samsung Galaxy)
      - Cola soft drinks (Coca-Cola, Pepsi, Dr Pepper)
      - Running shoes (Nike, Adidas)
      - Streaming services (Netflix, Prime Video, Hulu)
      - Toothpaste brands (Colgate, Crest)
      - Fast food (McDonald's, Burger King, Wendy's)
      - Ride-sharing apps (Uber, Lyft)
      - Cars (Toyota Camry, Honda Accord)
  - Diversion
    - *Definition*: *Diversion* is the switching of sales by marginal customers from one product to another due to a price increase in the first product
  - Diversion ratio
    - The diversion ratio from Product A to Product B is the percentage of the Product A's lost marginal unit sales that divert to Product B due to a given price increase in Product A
      - Product A's price increases by 5%. A loses a total of 100 units, 30 of which divert to Product B. The diversion ration ($D_{A \rightarrow B}$ or simply D_{AB}) is 30%.

$$D_{AB} = \frac{\Delta q_B}{\Delta q_A} = \frac{30}{100} = 0.3 \text{ or } 30\%$$

Note: The sum of the diversion ratios across all substitute products is 100%

      - *Important*: The diversion ratio is a function of the change in Product A's price. While the diversion ratio may be constant across different price changes, it does not have to be. The usual change in price used in antitrust analysis is the SSNIP used in the HMT in defining the relevant market.

Unilateral effects

- Recapture unilateral effects:
  - The mechanics
    - Premerger, each of the merging firms sets price to maximize its *individual* profits
      - If Firm 1 were to increase its price, it would lose its marginal sales and reduce its profits
    - Postmerger, the merged firm sets its prices to maximize its joint profits
      - Again, if the merged firm increased Product 1's prices, Product 1 would lose its marginal sales and reduce the profits it earns
      - BUT to the extent Product 2 "recaptures" some of Product 1's marginal sales because they now have become attractive at Product 2's (unchanged) price, Product 2 will increase its profits
    - *Bottom line*: The merged firm can increase its total profits by increasing Product 1's price if the recaptured profits in Product 2 are greater than the lost profits in Product 1
      - True even if no other firm in the markets accommodates this price increase

Unilateral effects

- Recapture unilateral effects
  - We can express this in terms of incremental profits:

$$\Delta\pi_M = \Delta\pi_1 + \Delta\pi_2$$
$$= \left[\Delta p_1\left(q_1 - \Delta q_1\right) - \$m_1\Delta q_1\right] + D_{12}\Delta q_1\$m_2$$

Incremental profit loss on Product 1

Incremental profit gain on Product 2

If $\pi_M > 0$, the price increase is profitable
If $\pi_M < 0$, the price increase is unprofitable

where D_{12} is the *diversion (recapture) ratio* from Product 1 to Product 2

- That is, D_{12} is the percentage of the marginal unit sales lost by Product 1 that is recaptured by Product 2
  - *Example*: If the price increase causes Product 1 to lose 100 units and Product 2 recaptures 40 of those units, then the diversion ratio is 40/100 = 40%
- $D_{12}\Delta q_1$ is the diversion ratio times the lost marginal unit sales of Product 1, which are the unit sales recaptured by Product 2
  - *Example*: Using the numbers above, 40% x 100 = 40

Unilateral effects

- Recapture unilateral effects: Example 1

Consider two merging companies, Koka-Kola and Depsi Cola, that sell competing soft drinks. Before the merger, each company sells its cola for $2.00 per can with a marginal cost of $1.00. After the merger, the combined firm considers raising Koka-Kola's price by $0.10 to $2.10 while keeping Depsi Cola's price unchanged at $2.00. For every 1000 cans Koka-Kola sells at the original price, it will lose 100 cans at the higher price: 30 of these lost sales would divert to Depsi Cola, while 70 would be lost entirely (either to other competitors or as foregone purchases). Does the merged firm have a profit-maximizing incentive to implement this price increase in Koka-Kola?

Data		Firm with the price increase Koka-Kola		Recapturing firm Depsi	
Price (p_1 & p_2)	$2.00 per can	**Loss on marginal sales**			
Marginal cost (c_1 & c_2)	$1.00 per can	Δq_1	100		
Dollar margin ($\$m_1$ & $\$m_2$)	$1.00 per can	$\$m_1$	$1.00		
Price increase (Δp_1)	$0.10	Gross loss	$100.00		
Quantity (q_1)	1000 cans				
Marginal sales (Δq_1)	100 cans	**Gain on inframarginal sales**		**Gain on recaptured sales**	
Diversion ratio (D_{12})	30%	$q_1 - \Delta q_1$	900	$D_{12}\Delta q_1$	30
Recapture unit sales (Δq_2)	30 cans	Δp_1	$0.10	$\$m_2$	$1.00
		Gross gain	$90.00	Gross gain	$30.00
		Net gain	-$10.00	**Net gain to merged firm**	
				$\Delta\pi_1 + \Delta\pi_2$	$20.00

Here, there is a profit gain of $20, or 1% of total profits on Product 1.

Query: Would a court consider a 1% price increase a "substantial lessening of competition?

Unilateral effects

- Recapture unilateral effects: Example 2

Two merging full-service supermarkets, GreenMart and TownGrocer, are located on opposite corners of the same intersection in the town center. Before the merger, GreenMart sells an average customer "basket" for $100 with $80 marginal cost, while TownGrocer sells an average basket for $110 and a $95 marginal cost. After the merger, the combined firm contemplates raising GreenMart's basket price by $5 to $105 while keeping TownGrocer's price at $110. For every 1,000 baskets GreenMart sells at the original price, the $5 increase is expected to reduce its sales by 250 baskets; of these lost baskets, 75 are recaptured by TownGrocer and 175 are lost to other stores in the town center or foregone. Does the merged firm have a profit-maximizing incentive to implement the contemplated price increase at GreenMart?

#NAME? Data		Firm with the price increase GreenMart		Recapturing firm TownGrocer	
Price (p_1)	$100 per baske	**Loss on marginal sales**			
Marginal cost (c_1)	$80 per baske	Δq_1	250		
Dollar margin ($\$m_1$)	$20 per baske	$\$m_1$	$20.00		
Price increase (Δp_1)	$5	Gross loss	$5,000.00		
Quantity (q_1)	1000 baskets				
Marginal sales (Δq_1)	250 baskets	**Gain on inframarginal sales**		**Gain on recaptured sales**	
		$q_1 - \Delta q_1$	750	Δq_2	75
Price (p_2)	$110 per baske	Δp_1	$5.00	$\$m_2$	$15.00
Marginal cost (c_2)	$95 per baske	Gross gain	$3,750.00	Gross gain	$1,125.00
Dollar margin ($\$m_2$)	$15 per basket				
Recapture unit sales (Δq_2)	75 baskets	**Net gain**	-$1,250.00	**Net gain to merged firm**	
				$\Delta\pi_1 + \Delta\pi_2$	-$125.00

Here, the merged firm would sustain a profit loss of $125 per1000 baskets sold if it implemented the contemplated price increase.

Query: What is going on here?

Unilateral effects

- The law
  - In practice, modern courts generally require four *necessary* (but not sufficient) elements to prove "recapture" unilateral effects:
    1. *Differentiated products*: The merging firms' products must be sufficiently differentiated—pre- or postmerger—to permit meaningful diversion between them
       - Firms with differentiated products face downward-sloping residual demand curves, so that they can increase price and lose only some, but not all, of their sales (that is, they retain their inframarginal customers)
    2. *Close substitutes*: The merging products must be close (but not necessarily the closest) substitutes
       - That is, the merging products must have a high diversion ratio from at least one merging product to the other merging product
       - It is not necessary for the diversion ratios to be high in both directions
    3. *Distant substitutes from other products*: Most rival firms' products must be poor substitutes
       - That is, the diversion ratio from the merging product whose price is expected to increase postmerger to most other substitute products should be low
       - This still allows a few products to have high diversion ratios: the merging products do not have to be uniquely close substitutes
    4. *Barriers to entry, expansion, or repositioning*: It must be difficult for rivals to offset the merged firm's price increase through timely and sufficient new entry, expansion, or repositioning
       - The merged firm must be able to increase price for at least one product without being disciplined by new competition

Unilateral effects

- For a given price increase to be profitable under the unilateral effects theory to apply, one more condition must be satisfied:

  The incremental profit gain on the sales recaptured by Product B must be greater than the incremental profit loss on the foregone marginal sales of Product A

  - In later classes, we will develop formulas to test whether this profitability condition holds

Unilateral effects

- Practical and evidentiary considerations
  - The plaintiff must show more than product differentiation—it must prove that one merging product significantly constrains the pricing of the other
  - A successful case typically includes—
    - High diversion ratios between the merging products, indicating that lost sales from a price increase in one product would mostly be recaptured internally by the merged firm by other product (assuming no increase the price of the second (recapturing) product)
      - Evidenced by internal documents, win-loss records, customer testimony, or econometric modelling showing that the merging products are particularly close competitors
    - High gross margins on the recaptured product, meaning that the recaptured sales are highly profitable postmerger
    - Economic modeling quantitatively estimating predicted postmerger price increases (which we will explore in later case studies)
  - Courts may discount:
    - Diversion spread among many rivals to the merging firms, weakening the link between the merger and price effects
    - Anecdotal or historical rivalry unless tied to enduring structural features or current market realities
  - Unlike coordinated effects, unilateral effects do not require showing any response by other firms in the market