Cumulative Class Slides (2024)

Professor Dale Collins
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Class 1 slides

Unit 1: TransDigm/Takata

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TRANSDIGM GROUP INC.

SCHROTH

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The Deal

Who was the buyer?

- TransDigmGroup Incorporated
  - Leading supplier of highly engineered airplane components
  - Delaware corporation
  - Headquarters: Cleveland, OH
  - Revenues (2016): $3.1 billion

Who was the buyer?

- TransDigm's AmSafe subsidiary
  - World's dominant supplier of restraint systems (seatbelts) used on commercial airplanes

  - Global revenues (2016): $198 million
  - Headquarters: Phoenix, AZ

Who was the seller?

- Takata Corporation
  - Global manufacturer of automotive safety systems and products for automakers worldwide
    - Also diversified into aviation systems
  - Headquartered in Japan
  - Production facilities on four continents
  - Manufacturer of the airbags subject to the massive recalls
    - U.S. recall of more than 42 million cars (Nov. 2014)
  - Bankruptcy
    - June 2017: Filed for bankruptcy protection in Japan
    - April 2018: Takata was acquired by Key Safety System

What was the seller going to sell?

- The SCHROTH passenger restraint systems business
  - Designs and manufactures proprietary, highly engineered, advanced safety systems for aviation, racing, and military ground vehicles throughout the world
  - History
    - Founded in 1946
    - Build the world's first seat-belt in 1954
    - Entered the aviation business in 1991
    - Acquired by Takata in 2012
  - Facilities in three locations
    - Arnsberg, Germany
    - Pompano Beach, Florida
    - Orlando, Florida
  - Employees: 260
  - Revenues (2016): $37 million
    - Profits: Don't know, but probably between $5 - $10 million annually

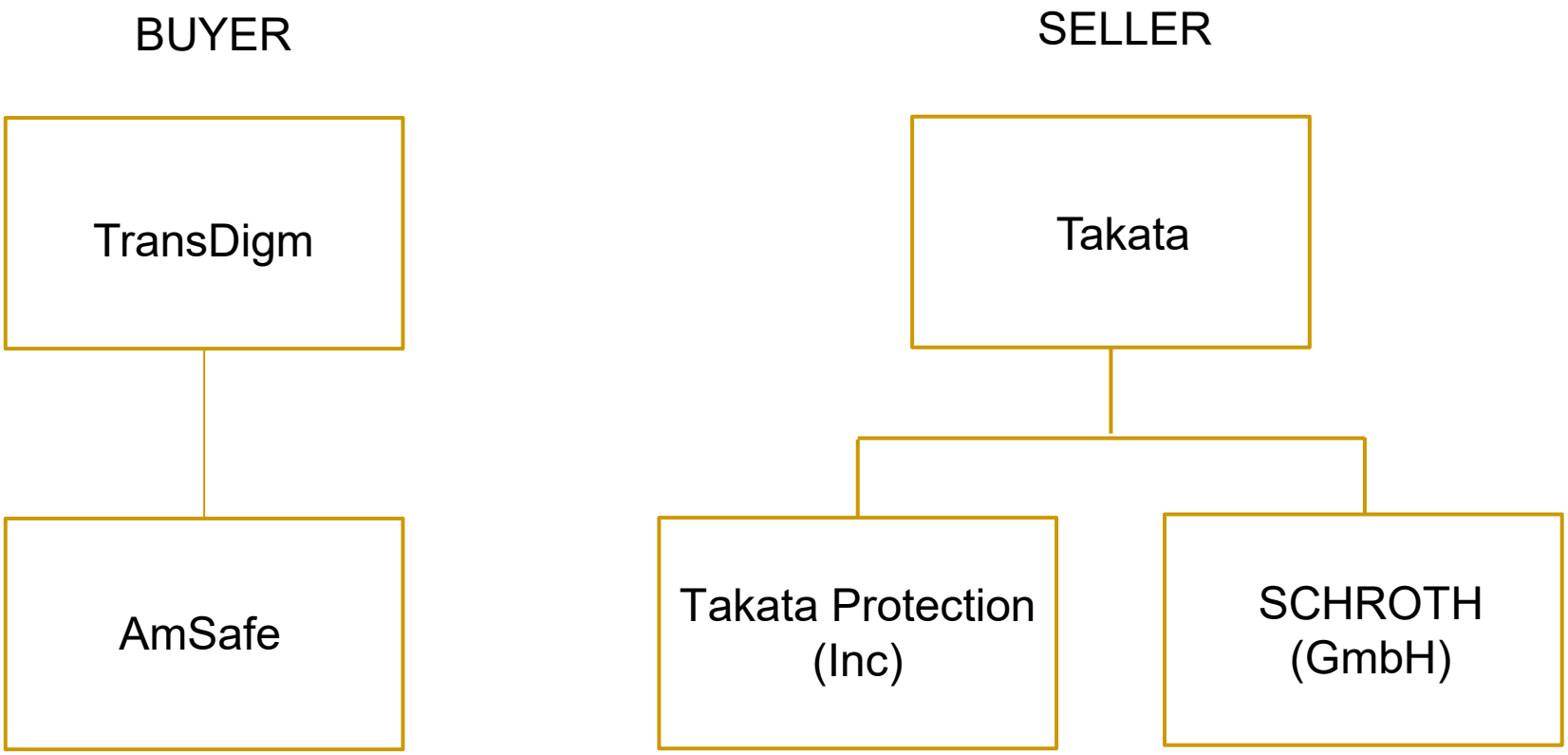
SCHROTH®
Safety Through Technology

What was the transaction?

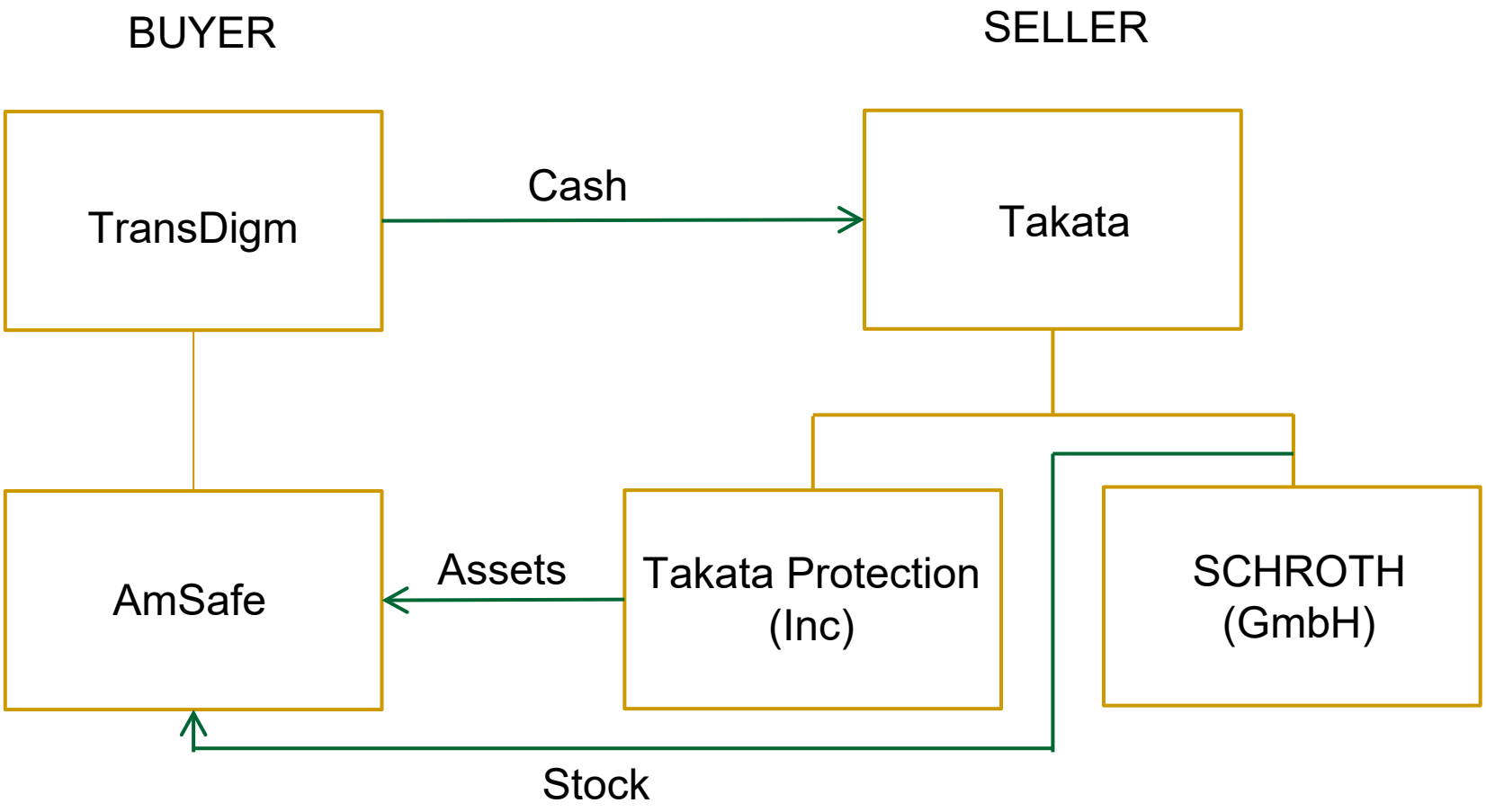
- TransDigm Group to acquire—
  1. Stock of SCHROTH Safety Products GmbH, *and*
  2. Assets of Takata Protection Systems, Inc.

  from Takata Corporation
- Purchase price: $90 million
- Transaction closed: February 22, 2017
  - Five years after being acquired by Takata

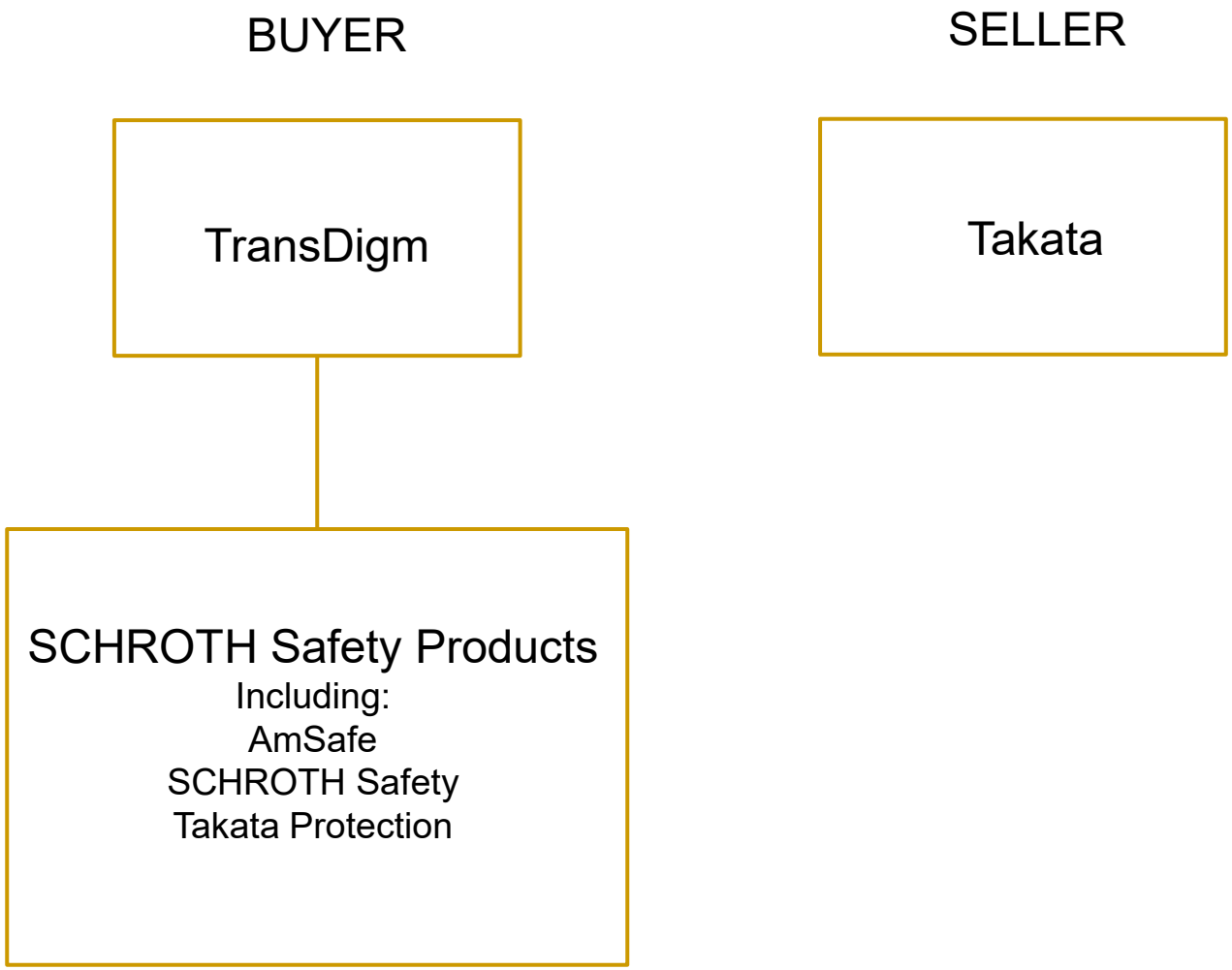
Summary of the deal structure: Before



Summary of the deal structure: Deal

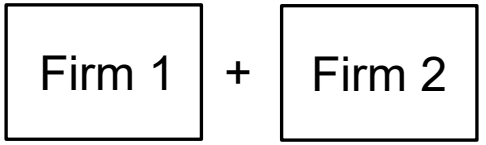


Summary of the deal structure: After

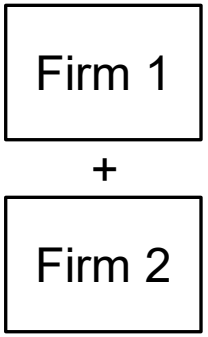


Is this a horizontal transaction?

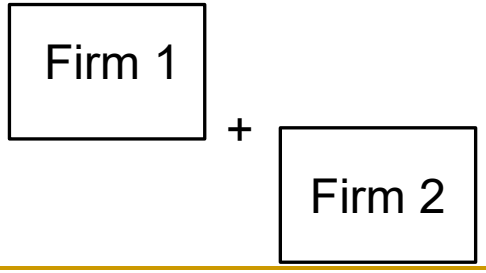
- Yes
- Horizontal transactions:
  - Combine two competitors
  - Sell *substitute* products



- Vertical transactions:
  - Combine two firms at adjacent levels in the chain of manufacture and distribution
  - May be extended to two firms that sell *complementary* products



- Conglomerate transactions
  - Mergers that are neither horizontal nor vertical



Why did Takata buy SCHROTH in 2012?

- TO MAKE MONEY
- How?
  - Conglomerate transaction
    - Saw AmSafe as essentially a monopolist
    - Only SCHROTH and one other company—both small—were in the market for restraint systems
    - Probably making significant margins
  - Takata thought it could capture more share and make more profits with SCHROTH than had SCHROTH's current owner
  - BUT Takata's strategy required some initial investment in—
    - Aggressive pricing
    - Innovation

    to gain reputation and market share

Why did TransDigm want to buy SCHROTH?

- TO MAKE MONEY
- How?
  - Horizontal transaction—would eliminate competition from an aggressive "new" competitor
    - Recall that SCHROTH, after being acquired by Takata in 2012, embarked on an ambitious plan to capture market share from TransDignm AmSafe (Compl. ¶ 3)
      - Competing on price
      - Investing in R&D
    - At the time of the signing of the acquisition agreement, SCHROTH was—
      - AmSafe's closet overall competitor
      - AmSafe's only meaningful competitor for certain types of restraint systems
    - TransDigm's strategy—
      - Eliminate Schroth's price competition and so stop competing on price
      - Eliminate innovation competition and reduce R&D costs

Why did Takata want to sell SCHROTH?

- TO MAKE MONEY
- How?
  - Purchase price more valuable than keeping the business
  - Why might that be the case?
    - SCHROTH needed to compete aggressively to attract customers from TransDigm:
      - Cost money to operate business and conduct R&D
      - Had to price aggressively
      - Probably not making much in profits
    - Had been at it for five years (Compl. ¶ 3)
    - May also have been an effort to obtain cash to stave off bankruptcy in light of the airbag litigations
      - Sale closed in February 2017, three months before Takata's bankruptcy filing

The Law

Statutes

- What federal antitrust statutes could apply to the TransDigm/SCHROTH transaction?
  - Clayton Act § 7
  - Sherman Act § 1
  - Sherman Act § 2
  - FTC Act § 5

Clayton Act § 7

- Provides the U.S. antitrust standard for mergers

> **No person** engaged in commerce or in any activity affecting commerce **shall acquire**, directly or indirectly, the whole or any part of the **stock** or other share capital and no person subject to the jurisdiction of the Federal Trade Commission shall acquire the whole or any part of the **assets** of another person engaged also in commerce or in any activity affecting commerce, **where in any line of commerce** or in any activity affecting commerce **in any section of the country**, the **effect** of such acquisition **may be substantially to lessen competition, or to tend to create a monopoly**.[1]

  - *Simple summary*: Prohibits transactions that—
    - "may substantially lessen competition or tend to create a monopoly"
    - "in any line of commerce" (product market)
    - "in any part of the country" (geographic market)

Called the *anticompetitive effects test*

Called the *relevant market*

[1] 15 U.S.C. § 18 (remainder of section omitted)

The Sherman Act

- Sherman Act § 1

> Every **contract, combination** in the form of trust or otherwise, or **conspiracy**, in **restraint of trade** or commerce among the several States, or with foreign nations, is declared to be illegal.[1]

- Sherman Act § 2

> Every person who shall **monopolize**, or **attempt to monopolize**, or **combine or conspire** with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony.[2]

[1] 15 U.S.C. § 1.
[2] *Id*. § 2.

The FTC Act

- FTC Act § 5

> **Unfair methods of competition** in or affecting commerce, and unfair or deceptive acts or practices in or affecting commerce, are hereby declared unlawful.[2]

  - NB: Unlike other provisions, not included in the definition of "antitrust law" in Clayton Act § 1
    - This will be important when it comes to private actions

[1] 15 U.S.C. § 45(a)(1).

Section 7 is the binding constraint

- The Sherman Act and FTC Act, as applied to mergers, are either coextensive or less restrictive than Section 7 of the Clayton Act

*Section 7 provides the antitrust test for all mergers**

* There is arguably an exception for acquisitions of "nascent" competitors (where Section 2 *might* be more restrictive—we will be looking for a test case)

- Consequently:
  - Invocation of the Sherman Act or the FTC Act is usually superfluous
  - Plaintiffs—including the DOJ and FTC—typically allege only a Section 7 violation
    - BUT the FTC alleges that the *signing* of the merger agreement violates Section 5
- State antitrust law
  - Not preempted by federal law
  - But no state has enacted a statute stricter than Section 7

The DOJ Investigation

Timing

- Did the DOJ investigation start before or after consummation?
  - After
    - Transaction closed Feb. 22, 2017
    - Complaint filed ten months later on December 21, 2017
- Important distinction
  - Mergers challenged after closing (postconsummation mergers)
  - Merger challenged before closing (preconsummation mergers)

Why is this distinction important?

Timing

- Why didn't the DOJ investigate and challenge the transaction before closing?
  - Probably did not know about it, *or*
  - Was aware of the transaction but not aware of its likely effect on competition
- Didn't the HSR Act filings alert the DOJ to the transaction before closing?
  - No. Apparently not reportable under the Hart-Scott-Rodino Act[1]

[1] Clayton Act § 7A, 15 U.S.C. § 18a.

Hart-Scott-Rodino Act

- Requires large mergers and acquisitions to—
  1. File a *premerger notification report* with the DOJ and FTC
  2. Observe a *statutorily prescribed waiting period* before closing the transaction
     a. *Initial waiting period*: 30 calendar days after filing (for most transactions)
     b. *Final waiting period*: 30 calendar days after all merging parties have responded to their respective second requests (for most transactions)

        NB: A *second request* is a subpoena-like document that—
        1. Contains document requests, narrative interrogatories, and data interrogatories
        2. Can only be issued during the initial waiting period
        3. Can only be issued once to each filing person
        4. Can easily take 4-8 months to respond
- Idea:
  - Much more effective and efficient to block or fix an anticompetitive deal before closing than to try to remediate it after closing

Hart-Scott-Rodino Act

- Why wasn't the TransDigm/SCHROTH transaction reported under the HSR Act?
  - The purchase price was $90 million in cash
  - The HSR threshold in 2017 was $80.8 million
    - In 2024, the threshold is $119.5 million

So the transaction is prima facie reportable

  - BUT there are exemptions—Two of which may have applied here to reduce the reportable amount to under the threshold:
    - Foreign stock exemption (for U.S. acquirers)
    - Foreign asset exemption

Hart-Scott-Rodino Act

- Not jurisdictional
- Agencies can review and challenge transactions—
  1. Falling below reporting thresholds
  2. Exempt from HSR reporting requirements
  3. "Cleared" in an HSR merger review
     - "Clearance"—a commonly used term—is a misnomer
     - No immunity attaches to a transaction that has completed an HSR merger without agency enforcement act
       - Compare a merger investigation that is settled with a consent decree
       - A consent decree is entered as a final judgment in a litigation → Claim preclusion/res judicata applies

The fact that the TransDigm/Takata deal was not HSR reportable did not preclude the DOJ from investigating and challenging the transaction even months after closing

DOJ investigation

- How did the DOJ find out about this transaction?
  - Someone probably called the FTC and complained
  - Maybe Boeing complained
    - Largest U.S. customer
    - Biggest beneficiary of SCHROTH's competition with AmSafe
    - Biggest loser from the merger

But why would Boeing wait until after the acquisition to complain?

  - Maybe it was someone else—
    - A smaller customer
    - A disgruntled current or former TransDigm employee
  - But probably not a third-party competitor (WHY NOT?)

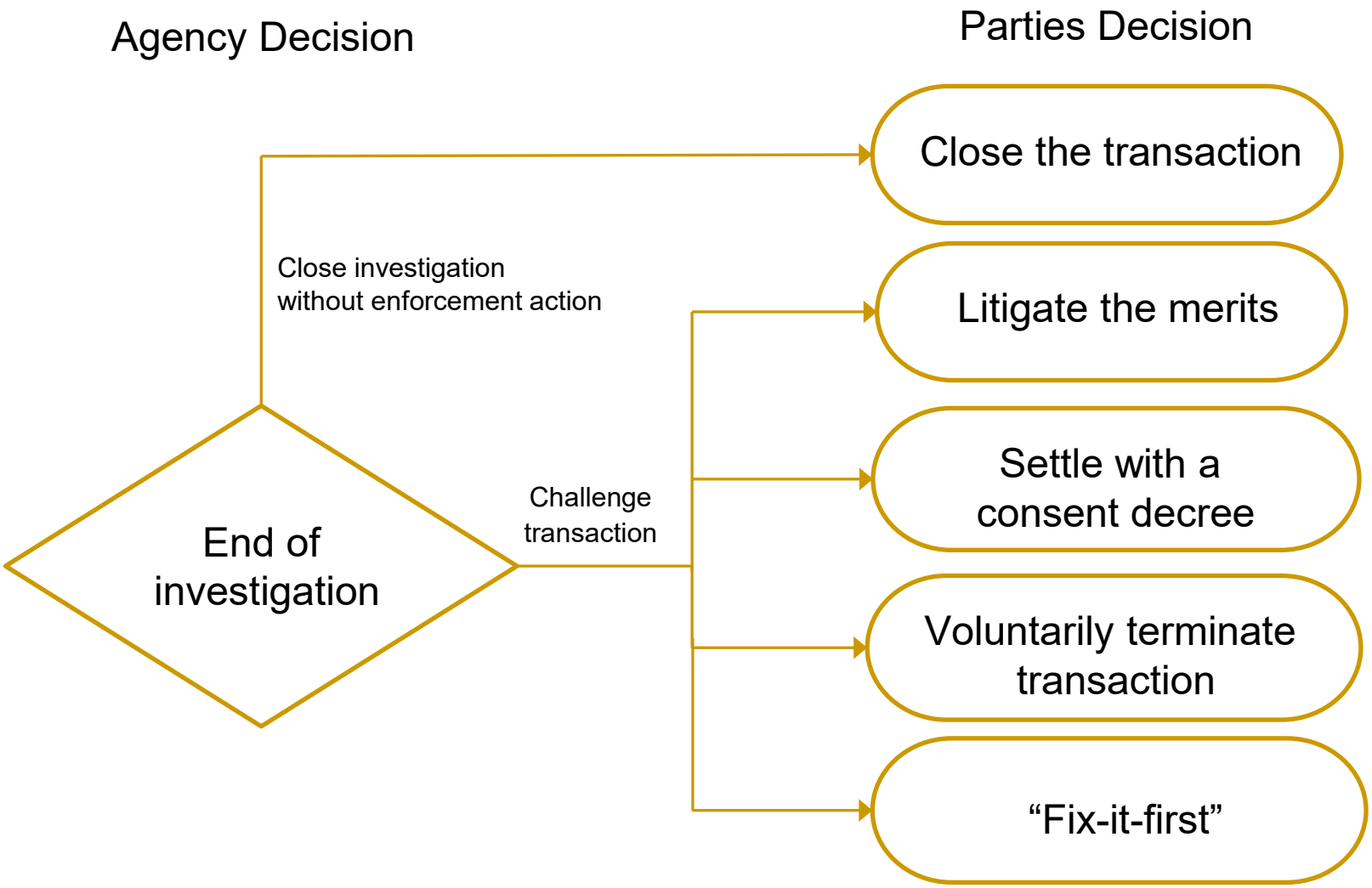
DOJ investigation

- What did the DOJ do after it learned about the transaction?
  - Opened an investigation

DOJ investigation

- How did the DOJ obtain testimony, documents, and data on which to base its antitrust analysis?
  - Typically would obtain from the parties pursuant to a *second request* under the HSR Act
    - BUT this transaction was not HSR reportable
  - But DOJ also has the power to issue *civil investigative demands* (CIDs)
    - Essentially precomplaint subpoenas
    - Can include document requests, narrative interrogatories, and data interrogatories
    - Is not quite compulsory process (i.e., not self-executing)
      - DOJ must first obtain a court order compelling compliance
    - May be issued any time during the course of an investigation
    - May be issued to both the merging parties and to third parties
    - Often ask for the same documents and data as a second request
    - Multiple CIDs may be issued in the course of an investigation to the same person

What were the possible investigation outcomes?



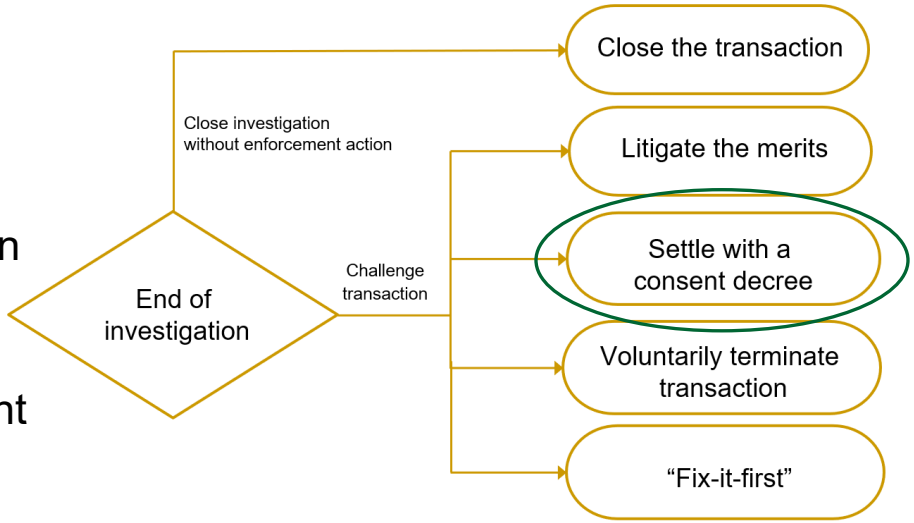
What happened here?

- What did the DOJ do?
  - Challenged transaction—
    1. Decided that TransDigm's acquisition of SCHROTH violated Section 7 of the Clayton Act, *and*
    2. Filed a complaint in federal district court seeking—
       a. a declaration that TransDigm violated Section 7 by acquiring SCHROTH, and
       b. a *permanent injunction* requiring TransDigm to divest the business and assets it had acquired from Takata

If the FTC had investigation the acquisition, the procedure would have been different

What happened here?

- What did TransDigm do?
  - Agreed to divest pursuant to a consent decree
    - A consent decree is a final judgment in a litigation that the court enters with the consent of the litigating parties rather than pursuant to a finding of a violation
    - To get the DOJ's agreement, TransDigm agreed to give the DOJ essentially the relief it sought from a litigation of the merits
      - In the past, the DOJ/FTC sometimes have been willing to settle for less than they could get from a successful litigation on the merits
      - Today, not so much



The DOJ Complaint

When was the complaint filed?

- December 21, 2017

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA
Department of Justice, Antitrust Division
450 5th Street, N.W., Suite 8700
Washington, D.C. 20530,

Plaintiff,

v.

TRANSDIGM GROUP INCORPORATED
1301 East 9th Street, Suite 3000
Cleveland, Ohio 44114,

Defendant.

Civil Action No.:

COMPLAINT

The United States of America, acting under the direction of the Attorney General of the United States, brings this civil antitrust action for equitable relief against defendant TransDigm Group Incorporated ("TransDigm") to remedy the harm to competition caused by TransDigm's acquisition of SCHROTH Safety Products GmbH and substantially all the assets of Takata Protection Systems, Inc. from Takata Corporation ("Takata"). The United States alleges as follows:

I. NATURE OF THE ACTION

1. In February 2017, TransDigm acquired SCHROTH Safety Products GmbH and substantially all the assets of Takata Protection Systems, Inc. (collectively, "SCHROTH") from Takata. TransDigm's AmSafe, Inc. ("AmSafe") subsidiary is the world's dominant supplier of restraint systems used on commercial airplanes. Prior to the acquisition, SCHROTH was

The forum

- In what court was the complaint filed?
  - United States District Court for the District of Columbia (DDC)
- Why in DDC?
  - District court had—
    - *Personal jurisdiction* over the parties, *and*
    - Was a proper *venue* for the action
  - Historically, the DDC has been the most desirable forum for litigation from the DOJ's perspective
    - They know the judges
    - As a bench, the judges are experienced and sophisticated in the application of the merger antitrust laws—and frequently found in favor of the DOJ
    - Prosecutors do not have the hassle of moving out of town in the event of a trial
  - This began changing in the Trump administration and now the Biden administration actively avoids bring antitrust cases in DDC

Why?

The defendant

- Who was the defendant in the case?
  - TransDigm
- Why wasn't Takata named as a defendant?
  - Why would it be?
    - Not necessary given the nature of the relief the DOJ was seeking (divestiture of acquired business and assets)
    - Takata would have been a necessary party only if the DOJ was seeking *recession* (unwinding) of the transaction

Other possible plaintiffs

- Who else could have brought a Section 7 challenge against the transaction?
  1. Federal Trade Commission
  2. State AGs
  3. Customers
  4. Maybe competitors
  5. Arguably suppliers

  Need some threatened or actual putative injury from the alleged anticompetitive effects of the merger (*antitrust injury*)

- Some observations
  - States and private parties may also sue under state law if a state statute so provides
  - Treble damages are available only for injuries actually sustained
    - Can occur only after the transaction has been consummated
    - Damages cannot be obtained in connection with transactions that have not closed

Section 7 violation: Essential elements

- What are the elements of a Section 7 violation?
  1. An acquisition of stock or assets
     - Includes mergers under state law
  2. Where, in a relevant market
     - Product dimension
     - Geographic dimension
  3. The effect "may be substantially to lessen competition or tend to create a monopoly"
  4. Also need Commerce Clause jurisdiction

Element 1: An "Acquisition"

- Was there an acquisition here?
  - Yes. TransDigm Group acquired—
    - *Stock* of SCHROTH Safety Products GmbH, *and*
    - *Assets* of Takata Protection Systems, Inc.

    from Takata Corporation

Element 2: Relevant markets

- What was the relevant geographic market alleged in the complaint?
  - Worldwide (Compl. ¶ 22)

Element 2: Relevant markets

- What were the relevant product markets alleged in the complaint?
  1. Two-point lapbelts used on commercial airplanes

  2. Three-point shoulder belts used on commercial airplanes

Element 2: Relevant markets

- What were the relevant product markets alleged in the complaint?
  3. Technical restraints used on commercial airplanes

  4. Inflatable restraint systems used on commercial airplanes (uses airbag technology)

Element 3: Anticompetitive Effect

- What were the anticompetitive effects of the acquisition alleged in the complaint?
  1. Increased prices
     - Prior to the acquisition, customers could and did "play off" the companies against each other to obtain better prices (Compl. ¶ 32)
     - Postmerger, the next closest competitor will not be as price-competitive with the combined firm as SCHROTH was to AmSafe
  2. Reduced innovation
     - Companies also competed against each other through R&D to develop new and better products (Compl. ¶ 32)
     - Could save significant money by curtailing R&D activities postmerger
  3. Significantly increased market concentration
     - Combined the only two significant players in the markets (Compl. ¶ 31)
     - Not really an anticompetitive effect under the prevailing consumer welfare interpretation
       - But the Supreme Court in the 1950s-1960s regarded it as the primary anticompetitive effect—included because of that precedent

Element 3: Anticompetitive Effect

- What were the factual allegations in support of an anticompetitive effect in each market?
  1. Two-point lapbelts used on commercial airlines

  - Only three competitors premerger (Compl. ¶ 24)
    1. AmSafe was by far the largest
    2. Small, privately held firm that had been in the market for years but had gained little share → little or no competitive significance
    3. SCHROTH, which entered the market with a new, innovative lightweight two-point lapbelt ("Airlite"), which it aggressively marketed to the major international airlines
  - *Competitive effects implications*:
    - When three competitors are reduced to two, the remaining competitors are more likely to engage in oligopolistic coordination, which would result in a higher equilibrium market price and reduced rates of innovation
    - If the smallest firm is ignored → "Merger to monopoly" → higher prices

Element 3: Anticompetitive Effect

- What were the factual allegations in support of an anticompetitive effect in each market?
  2. Three-point shoulder belts used on commercial airlines

  - Factual allegations
    1. Only two meaningful competitors premerger (Compl. ¶ 26)
    2. AmSafe was by far the largest
    3. "SCHROTH was aggressively seeking to grow its business at AmSafe's expense"
    4. Probably means that SCHROTH had not achieved any significant sales yet, but that efforts to penetrate the market caused AmSafe to reduce prices
  - *Competitive effects implications*: "Merger to monopoly" → higher prices

Element 3: Anticompetitive Effect

- What were the factual allegations in support of an anticompetitive effect in each market?
  3. Technical restraints used on commercial airlines

  - Only three significant suppliers premerger (Compl. ¶ 28)
    1. AmSafe ("leading supplier")
    2. SCHROTH ("aggressively seeking to grow")
    3. (Unnamed) international aerospace equipment manufacturer
  - *Competitive effects implications*:
    - "3-to-2 merger," resulting in higher equilibrium market prices

Element 3: Anticompetitive Effect

- What were the factual allegations in support of an anticompetitive effect in each market?
  4. Inflatable restraint systems used on commercial airplanes

  - Only two competitors premerger (Compl. ¶ 30)
    1. AmSafe (which developed technology—offers both inflatable lapbelts and structural mounted airbags)
    2. SCHROTH (offers only structural mounted airbags)
    3. "In recent years, SCHROTH had emerged as a strong competitor to AmSafe in the *development* of inflatable restraint technologies"
       - Only allegation of innovation competition—Not sales competition

Why did the DOJ include this claim?

Element 4: Effect on Interstate Commerce

- What were the factual allegations in support of an effect on interstate commerce?
  - "TransDigm sells restraint systems used on commercial airplanes throughout the United States. It is engaged in the regular, continuous, and substantial flow of interstate commerce, and its activities in the development, manufacture, and sale of restraint systems used on commercial airplanes have had a substantial effect upon interstate commerce." (Compl. ¶ 9)

Defenses to the prima facie case

- How, if at all, could TransDigm defend against the DOJ's prima facie case?
  - First, an important distinction: Negative/affirmative defenses
    - *Negative defense*: Negates an element of the prima facie case
      - Defendant: "The merger will not result in any anticompetitive harm"
    - *Affirmative defense*: Even assuming the plaintiff has established its prima facie case, the challenged conduct is nonetheless excused or justified
      - Defendant: "The merger will likely result in anticompetitive harm, but the merger is justified or excused for other reasons"
  - There are *no* affirmative substantive defenses in antitrust law

For the merging parties to prevail, the plaintiffs must ultimately fail to carry their burden of persuasion on one or more essential elements of a Section 7 violation

Relief

- What relief was the DOJ seeking?
  - Civil injunctive relief (see Cmpl. IX. Request for Relief)—
    - Declaration that TransDigm's acquisition of SCHROTH violated Section 7
    - Injunction ordering TransDigm to—
      1. divest all assets acquired from Takata Corporation in the challenged transaction, *and*
      2. take any further actions necessary to restore the market to the competitive position that existed prior to the acquisition
- Could the DOJ have sought other types of relief?
  - Criminal sanctions but only if challenged under Sherman Act § 1
  - Treble damages on behalf of any injured U.S. government agencies under Clayton Act § 4A

The Consent Decree

What was the consent settlement?

- TransDigm agreed to a consent decree to divest SCHROTH (including the Takata Protection assets) to a third-party divestiture buyer approved by the DOJ

What is a consent decree?

- A *consent decree* is a final judgment in a case entered by consent of the litigating parties rather than an adjudication of the merits
- Sanctions for breach
  - A consent decree is a *judicial order*
  - Enforceable through civil and criminal contempt sanctions

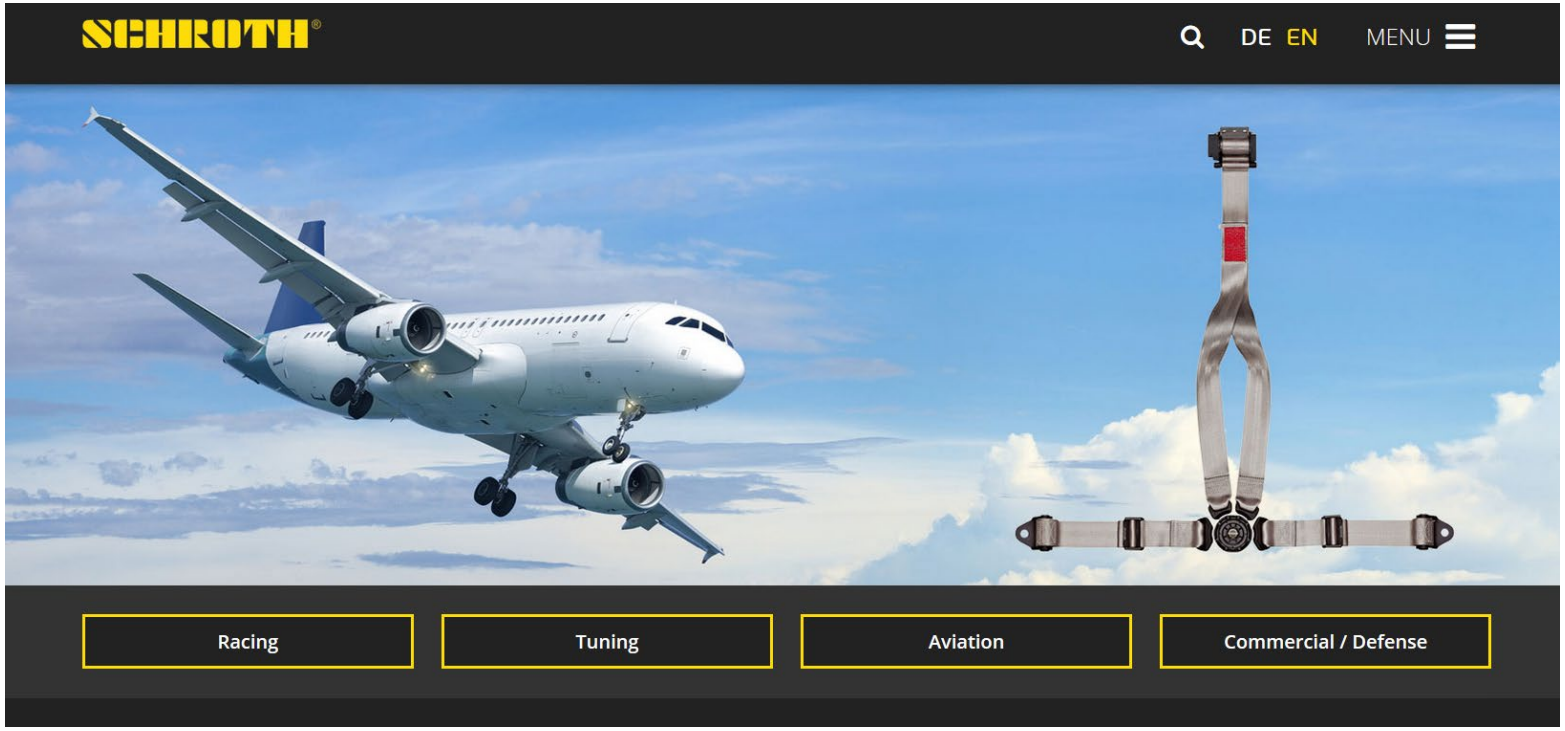
Business rationale

- Why did TransDigm agree to divest SCHROTH?
  - What were TransDigm's alternatives?
    1. Continue the litigation
    2. Settle with a consent decree acceptable to the DOJ
  - Why did TransDigm agree to settle?
    - Almost surely the least costly alternative
    - DOJ had a strong case: TransDigm was very likely to lose the litigation, and the DOJ would have obtained a litigated permanent injunction ordering the same divestiture
  - When did TransDigm agree to settle?
    - In the course of the investigation—Prior to litigation
    - Complaint and proposed consent decree were filed simultaneously with the court

The divestiture buyer

- To whom did TransDigm sell SCHROTH?
  - A management buyout (MBO)
    - Business unit's management + a private equity investor (Perusa GmbH)
  - Why sell to management?
    - The DOJ probably wanted a "buyer upfront"
    - An MBO was probably both—
      - The quickest solution, *and*
      - Offered the greatest return
  - Did the MBO get a good purchase price?
    - Almost certainly
    - Consent decree solutions almost always involve a "fire sale" of the divestiture assets
      - TransDigm 10-K reported a $32 million impairment charge to write down the assets to fair value. (p. 21)
      - TransDigm paid $90 million to acquire SCHROTH
      - So it is likely the MBO paid only about $58 million for the business
        - Actually, $61.4 million (from TransDigm 8-K, Jan. 26, 2018, at 3)

SCHROTH today



- Reportedly:
  - Approximately 250 employees
  - Sales volume around $51.2 million

CLASS 2 SLIDES

Unit 2. Predicting Antitrust Enforcement Challenges

Professor Dale Collins
Merger Antitrust Law
Georgetown University Law Center

August 29, 2024

Thinking Systematically about Antitrust Risk

The setup

- You are counsel to TransDigm
  - Prior to signing the purchase agreement, TransDigm's management seeks your advice on—
    1. Whether the antitrust authorities will investigate the transaction?
    2. Whether the DOJ or FTC will challenge the transaction on the merits?
    3. Whether the merging parties can successfully defend on the merits?
    4. If unsuccessful, what will be the consequences?

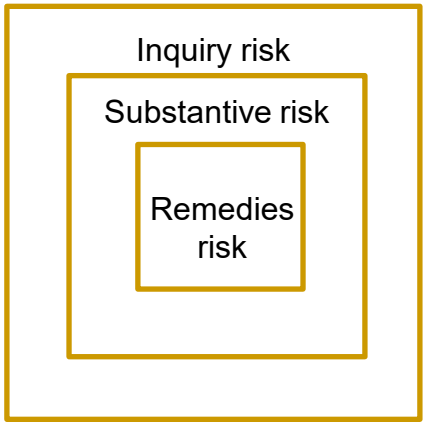
These are the fundamental questions every client asks at the beginning of a deal

These are questions about antitrust risk. How can we best explain to a client what is the antitrust risk in a deal?

Three types of antitrust risks

1. Inquiry risk
   - The risk that legality of the transaction will be put in issue
2. Substantive risk
   - The risk that the transaction is anticompetitive and hence unlawful
3. Remedies risk
   - The risk that the transaction will be blocked or restructured

Risks are nested



Assessing Substantive Risk

Focus first on substantive risk

- Inquiry risk comes first chronologically in a deal
  - Inquiry risk depends largely on—
    1. The *likelihood* that the challenger will prevail,
    2. The *reward* that the challenger will obtain from a successful challenge, *and*
    3. The *costs* to the challenger of raising the challenge

    all compared to doing nothing

In other words, inquiry risk depends on the expected value *to the challenger of raising the antitrust question*

- The first factor is a function of the substantive risk—so we need to study that first

Substantive risk

- Definition
  - The risk of being unable to successfully defend the transaction on the merits
- Can be defined in relation to either—
  - The outcome of a DOJ/FTC merger investigation, *or*
  - The outcome of litigation on the merits

Substantive risk: Costs

- There are costs associated with substantive risk incurred in defending a transaction regardless of the outcome—
  1. Delay/opportunity costs
  2. Management distraction costs
  3. Expense of investigation/litigation and other out-of-pocket costs
- But there is no reputational cost
  - Everyone views merger antitrust reviews as *regulatory*
  - *Not* as an indication that the merging parties may be breaking the law
    - Compare with an effort to engage in horizontal price fixing

Assessing probabilities of substantive risk

- Substantive risk depends on a *prediction* on whether the parties will be able to successfully defend their transaction on the merits

So how do we make that prediction?

First, an important distinction

- Basic distinction #1
  - *Decision making*: How the agencies/courts ***decide*** a merger is anticompetitive
  - *Explanation*: How the agencies/courts ***explain*** why they believe that the merger is anticompetitive
- Why is this distinction important?
  - How the agencies/courts explain their decisions often does not reveal *why* they decided on that particular outcome
  - What you read in judicial opinions may only be the justification of an outcome that the judge reached for other (unrevealed) reasons

A fundamental task in effective advocacy is recognizing this distinction and making your argument appeal simultaneously to the "heart" as well as the "mind" of the decision-maker

Overview: Theories of anticompetitive harm

- "Conventional" theories of anticompetitive harm
  1. Elimination of horizontal competition in output/downstream/seller markets
  2. Elimination of potential competition
     a. Actual potential competition
     b. Perceived potential competition (essentially a dormant theory)
  3. Vertical harm
     a. Input foreclosure
     b. Output foreclosure

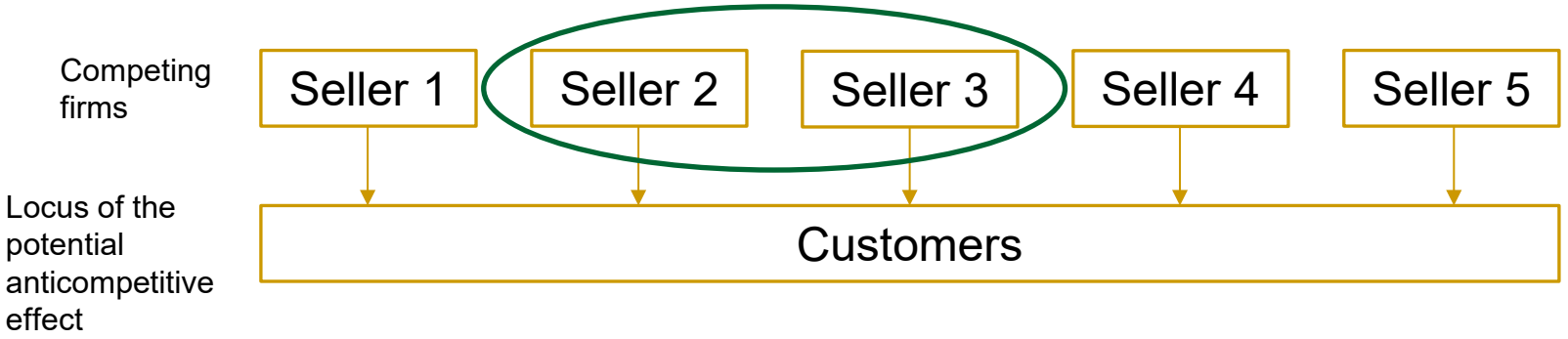
     } Generalized in "raising costs to rivals" (RRC)

     c. Anticompetitive information conduit
- "New" theories of anticompetitive harm being tested
  1. Elimination of horizontal competition in input/upstream/buyer markets
  2. Dominant firm entrenchment
     a. Elimination of nascent competition (an extension of actual potential competition)
     b. Modern entrenchment of a dominant firm

See the Appendix for a little more detail

Overview: Theories of anticompetitive harm

- The vast bulk of challenges involve the *elimination of horizontal competition in output/downstream/seller markets*



  - In this example, Sellers 1 and 2 merge
    - Reduces the number of firms competing against each other in the sale of products from five to four (a "5-to-4 merger")
  - *Potential anticompetitive effect:* Will the decrease in the number of independent firms in the market reduce competition in the downstream market (e.g., by increasing prices to customers)?

The vast bulk of merger antitrust challenges involve horizontal mergers. This class—and most of the course—will focus on this type of merger.

A predictive model for horizontal mergers

- We are going to look at a model that *predicts* merger antitrust outcomes for horizontal mergers in downstream markets
  - We will tweak the model as necessary to account for any Biden DOJ or FTC challenges that depart from modern historical practice
- The model does *not purport to describe* how the investigating agency in fact decides merger outcomes
- The model's only purpose is to predict enforcement outcomes, not to describe the agency's decision-making process

Assessing substantive antitrust risk

- So how do the DOJ/FTC decide whether a merger is anticompetitive?
  - The purpose of merger antitrust law under the *consumer welfare standard* is to prevent harm to customers in the market through—
    - Increased prices
    - Reduced market output
    - Reduced product or service quality
    - Reduced rate of technological innovation or product improvement
    - [Maybe] reduced product variety

*Under the consumer welfare standard, modern antitrust law looks to effects on customers**

** Under an "expanded" consumer welfare theory, antitrust law also looks at effects on suppliers and labor (i.e., anticompetitive effects in upstream markets).*

Assessing substantive antitrust risk

- The predictive model—Four important rules
  1. Absent compelling evidence of significant customer harm on other dimensions, only ***price increases*** count
  2. The merger is anticompetitive if it is likely to result in a price increase or other competitive harm to ***any identifiable customer group***
  3. The agencies believe that ***no customer group is too small*** to deserve antitrust protection
  4. *Corollary*: ***No deal is too small*** not to be challenged

The predictive model for horizontal mergers

Reduction in Bidders/Competitors*

5 → 4	Usually clears if no bad documents and no material customer complaints
4 → 3	Usually challenged unless there are no bad documents and there is a strong procompetitive business rationale, some customer support, *and* minimal customer complaints
3 → 2	Almost always challenged unless there are no bad documents, and there is a compelling business rational that is strongly supported by customers and no material customer complaints
2 → 1	Always challenged

* Critically, these must be ***meaningful*** and ***effective alternatives*** from the perspective of the customer; "fringe" firms that customers do not regard as feasible alternatives do not count

Historical note: Up until 2015, 5 → 4 deals almost always cleared without any review and the chart would be compressed to begin at 4 → 3

Prediction: In the Biden administration, it is likely we will see an attempt to further tighten the standards to begin at 6 → 5 (with 3 → 2 always being challenged)—BUT we have not seen this yet in practice

The predictive model for horizontal mergers

- Special cases inviting challenge
  1. Unilateral effects: Elimination of "local" competition
     - Two firms that compete very closely with one another but much less with other firms in the market
     - Often occurs with premium brands (think BMW and Mercedes Benz in an automobile market)
  2. Acquisition of a "maverick"
     - Elimination by an established firm of a typically smaller competitor that has been especially disruptive in the marketplace to the benefit of consumers
  3. Acquisition of an actual potential entrant
     - In a highly concentrated market, the acquisition by or of a firm that otherwise likely would have entered the market in the near future and thereby increased competition
  4. Acquisition of a "nascent competitor"
     - The acquisition by an entrenched "superfirm" (think Facebook) of a firm that has technology that objectively might be used by the seller or a third party in the future to compete against the buyer, whether or not anyone has a present intention of competing with the acquiring firm with the technology (think Facebook acquiring Instagram and WhatsApp)—Challenges, but no judicial decisions

New theory

The predictive model for horizontal mergers

- Special cases inviting challenge

"New" theory

5. Modern entrenchment of a dominant firm
   - Entrenchment is a "conglomerate" merger theory, that is, a theory applying to transactions that are neither presently nor in the foreseeable future horizontal nor vertical
   - The idea is that somehow the combination of the products of the merging firms will "entrench" the dominant positions of the some of the products of the merging firms

     Entrenchment emerged as a theory of merger antitrust in the 1960s. It never gained any meaningful transaction at the time. The courts almost surely will reject the theory today.

   - The Biden FTC used the entrenchment theory in its complaint challenging Amgen's proposed acquisition of Horizon Therapeutics[1]
     - (Presumably) fearing the rejection of the theory by the court in the preliminary injunction proceeding, the FTC settled before the PI hearing

[1] *See* Complaint for a Temporary Restraining Order and Preliminary Injunction Pursuant to Section 13(b) of the Federal Trade Commission Act, FTC v. Amgen Inc., No. 23-CV-3053 (N.D. Ill. filed May 16, 2023).

The predictive model for horizontal mergers

- Special cases inviting challenge
  6. Any acquisition involving a dominant high-tech firm

Basic structural tests for horizontal mergers

- The chances of successfully defending a deal improve if—
  - There are demonstrable offsetting powerful forces that constrain price increases or other anticompetitive behavior beyond the mere number of incumbent competitors

Basic structural tests for horizontal mergers

- Three major offsetting forces:
  1. *Entry, repositioning, or output expansion* by third-party competitors in response to anticompetitive behavior by the combined company
     - Requires low barriers to entry or repositioning
     - One or more companies must have the incentive and ability to enter, reposition, or expand sufficiently to maintain the premerger level of competition
  2. *Powerful customers*, who can use their bargaining leverage to stop the combined firm from acting anticompetitively
     - Requires a detailed explanation of how the bargaining will work to constrain the combined firm
     - Defense only works firm-by-firm—the merger can still harm small firms that do not have the requisite bargaining power to protect themselves
  3. *Efficiencies*, where the procompetitive pressure of the efficiencies outweighs the anticompetitive pressure of the increased market power
     - Agencies are very skeptical about efficiencies
     - More on this below

Basic structural tests for horizontal mergers

- Defenses
  - These offsetting forces are *legal defenses* if they are sufficient in likelihood and magnitude to offset the likely customer-harming aspects of the transaction
    - More technically, to negate any reasonable probability that the acquisition will substantially lessen competition
  - Basic distinction #2
    - *Negative defense*: The merger is not anticompetitive in the first instance
    - *Affirmative defense*: Even if the merger is anticompetitive, it is nonetheless not unlawful
  - Technically—
    - A *negative defense* denies an element of the plaintiff's prima facie case
    - An *affirmative defense*
      - accepts the elements of the prima facie case as true, *but*
      - raises matters outside of the prima facie case that provide a justification or an excuse to absolve the defendant from liability

There are no affirmative defenses in modern antitrust law

Another basic distinction

- Basic distinction #3: Truth v. evidence
  - The agencies (and the courts) deal in ***evidence***
  - Having the ***truth*** but being unable to prove it will not win the day
    - True for the merging parties in a merger investigation
    - True for both parties in court
  - The investigating staff also needs evidence to be able to make its case to the agency decision makers and, if necessary, in litigation

So what are the sources of evidence?

Major sources of evidence

1. Company documents submitted with the original HSR filing
2. Company responses to second requests in an HSR Act review
   - Ordinary course of business documents
   - Responses to data and narrative interrogatories
3. Interviews/testimony/public statements of merging firm representatives
4. Interviews with knowledgeable customers
5. Interviews with competitors
6. Customer responses in staff interviews and to DOJ Civil Investigative Demands (CIDs) or FTC precomplaint subpoenas
7. Analysis of bidding or "win-loss" data
   - Including the ability of customers to play the merging firms off one another
8. "Natural" experiments
9. Expert economic analysis

Homework Assignment for Class 2

The problem

The general counsel of TransDigm has asked you to begin a merger antitrust analysis of an acquisition by TransDigm of SCHROTH from Takata. The GC wants to start with a “quick and dirty” view of the problems that might arise in the United States. To this end, the GC will try to find the answers within the company to up to six questions. What six questions would you like to ask?

Instructor's answer

1. Business rationale
   - What is TransDigm's business rationale for making the acquisition (i.e., how will TransDigm make money by acquiring SCHROTH)?
2. Customer benefits
   - How, if at all, will customers benefit from the transaction?
3. Complaints
   - Who, if anyone, is likely to complain about the transaction and, if so, what will they say? (Especially interested in customer reactions)
4. Power to harm customers
   - If someone (say a sophisticated customer) was hostile to the deal, how would it argue that the merger will give TransDigm the ability and incentive to raise prices, reduce product or service quality, reduce investment in innovation or product improvement, or cut off supplies to competitors?

Instructor's answer

5. Competitive overlaps
   - In what product lines do TransDigm and SCHROTH compete against each other in the United States?
6. Other competitors
   - In each overlapping product line, are there significant other competitors to whom customers can turn to protect themselves in the event that TransDigm increases its price, reduces its product or service quality, or reduces investment in innovation or product improvement following the acquisition?

Questions from homework submissions

1. What are the relevant markets that will be affected by this acquisition?
2. How would you define the market (products/services and geography) for your products?
3. Will this acquisition substantially decrease competition in the relevant markets?
4. How big a player is TransDigm within the market?
5. For each product TransDigm produces, please provide the names of all competitors and their respective market shares.

Questions from homework submissions

6. Will consumers be harmed by this acquisition by an increase in prices?
7. Do customers “play off” TransDigm and SCHROTH against each other to get better prices?
8. What would TransDigm’s new market share in an already highly concentrated market be after the acquisition?
9. Would the acquisition decrease innovation of future technologies, or would TransDigm remain motivated to innovate?

Questions from homework submissions

10. Will consumers benefit from or be harmed by differences in product quality after the acquisition?
11. Has TransDigm received any customer complaints about the transaction?
12. What documents do the merging parties have that might reveal the intent of the transaction?
13. Does TransDigm have any documents, or has it made any public statements, suggesting that postmerger it will raise prices, reduce production, or decrease R&D investment?

Appendix

Overview: Theories of anticompetitive harm

- "Conventional" theories of anticompetitive harm
  1. Elimination of horizontal competition in output/downstream/seller markets
     - Where competing sellers merge to the harm of customers
     - The vast bulk of merger antitrust challenges invoke this theory
  2. Elimination of potential competition
     a. Actual potential competition:
        - Where the merger involves one of the few firms (the actual potential entrant) that likely would have entered the market in the near future but for the merger and whose entry would have substantially increased competition in the market
        - The idea is that, on a going-forward basis, the market would be more competitive without the merger than with it
     b. Perceived potential competition (essentially a dormant theory)
        - Where the merger involves one of a few firms (the perceived potential entrant) that incumbent firms in the market perceive is on the verge of entering the market and whose presence causes the incumbent firms in the market to act more competitively than they would in the absence of the perceived potential entrant

Overview: Theories of anticompetitive harm

- "Conventional" theories of anticompetitive harm
  3. Vertical harm
     a. Input foreclosure
        - Where the merger involves a firm and a supplier, and postmerger the combined firm can competitively disadvantage its downstream rivals by refusing to sell (foreclose) them supplies or raising their supply prices[1]
     b. Output foreclosure
        - Where the merger involves a firm and a customer/distributor, and postmerger the combined firm can competitively disadvantage its upstream rivals by refusing to buy or distribute their products or paying less than competitive prices
     c. Anticompetitive information conduits
        - Where the merger involves a firm (usually a downstream firm) that deals with the other merging firm's rivals and obtains sensitive information from them that postmerger the combined firm can use to competitively disadvantage those rivals and reduce competition in the market

Overview: Theories of anticompetitive harm

- "New" theories of anticompetitive harm being tested
  1. Elimination of horizontal competition in input/upstream/buyer markets
     - Where competing buyers merge to the harm of suppliers (including labor)
     - Invoked on occasion in the past (usually in agricultural markets)
     - A major focus for the Biden administration (especially for anticompetitive effects in labor markets)
     - *Test case*: United States v. Bertelsmann SE & Co. KGaA, No. 1:21-cv-02886 (D.D.C. filed Nov. 2, 2021)
       - Alleges a merger between two major book publishers violates Section 7 because it is likely to reduce the advances paid to authors
       - Tried in August 2022—decision expected in the fall

Overview: Theories of anticompetitive harm

- "New" theories of anticompetitive harm being tested
  2. Dominant firm entrenchment
     a. Elimination of nascent competition
        - Entrenched dominant firms should not e allowed to acquire firms or assets that, absent the acquisition, could potentially be used by the seller or a third party to undermine the entrenched firm's dominant position
          - Usually involves the acquisition of a new product or a new technology
          - The idea: An entrenched dominant firm should be prohibited from acquiring any firms or assets with the potential—even if the probability is low—of undermining the firm's dominant position
        - Introduced in the Trump administration
        - *Test cases*:
          - FTC v. Facebook, Inc., No. CV 20-3590 (JEB) (D.D.C. filed Dec. 9, 2020) (challenging Facebook's acquisitions of WhatsApp and Instagram) (trial to be held in 2024)
          - United States v. Visa, No. 3:20-cv-07810 (N.D. Cal. filed Nov. 5, 2020) (challenging Visa's proposed acquisition of Plaid Inc.) (transaction abandoned)

Overview: Theories of anticompetitive harm

- "New" theories of anticompetitive harm being tested
  2. Dominant firm entrenchment
     b. Modern entrenchment
        - Entrenched dominant firms should not be allowed to acquire firms or assets that could further entrench them
        - *Test case*: FTC v. Amgen Inc., No. 23-CV-3053 (N.D. Ill. filed May 16, 2023)
          - The FTC alleges that the deal would allow Amgen to leverage its portfolio of blockbuster drugs to entrench the monopoly positions of Horizon medications used to treat two serious conditions, thyroid eye disease and chronic refractory gout
          - The FTC alleges that Amgen to use rebates on its existing blockbuster drugs to pressure insurance companies and pharmacy benefit managers (PBMs) into favoring Horizon's two monopoly products, thereby reducing demand for alternative drugs and reducing the incentives of other drug companies to develop them.
        - *Note*: The FTC filed an earlier case, FTC v. Meta Platforms, Inc., No. 3:22-cv-04325 (N.D. Cal. filed July 27, 2022), that alleged a modern entrenchment theory, but the FTC amended the complaint to drop the entrenchment claim
          - The FTC proceeded solely on an actual potential competition claim and lost in the district court. The case in now on appeal to the Ninth Circuit

CLASS 3A SLIDES

Unit 2. Predicting Antitrust Enforcement Challenges

The First Client Meeting

Professor Dale Collins
Merger Antitrust Law
Georgetown University Law Center

September 2, 2024

Setup

It is September 2016. Nicholas Howley, the CEO of TransDigm, is considering making an acquisition of the SCHROTH commercial airlines safety restraint business. He is asking you for a preliminary antitrust risk analysis of this deal. You know no facts, but Mr. Howley is happy to answer your questions at the meeting. He is also skeptical that the deal presents any material antitrust risk.

Before the meeting: Learn what you can

1. Look at the websites of both companies
   - Learn about their businesses
   - Try to determine whether there are any product overlaps
2. Search the Internet and newspaper archives using "TransDigm and SCHROTH" as the search request

Assume that you find from this research that—

- *The deal involves a horizontal overlap in safety restraints for commercial airlines*
- *TransDigm is the dominant firm in the business*
- *SCHROTH is a new entrant with a small share*
- *There are few if any other firms in the business*

But no other meaningful information

Aside: Some notes on privilege

- Attorney-client privilege
  - *Rule*: The attorney-client privilege applies to—
    1. A communication
       - Includes verbal exchanges, written correspondence, emails, or any other form of communication
       - The communication may be from the lawyer to the client, from the client to the lawyer, or both
    2. Between an attorney and a client
       - May also encompass agents of either who help facilitate the legal representation
    3. Made in confidence
       - That is, there is an expectation of privacy at the time of the communication, and the communication is not intended to be disclosed to third parties
    4. For the purpose of seeking, obtaining, or providing legal assistance
       - Includes communications from the client containing responses to questions posed by the lawyer

Aside: Some notes on privilege

- Attorney-client privilege
  - *Rule*: The violation of any of these four elements negates the privilege and subjects the communication to discovery
  - *Rule*: The attorney-client privilege shields *communications* from discovery; it does not shield *facts*
    - *Exception*: Facts learned from an attorney through an attorney-client communication
      - Disclosing the facts necessarily discloses the content of the privileged communication

Aside: Some notes on privilege

- The work product doctrine
  - *Ordinary work product*:[1] A party may not discover—
    1. documents and tangible things
    2. that are prepared in anticipation of litigation or for trial
    3. by or for another party or its representative
    4. UNLESS the party shows that it—
       a. has substantial need for the materials to prepare its case and
       b. cannot, without undue hardship, obtain their substantial equivalent by other means

[1] Fed. R. Civ. P. 23(b)(3)(A). Rule 23(b)(3)(A) encapsulates the federal ordinary work product doctrine.

Aside: Some notes on privilege

- The work product doctrine
  - *Attorney opinion work product*:[1] The exception does not apply to materials that disclose "the mental impressions, conclusions, opinions, or legal theories of a party's attorney or other representative concerning the litigation"
    - NB: If only a portion of otherwise discoverable material contains attorney opinion work product, the protected attorney opinion work product should be redacted and the rest of the material produced

[1] Fed. R. Civ. P. 23(b)(3)(B).

Aside: Some notes on privilege

- The work product doctrine
  - *Rule*: Although the work product doctrine applies only to documents and tangible things, the protection cannot be pierced by inquiring into the content of a protected document[1]
    - Facts discovered in the course of an investigation by an attorney or her agent are at most ordinary work product and subject to discovery only upon a proper showing of hardship

[1] *See, e.g.,* Order re Petition to Limit or Quash Subpoenas Ad Testificandum Dated April 24, 2009, File No. 091-0064 (July 21, 2009) (in the FTC's investigation of Thoratec Corp.'s pending acquisition of HeartWare International).

Aside: Some notes on privilege

- The work product doctrine
  - Public policy behind the work product doctrine
    - *Promote adversarial litigation*: Allows attorneys to prepare for litigation without fear that their strategy, theories, mental impressions, or research will be exposed to their adversaries
    - *Preserves the integrity of the legal process*: Ensuring that attorneys can candidly evaluate and prepare their cases without concern that their work will be revealed
    - *Prevents unfair advantage*: Avoids situations where one party can free-ride off the investigatory and preparatory work of another attorney
  - Work product in investigations
    - Although the work product doctrines do not automatically apply to all investigations, they do apply if the investigation provides reasonable grounds for anticipating litigation
    - *The practice*: Almost all merger investigations by the FTC or DOJ provide reasonable grounds for anticipating litigation and hence triggering work product protections

Aside: Some notes on privilege

- The problem
  - Merging parties would like to share and coordinate their initial analysis and defense of the transaction
  - BUT ordinarily doing so would violate the attorney-client confidentiality requirement, negate any attorney-client privilege, and subject the communications to discovery by a second request, CID, or subpoena in an agency investigation or litigation

The solution: *The "common interest" privilege provides an exception to the confidentiality requirement and retains the attorney-client privilege for communications among parties with a common legal interest*

Aside: Some notes on privilege

- The "common interest" privilege
  - *Rule*: When the communication involves—
    - The sharing of privileged information
    - Among parties with a common legal interest

    the communication remains protected by the attorney-client privilege
  - *Rule*: Apart from this exception, all parties must continue to satisfy the elements of the attorney-client privilege for shared communications to preserve the privilege
  - *History*:
    - The common interest privilege originated as the "joint defense" privilege
    - But the courts expanded it to include communications outside of the context of litigation

Aside: Some notes on privilege

- The “common interest” privilege
  - *Agency practice*: Recognizes communications among merging parties to share and coordinate their analysis and defense of the transaction, including the sharing of--
    - Antitrust *analyses* of the transaction in the course of negotiations
    - Antitrust analyses of the transaction during the investigation
    - Strategies to defend the transaction generally
    - Strategies to settle the investigation of the transaction through a consent decree or “fix it first” restructuring

Aside: Some notes on privilege

- The "common interest" privilege
  - *Query*: Do differences in commercial objectives defeat the common interest privilege in negotiating risk-shifting provisions (e.g., the cap on a divestiture commitment)?
    - Although both parties share the common legal interest in defending the transaction against an antitrust challenge—
      - The seller wants the deal to close regardless of the cost to the buyer of any divestiture, while
      - The buyer wants the deal to close if and only if the costs of divestiture are not so high that they destroy the attractiveness of the transaction
    - As far as I am aware, this situation has not been addressed by a court
  - *Practice hint*:
    - The parties should frame their negotiations to be over what risk-shifting provisions are reasonably necessary to defend the merger and avoid discussing any business reasons for a divergence in views
    - This makes the discussions—that is, the putatively protected communications—to be about differences in the proper approach to the legal strategy, not commercial differences

Goals of the meeting

1. *Teach* the client the operational test for Section 7 illegality
2. *Ask* the client the most important factual questions
3. *Communicate* your view of the antitrust risk in a way that the client understands
4. *Provide* any strategic advice as to how the client might minimize antitrust risk

We will go through each goal in detail

Teach the client the operational test

- Important to begin the meeting with the operational test
  1. Unless the client understands the test, they will not be persuaded by your advice
     - The client will not be persuaded unless they can replicate your analysis and reproduce your conclusion
  2. If the client understands the test, they are more likely to give complete and meaningful answers your factual questions
  3. If the client knows the test, they can continue to think after they leave the meeting about what other facts may be relevant and follow up with you to sharpen the risk analysis
  4. The client *needs* to know the operational test as they move forward with the transaction to understand the antitrust implications of—
     - What they write in their documents
     - What they say to the press and to customers
     - What they say in meetings with the investigating agency

Teach the client the operational test

- Start with Clayton Act § 7
  - Governing merger antitrust statute
  - Other statutes may apply, but they will not be more restrictive than Section 7
  - Section 7 prohibits transactions that "may substantially lessen competition"
- But what does this mean *operationally*?
  - A transaction "may substantially lessen competition" when it is likely to harm an identifiable group of customers by—
    1. Increasing prices
    2. Reducing market output
    3. Reducing product or service quality
    4. Reducing the rate of technological innovation or product improvement
    5. [Maybe] reducing product variety

Clients can grasp the operational test immediately

Teach the client the operational test

- Tell the client how the investigating agency is going to find the facts about the likely competitive effect
  - HSR reportability and merger review process
    - Time to ask questions to find out if the deal is likely to be reportable
  - The investigating agency will—
    1. Entertain a presentation from the parties on the deal
    2. Interview—and perhaps later depose under oath—you and other relevant employees in both companies
    3. Obtain massive amounts of the documents and data from both companies
    4. Interview customers and competitors (and maybe obtain documents and data from them)
    5. Analyze win-loss records of the companies in bidding for projects
    6. Use economists to assist in analyzing the likely competitive effects of the transaction

Teach the client the operational test

- Bottom line
  - The agency's conclusion on the likely effect on customers will determine the outcome of the investigation
    - NB: Having the truth on the merger's side will not necessarily win the day
    - It is the *agency's conclusion*, not necessarily the truth, that counts
  - The best defense is a good offense
    - Can we argue that the deal is a "win-win" for the merging parties *and* the customers?
    - Companies do not do deals out of the goodness of their heart—*they do deals to make money*
    - Do we have a story consistent with the business model for the transaction, the documents and other company evidence, and the likely customer responses in staff interviews that the deal will be good for customers?

Best story*: The transaction will enable the combined company to make money by reducing costs and by making better products faster to the benefit of our shareholders and our customers*

Ask the client questions

1. What is the deal rationale?
   - How will TransDigm make money from the transaction?
   - Are there any documents on the business rationale?
     - If so, what do they say? Do they support the business rationale? Or refute it?
   - What are the implications of the business model for customers?
2. What will the company documents say about competition between the two companies?
3. Who are the customers and what will they say to the agency when interviewed?
4. Do we have a sales pitch that we can give the customers that the deal will be good for them?
   - Will they accept it?

Communicate the antitrust risk

- *Answer the client's question*: Based on what you learned in the meeting, what is the antitrust risk presented by the deal?
  - It is not sufficient for you to form a view as to the antitrust risk
  - You must meaningfully communicate the nature of this risk to the client so that the client can make informed business decisions
    - If the client does not understand your advice, they cannot act on it
    - If the client is not persuaded that your advice is correct, they will not act on it
- Best explained in terms of—
  - Substantive risk
  - Inquiry risk
  - Remedies risk

So what would you tell Mr. Howley about each of these risks in a TransDigm/SCHROTH deal?

Provide any strategic advice

1. Emphasize the need for a compelling sales pitch for the deal to customers of *both* companies
   - Offer to help the relevant business people develop this pitch and advise on when and how to roll it out
   - Note that it is the customers of the target company that are typically the most difficult to persuade
     - Will eventually need to work with the target company as to how best to persuade its customers
2. Emphasize the need for care in drafting documents
   - "Bad" documents alone can kill a deal
     - Avoid creating documents that suggest—implicitly as well as explicitly—that the deal could harm customers
     - Some documents are "bad" because they were carelessly phrased or factually incorrect, not because they speak the truth—These can also kill a deal
   - If there is one, include the procompetitive business rationale for the deal in as many documents as possible

Provide any strategic advice

3. Consider whether the deal can be structured to make it non-HSR reportable to minimize inquiry risk

Final thoughts

1. Caution the client that this advice is only preliminary and depends on what the client has told you in the meeting
2. Note that more work should be done
   - Would like to send the client a *preliminary information request* for easily obtainable documents and data
   - When confidentiality considerations permit, would like to set up a *meeting with knowledgeable employees* to develop the facts and the arguments further
3. Tell the client that all documents created at the request of counsel should have the following prominent legend:

   PRIVILEGED AND CONFIDENTIAL
   Prepared at the request of counsel

   - Whenever possible, make this legend *machine readable*

Do NOT forget this!!!

Final thoughts

4. Note that at some point in the process we will need to bring the target company onboard
   - The target's evidence and customer outreach program will be equally if not more critical to the outcome of any merger review
   - Note that we should be able to work with the target company under the "common interest" privilege
5. The target, unless incompetently advised, is likely to recognize the antitrust risk in the transaction
   - Should expect that the target will attempt to negotiate some provisions in the purchase agreement to—
     - Decrease the risk of a deal failure, *and*
     - Compensate the target for risk that cannot be eliminated

Will examine in Class 8

Unit 3: A Brief History of Antitrust Law
(with special attention to merger antitrust law)

Professor Dale Collins
Merger Antitrust Law
Georgetown University Law Center

August 28, 2024

A Brief History of Antitrust Law

NO MOLLY-CODDLING HERE

Source: New York Globe, 1907

The Common Law Approach to Antitrust Law

At the creation

- The Sherman Act has been criticized for employing vague, uninformative terms
- But this is a defining feature of antitrust law, *not* a bug
  - This is an intentional part of the design of U.S. antitrust law from the beginning[1]
  - The Sherman Act incorporated common law terms of art to provide a well-known body of law and precedent that enforcement officials and courts could immediately apply—
    - "Restraint of trade"
    - "Monopolization"
    - "Attempt to monopolize"
    - "Conspiracy to monopolize"
  - The common law also permitted courts to refine and modify the law with new learning and as new business practices emerged without the need for congressional action

[1] *See* William F. Baxter, *Separation of Powers, Prosecutorial Discretion, and the "Common Law" Nature of Antitrust Law*, 60 Tex. L. Rev. 661 (1982).

At the creation

- The Sherman Act adopted a "common law approach" to antitrust law
  - There was a clear recognition that Congress could not write detailed, prescriptive legislation
  - From the beginning, the Sherman bill sought to deal with the trusts through the common law or, more precisely, a common law approach

> [S.1, the Sherman antitrust bill,] does not announce a new principle of law, but applies old and well recognized principles of common law to the complicated jurisdiction of our State and Federal Government. Similar contracts in any State in the Union are now, by common law or statute law, null and void. . . .
>
> . . . The purpose of this bill is to enable the courts of the United States to apply the same remedies against combinations which injuriously affect the interest of the United States that have been applied in the several States to protect local interests.
>
> Sen. John Sherman[1]

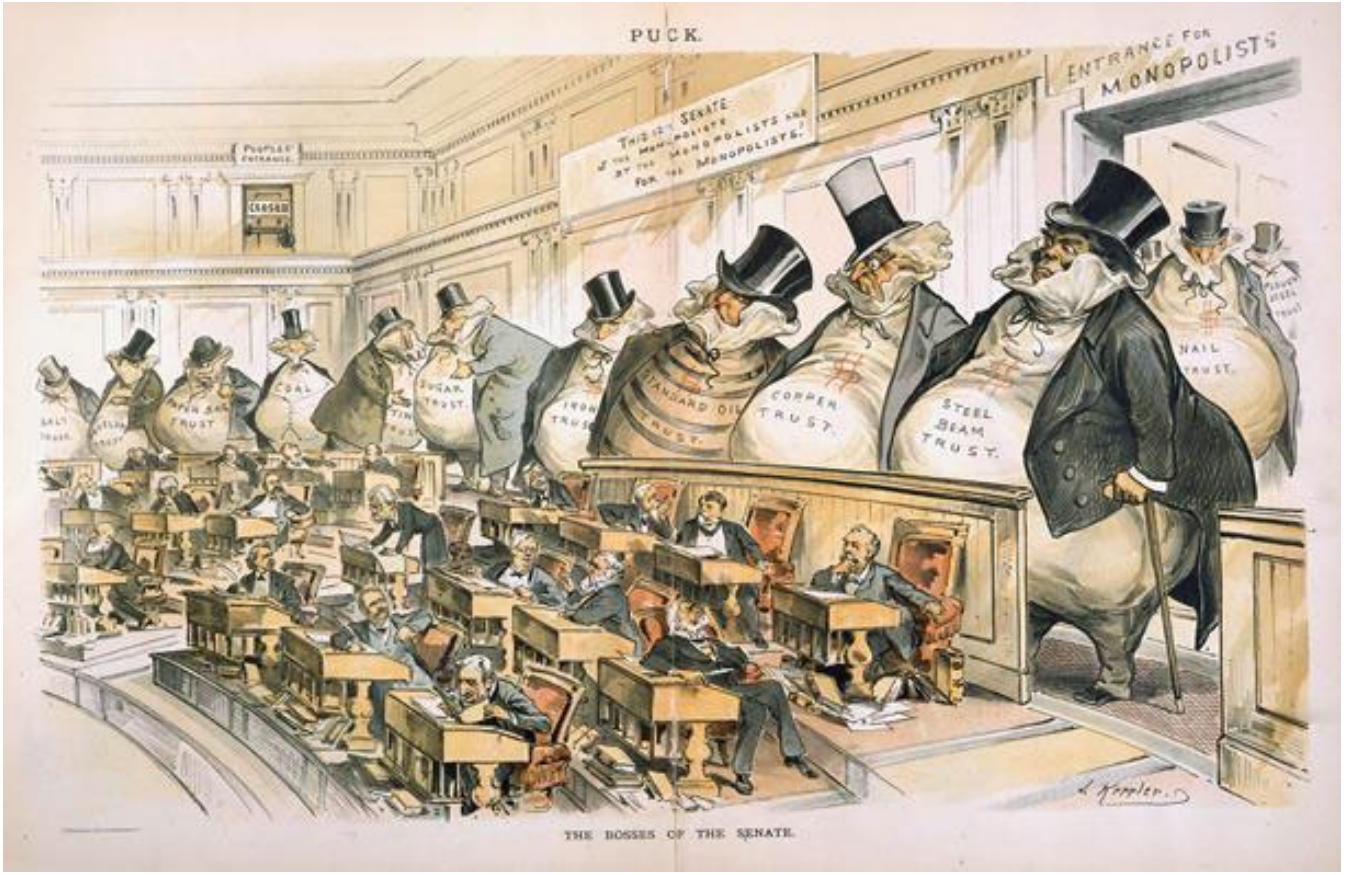
[1] 21 Cong. Rec. 2455 (Mar. 21, 1890) (remarks of Sen. John Sherman (R. Ohio)). For similar sentiments that the various iterations of the antitrust bill were all to enable the courts to apply the common law regarding business enterprises, see 20 Cong. Rec. 1167 (Jan. 25, 1889) (Sherman); 21 Cong. Rec. 2456, 2457, 2459 (Mar. 21, 1890) (Sherman); 21 Cong. Rec. 2729 (Mar. 27, 1890) (remarks of Sen. George F. Hoar (R., Mass)); 21 Cong. Rec. 3146 (Apr. 8, 1890) (Hoar); 21 Cong. Rec. 3149 (Apr. 8, 1890) (statement of Sen. John T. Morgan (D. Ala.)); 21 Cong. Rec. 3152 (Apr. 8, 1890) (Hoar).

At the creation

- Historical aside
  - Sen. John Sherman (R., Ohio) introduced his antitrust bill on August 14, 1888, in the 50th Congress
    - One of several antitrust bills introduced by various members of Congress
  - *Query*: Why would Sherman—one of the most powerful members of the Senate and a very serious candidate for the Republican Party's nomination for president in 1880, 1884, and 1888—introduce an *antitrust* bill?
    - After all, the Republicans controlled the Senate, House, and Presidency
    - AND Republicans were said to be "bought and paid for" by the trusts
  - *Query*: Just as interesting, why were the most vehement opponents of the Sherman bill Democrats, the party of the South with supposedly the most to lose from the continued operation of the trusts?

At the creation

- Historical aside



Joseph Keppler, *The Bosses of the Senate*, Puck, Jan. 23, 1889

At the creation

- Historical aside
  - Sherman reintroduced his bill as S.1 on December 4, 1889, in the 51st Congress
    - Vigorous Senate floor debate on the six days between January 23 and February 4, 1890
    - Numerous amendments were offered, many of which were adopted
    - Referred to the Senate Judiciary Committee on March 27, 1890
  - Senate Judiciary Committee reports S.1 six days later as amended in the form of a substitute on April 2, 1890
    - Nothing in the amended bill contained Sherman's language—it was an entirely new bill
    - BUT retained the idea that the antitrust statute should be an enabling act to empower the federal courts to use a common approach to antitrust law
      - Defined offenses using terms of common law art
      - Reiterated in floor debate that the bill enabled a common law approach to antitrust law[1]

[1] *See, e.g.*, 21 Cong. Rec. 3146 (Apr. 8, 1890) (remarks of Sen. George F. Hoar (R., Mass)); 21 Cong. Rec. 3149 (Apr. 8, 1890) (statement of Sen. John T. Morgan (D. Ala.)); 21 Cong. Rec. 3152 (Apr. 8, 1890) (Hoar).

At the creation

- Historical aside
  - Enactment
    - April 8, 1890: Senate Judiciary Committee bill with amendments passed Senate 52-1 and sent to the House

      (including all those vocally opposed Democrats!)
    - May 1-2, 1890: House debates, amends, and passes S.1 in an unrecorded vote

      Conference Committee: House eventually recedes from its amendments to S.1
    - June 20, 1890: House debates and passes S.1 without amendments (242-0)
    - July 2, 1890: President Benjamin Harrison signs S.1 into law

What was going on here?

Political value judgment

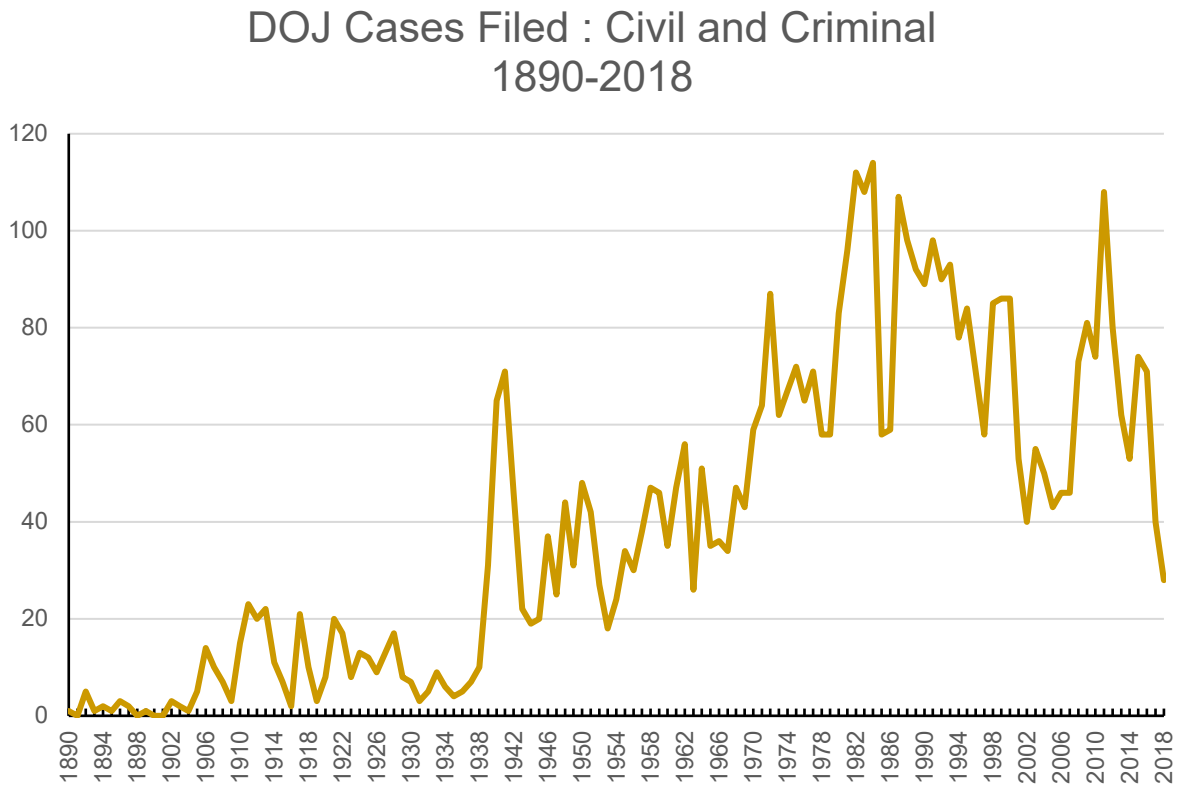
- How to operationalize the common law terms in antitrust law is a political value judgment
  - Determined by the courts in the absence of congressional direction
  - In the 130-year history of antitrust law, Congress has intervened in the common law process to change the substantive law or the direction of the courts only four times:
    - 1912: The Clayton and Federal Trade Commission Acts[1]
    - 1936: The Robinson-Patman Act[2]
    - 1937: The Miller-Tydings Act and its subsequent repeal[3]
    - 1950: The Celler-Kefauver Act[4]
- Current prospects for legislative reform
  - We were as close in the last Congress as we have been in 70 years to amending the substantive prohibitions of the antitrust laws in very significant ways—but none of the bills reached a floor vote in either chamber
  - While perhaps some legislation will be enacted narrowly targeted to the dominant high-tech firms, efforts for a general overall of the antitrust laws appear to be dead

[1] Clayton Act, ch. 323, 38 Stat. 730 (1914) (current version at 15 U.S.C. §§ 12 to 27); Federal Trade Commission Act, ch. 311, 38 Stat. 717 (1914) (current version at 15 U.S.C. §§ 41-58).
[2] Ch. 592, § 1, 49 Stat. 1526 (1936) (current version at 15 U.S.C. §§ 13-13a).
[3] Ch. 690, 50 Stat. 693 (1937), *repealed*, Pub. L. 94-145, 89 Stat. 801 (1975).
[4] Ch. 1184, 64 Stat. 1125 (1950) (current version at 15 U.S.C. § 18 (1976)).

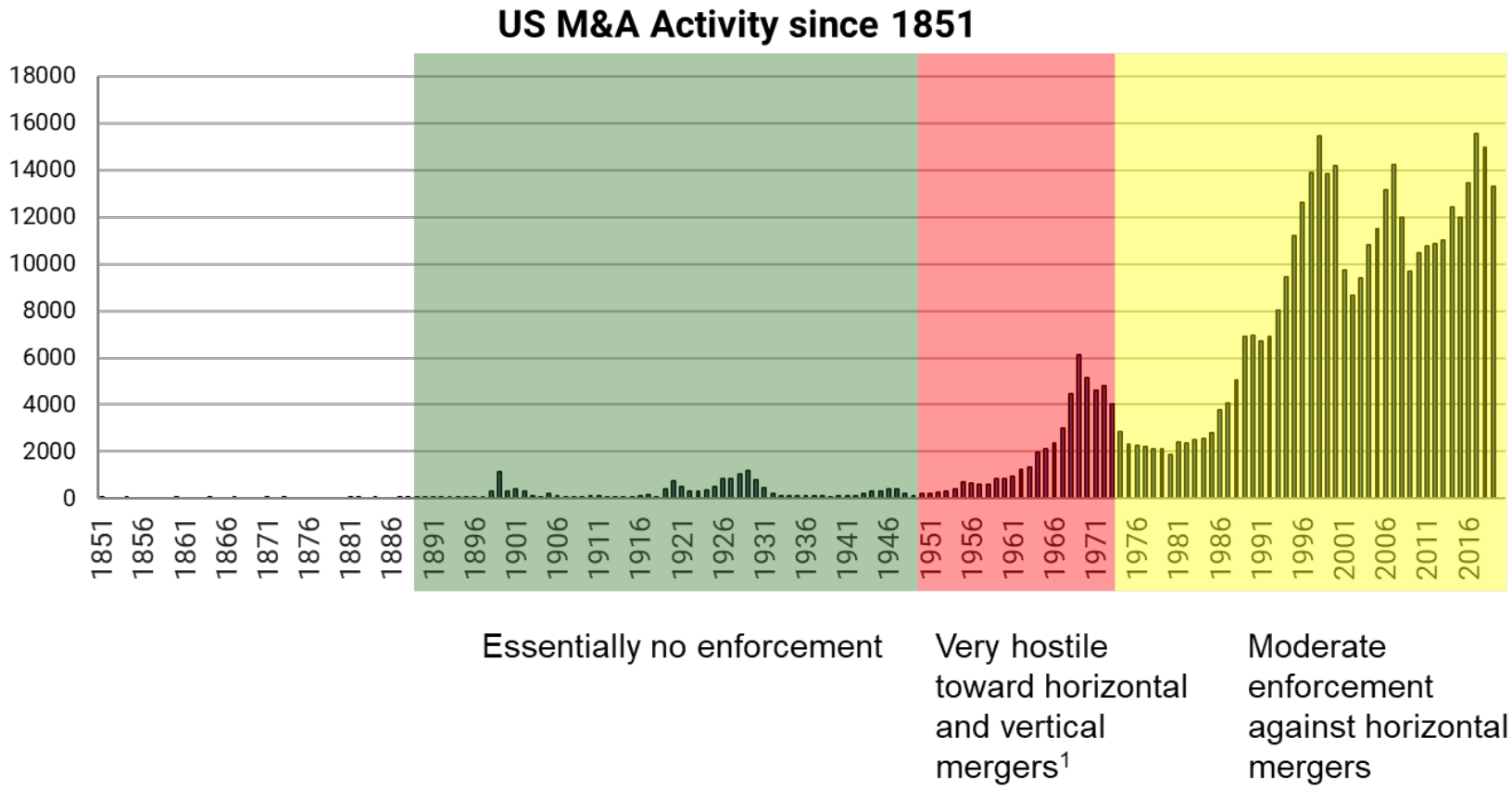
The Evolution of Antitrust Law

Antitrust law over time

- The goals of antitrust law in general—and the intensity of antitrust enforcement—have changed dramatically over the last 130+ years



Antitrust law over time



[1] The uptick in M&A activity during this period was largely comprised of conglomerate mergers, which the agencies (with few notable unsuccessful exceptions) did not challenge.

The first 47 years (1890-1937)

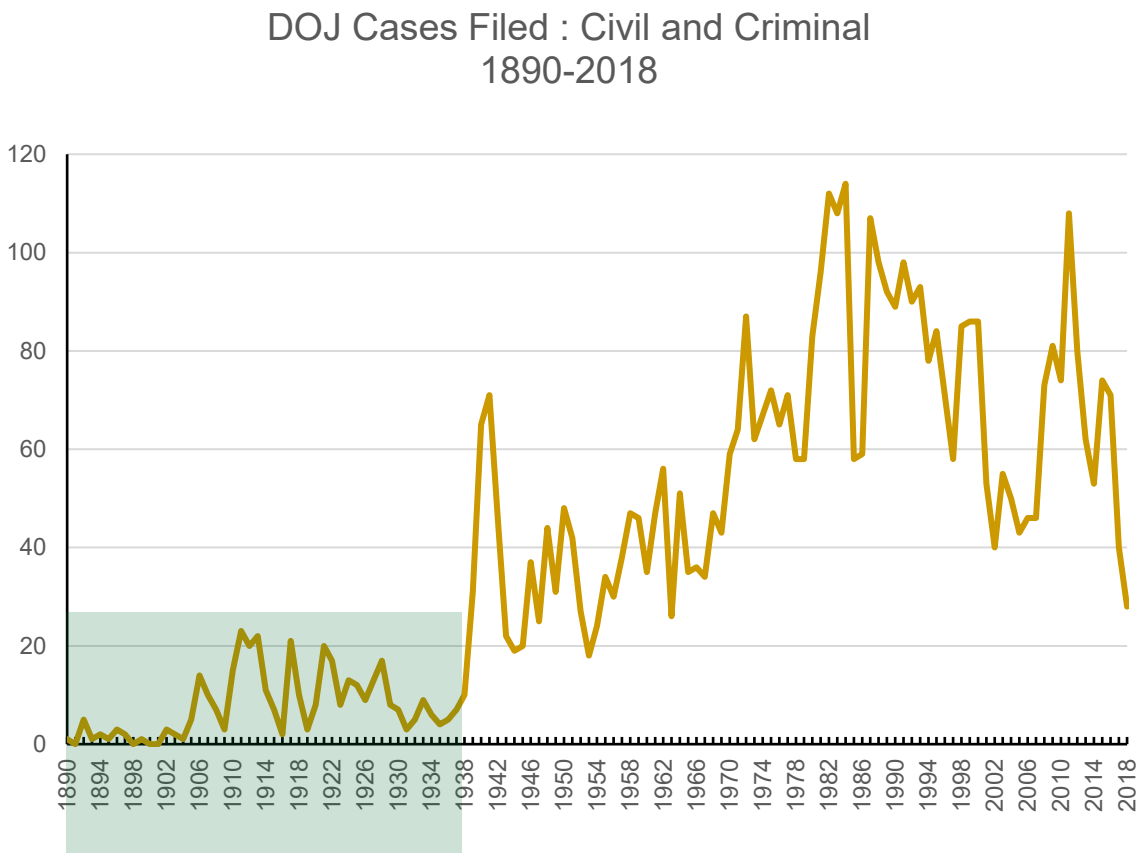
- Antitrust law was largely non-interventionist from 1890 to 1937
  - Some blips in the T.R. Roosevelt and Taft administrations and to a somewhat lesser extent in the Wilson administration
  - But overall—
    - World War I mobilization, much of which required extensive coordination among companies, increased real GDP by 23% between 1914 and 1920
      - Compound average growth rate (CAGR) = 3.5%
    - The economic boom in 1920s increased real GNP by 46.6% between 1921 and 1929
      - Compound average growth rate (CAGR) = 4.9%
    - The Crash in 1929 and subsequent Great Depression

    resulted in an "hands off" antitrust attitude

Attitude before the Great Depression: The economy is not broken, so don't try to fix it by enforcing the antitrust laws

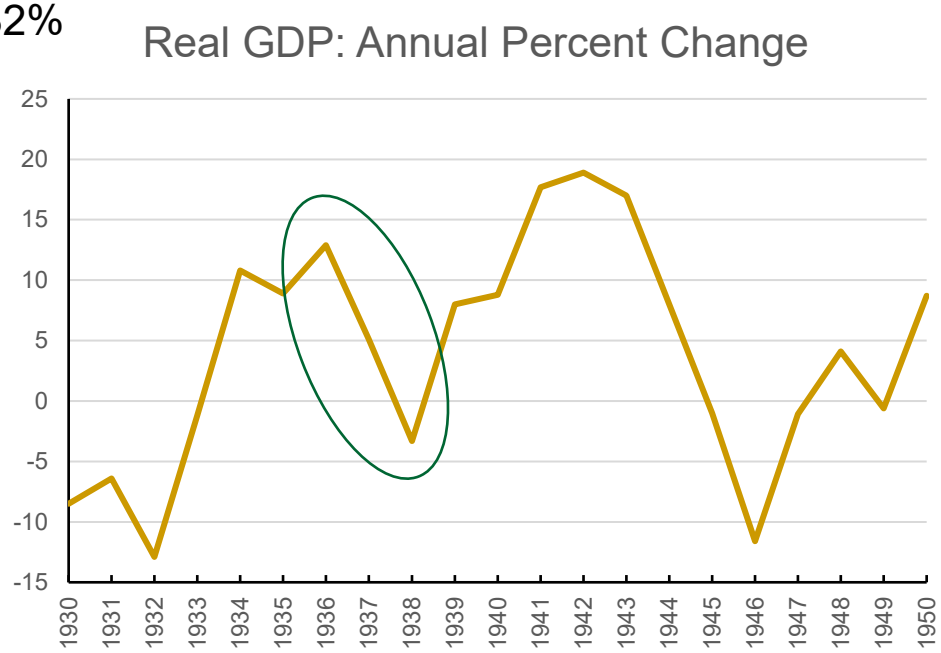
Attitude after the Great Depression: The economy is broken, but don't try to fix it by enforcing the antitrust laws

The first 47 years



The 1937-1938 recession and its aftermath

- Attitudes quickly changed in 1937 as a major recession hit
  - By early 1937, production, profits, and wages had regained their early 1929 levels
- But then a deep recession hit (May 1937-June 1938)
  - Third worst recession in the twentieth century
  - Real GDP dropped 10%
  - Industrial production declined by 32%
  - Unemployment rate jumped from 12.2% in May 1937 to 20.0% in June 1938
- The FDR administration came under assault in a very heated political environment

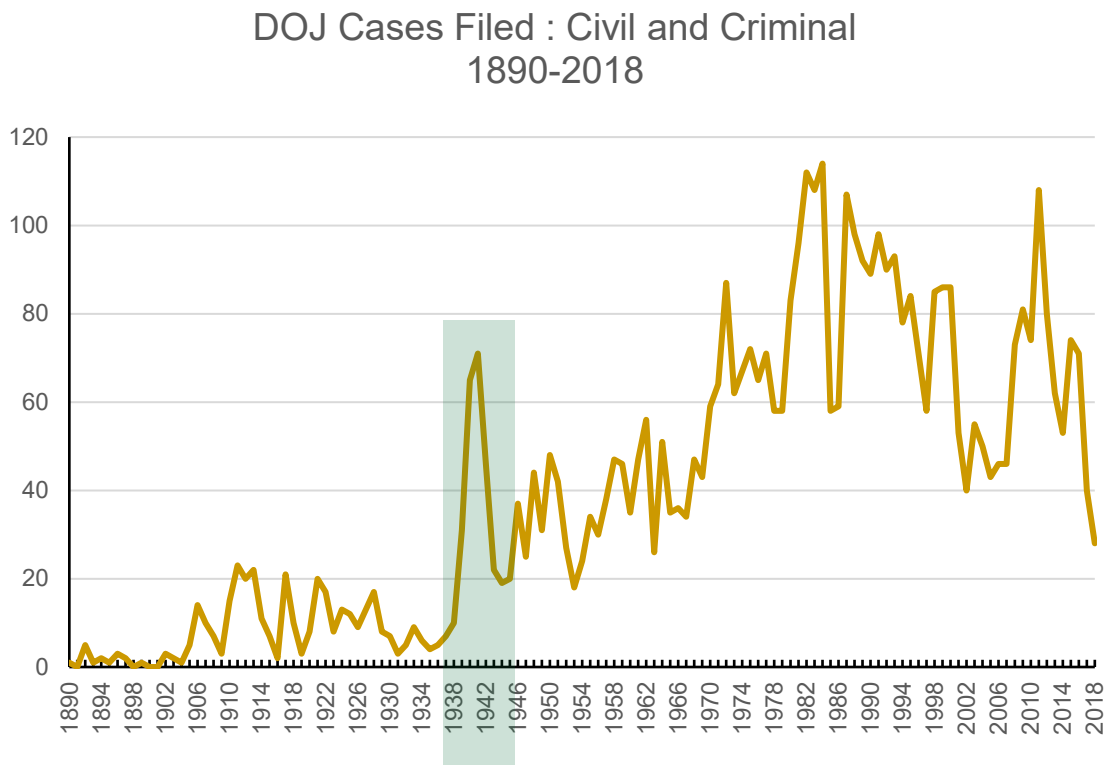


The 1937-1938 recession and its aftermath

- Roosevelt's response
  - Roosevelt argued that big businesses were trying to ruin the New Deal by causing another depression that voters would react against by voting Republican in the 1938 midterm election[1]
    - In fact, the recession was probably due to—
      - a reduction of the money supply caused by new Federal Reserve and Treasury Department policies, and
      - a contractionary fiscal policy due to an increase in taxes from the new Social Security program and a decrease in spending because of the expiration of the WWI veterans bonus[2]
  - As part of this campaign, Attorney General Homer Cummings and new Assistant Attorney General for Antitrust Robert Jackson began an aggressive enforcement program
    - Primarily against price-fixing cartels
    - But also included the ALCOA monopolization case filed in early 1937
    - Mergers, however, did not appear to be a target
  - Aggressive antitrust enforcement continued through the 1940s
    - Thurman Arnold continued the program when he was appointed to replace Jackson in 1938
    - Jackson became Solicitor General and then Attorney General in 1940
  - Policy sustained with continued rapid economic growth created by WWII mobilization
    - Real GDP increased by 102.6% between 1938 and 1945 with war mobilization (CAGR = 10.6%)

[1] *See, e.g.*, DAVID M. KENNEDY, FREEDOM FROM FEAR: THE AMERICAN PEOPLE IN DEPRESSION AND WAR, 1929–1945, at 352 (1999).
[2] *See* Christina Romer, *The Lessons of 1937*, THE ECONOMIST (June 18, 2009).

Late Depression/World War II (1937-1945)



Post-World War II (1946-1972)

- Widespread and very negative public reaction to the support by large industrial enterprises of the Nazi Germany and Imperial Japanese regimes
- Legislative change
  - Congress enacts the 1950 Celler-Kefauver Act[1] amendments to Section 7 to close some "loopholes" that had rendered Section 7 essentially meaningless
  - Equally if not more important than the specific changes in the statute, the legislative history of the amendments was aggressively hostile to business combinations
    - This is actually the aspect of the 1950 legislation that most influenced the courts
  - Major concerns expressed in the legislative history[2]—
    1. Fear of "the rising tide of economic concentration in the American economy"
    2. Loss of opportunity for small business when competing with large enterprises
    3. The spread of multistate enterprises and the loss of local control over industry

[1] Ch. 1184, 64 Stat. 1125 (1950) (amending Section 7 of the Clayton Act).
[2] *See* Brown Shoe Co. v. United States, 370 U.S. 294, 311-23 (1962).

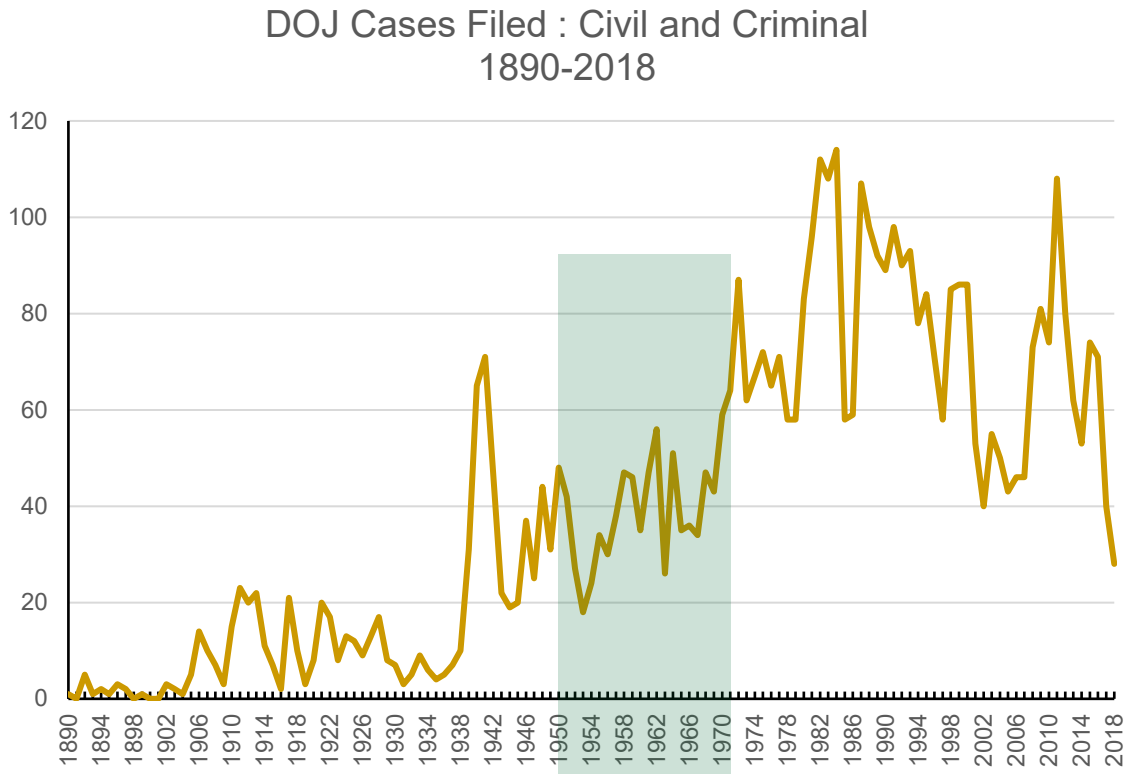
Post-World War II (1946-1972)

- Congressional concerns were broadly shared by the public—and, apparently, by the courts
  - Supported a very restrictive merger antitrust regime
  - Did not require deep microeconomic analysis to implement
- Antitrust redirected: The new goals for the 1950s and 1960s—
  1. Minimize industrial concentration beyond certain bounds
  2. Maximize the prospects of survival of small businesses
  3. Minimize restraints on freedom of choice of economic actors

This resulted in an aggressively interventionist antitrust regime

Post-World War II (1946-1971)

- The increasingly restrictive antitrust regime resulted in more prosecutions

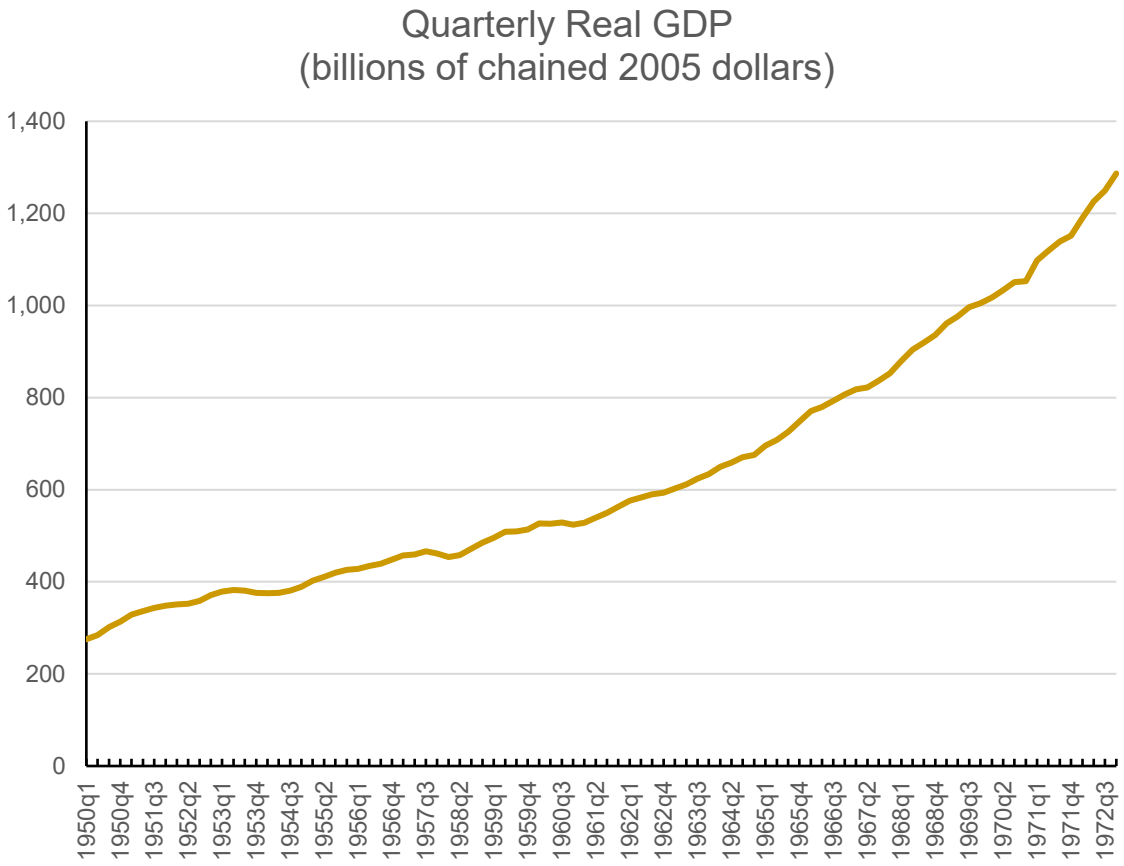


Post-World War II (1946-1972)

- To the extent this more aggressive antitrust enforcement policy reduced productive efficiency, neither Congress nor the public cared
  - Any inefficiencies became noise in the economic boom that followed WWI for two decades

Indicator	1950-1972
Real GDP (average annual growth)	4.1%
Nonfarm business productivity (average annual rate)	2.8%
Inflation (average annual change Dec. to Dec.)	2.6% Max = 6.2%
Bank prime loan rate (annual—data series starts in 1956)	5.8% Max =8.0%
Unemployment (average monthly rate)	4.6% Max = 7.5%
Median real family income (average annual change)	3.3%

Post-World War II (1946-1972)



Post-World War II (1946-1972)

- The post-WWII enforcement policy resulted in an increasingly restrictive antitrust regime
  - Further tightening on horizontal price fixing
    - Actually began somewhat earlier (*Socony-Vacuum* (1940))
    - Easing of rules to find concerted action (*Container Corp*. (1969))
  - Horizontal mergers—close to per se unlawful
    - E.g., *Brown Shoe* (1962), *PNB* (1963), *Pabst/Blast* (1966), *Von's Grocery* (1966), 1968 Merger Guidelines
  - Vertical mergers—close to per se unlawful
    - *Brown Shoe* (1962), *DuPont/GM* (1957)
  - Conglomerate mergers seriously challenged
    - *P&G* (1958), *El Paso Natural Gas* (1964), *Falstaff* (1973), the DOJ potential competition campaign
  - Tightening of Section 2 prohibitions and enforcement
    - *Alcoa* (1945)
    - *Grinnell* (filed 1961), *IBM* (filed 1969), *AT&T* (filed 1974)
    - "Shared monopoly" theory

Post-World War II (1946-1972)

- The post-WWII enforcement policy resulted in an increasingly restrictive antitrust regime
  - Nonprice vertical restraints—per se unlawful
    - *Albrecht* (1968)
    - *Schwinn* (1967) (overruling *White Motor* (1963))
  - Reinforcement of tying arrangements as per se illegal
    - *Northern Pacific* (1958)
  - Tightening of rules on refusals to deal
    - *Associated Press* (1945) (horizontal boycott)
    - *Klor's* (1959) (secondary boycott)
  - Horizontal combinations/joint ventures
    - *Sealy* (1967)
    - *Topco* (1972)
  - Remedies and procedure
    - *DuPont* (1957): Essentially holding that the DOJ cannot be time-barred in a government injunctive action where there continued to be anticompetitive effects traceable to the challenged acquisition and permitting a challenge 30 years after acquisition to proceed on the merits
    - *Hanover Shoe* (1968): Holding that Clayton Act § 4 does not recognize a "passing on" defense

The "malaise" period (1973 to 1981)[1]

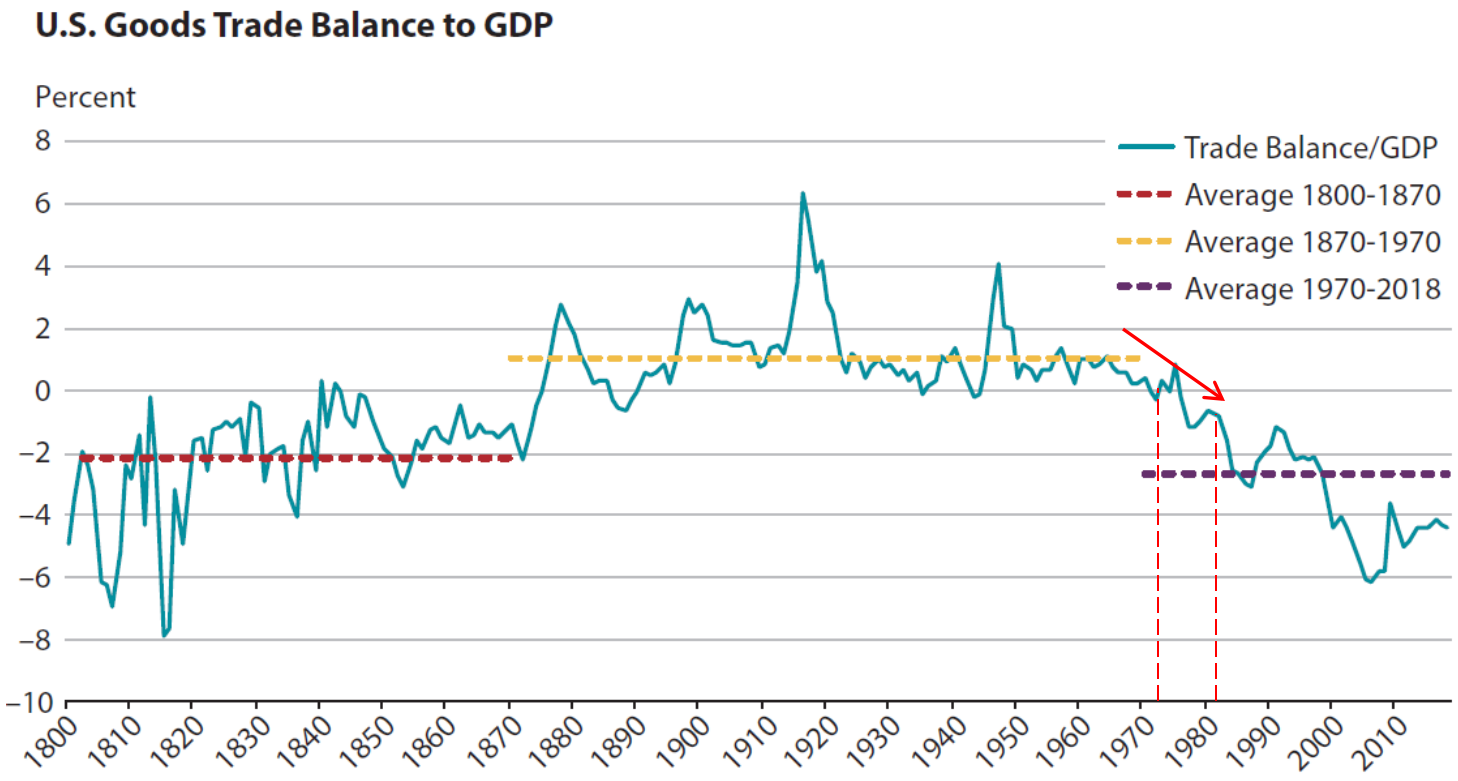
- "Stagflation" gripped the nation (known as the "Great Stagflation")[2]
  - Significant inflation resulting from the Mideast oil shocks in 1973 and 1979 and the expansionary monetary policy beginning in the late 1960s to finance the Vietnam War
  - "Productivity crisis" resulting from the obsolescence of "old economy" and equipment
- Substantial concern about U.S. competitiveness in the world market (especially against Japan) in areas that since WWII that had been traditional American strengths (e.g., automobiles, steel)
- Growing influx of imported manufacturing goods threatened some American industries in the domestic market (e.g., consumer electronics)
- Gasoline shortages/price controls resulting from OPEC output restrictions
- Economic growth significantly slowed down
  - Real GDP in the 20-year period up by only 20.4% (CAGR = 2.3%)

[1] My name for this period comes from a speech by President Carter. *See* Pres. Jimmy Carter, Crisis of Confidence, Televised Addressed to the Nation (July 15, 1979) (popularly known as the "Malaise Speech").

[2] "Stagflation" means low real growth and high inflation. *See generally* ALAN S. BINDER, ECONOMIC POLICY AND THE GREAT STAGFLATION (2013); PAUL M. SWEEZY, THE END OF PROSPERITY: THE AMERICAN ECONOMY IN THE 1970S (1977); Robert B. Barsky & Kilian Lutz, *Do We Really Know that Oil Caused the Great Stagflation? A Monetary Alternative*, *in* 16 NBER MACROECONOMICS ANNUAL 137 (2002).

The "malaise" period (1973 to 1981)

- U.S. Goods Trade Balance to GDP



Source: Brian Reinbold & Yi Wen, Historical U.S. Trade Deficits, Economic Synopses, No. 13, Fig. 1 (Fed. Res. Bank of St. Louis 2019).

The "malaise" period (1973 to 1981)

- Economic conditions—Not good times

Indicator	1950-1972	1973-1982
Real GDP (average annual growth)	4.1%	2.4%
Nonfarm business productivity (average annual rate)	2.8%	1.0%
Inflation (average annual change Dec. to Dec.)	2.6% Max = 6.2%	8.7% Max = 13.3%
Bank prime loan rate (annual—data series starts in 1956)	5.8% Max =8.0%	11.10% Max = 18.9%
Unemployment (average monthly rate)	4.6% Max = 7.5%	7.0% Max = 10.8%
Median real family income (average annual change)	3.3%	-0.2%

The "malaise" period (1973 to 1981)

- Emerging sentiment toward business
  - Government policies generally needed to be revised to:
    - Foster America's industrial competitiveness
    - Revive the nation's industrial base
    - Return to the country to the post-WWII standards of steady growth, low inflation, and low unemployment
  - WWII concerns about the evils of large industrial concentrations had largely dissipated
    - Could not afford to act on these concerns in any event, especially given the perceived success of the Japanese keiretsu
- Rapidly emerging perception/consensus that—
  - Many antitrust rules impeded efficient business operations and constrained competitiveness
  - Antitrust was a blunt and unnecessary instrument for achieving distributional goals
  - To the extent that distribution goals remain, other government instruments might be better suited to achieving them
- Strong political pressures to address these concerns

The "malaise" period (1973 to 1981)

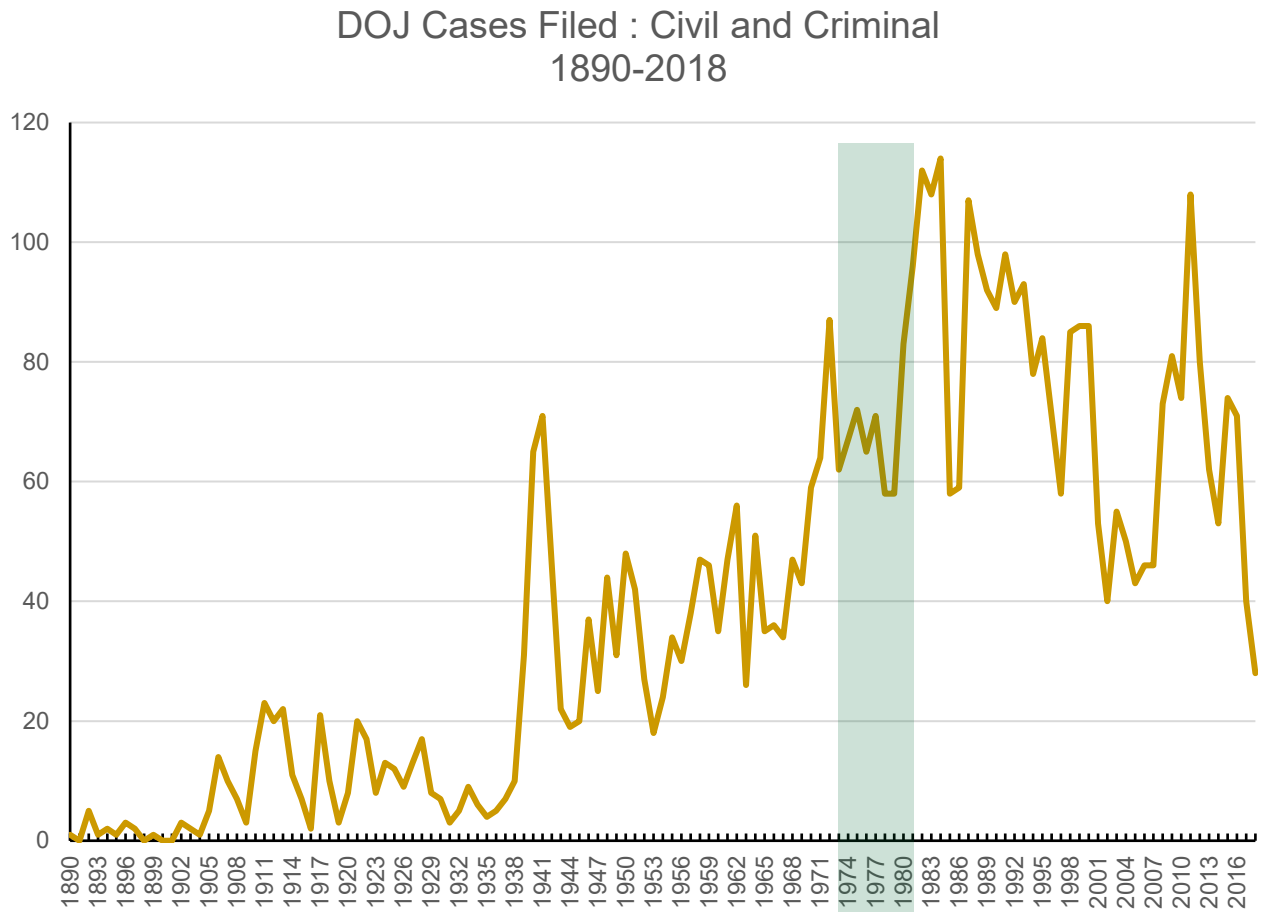
- As part of the response, courts begin to "loosen" antitrust restrictions to maximize output and industrial productivity
  - Antitrust narrowly limited to competition concerns
    - *Professional Engineers*
  - Explicitly adopt the "consumer welfare" standard
    - *Reiter*
  - Continued aggressive approach to horizontal price fixing
    - *Goldfarb*, *Gypsum*, *McLain*, *Catalano*, *Texas Industries*, *Hydrolevel*
  - Some loosening of Section 1 restraints on joint ventures
    - *Broadcast Music*
  - Horizontal mergers—near per se illegality being replaced by an economic effects analysis
    - *General Dynamics*
  - Vertical mergers—generally procompetitive, but where anticompetitive can be remediated through "access" consent decrees
  - Potential competition mergers
    - Courts rejected DOJ's prosecution campaign

The "malaise" period (1973 to 1981)

- Courts begin to "loosen" antitrust restrictions to maximize output and industrial productivity
  - Section 2
    - General rejection of "shared monopoly" as an actionable theory of harm
    - But DOJ brought the *IBM* monopolization case in 1974
  - Nonprice vertical restraints—returned to rule of reason treatment
    - *GTE Sylvania*
  - Robinson-Patman Act
    - DOJ urges repeal, viewing the RPA as anticompetitive
    - DOJ and FTC essentially cease enforcing
  - Significant limitations on antitrust standing limited private parties' ability to sue
    - *Brunswick*, *Illinois Brick*, *J. Truett Payne*

Note: The DOJ and FTC resisted many of these changes throughout this period

The “malaise” period (1973 to 1981)



The modern period (1982 to present)

- Ronald Reagan elected president in 1980
  - Major emphasis on growing the economy by reducing government intervention in private affairs: The four Reagan economic planks—
    1. Reduce the growth of government spending
    2. Reduce the federal income tax and capital gains tax
    3. Reduce government regulation
    4. Tighten the money supply in order to reduce inflation
  - Stagflation brought under control—Economy starts to grow
- George Bush elected president in 1988
  - Largely continued Reagan's policies
  - DOJ and FTC issue 1992 Horizontal Merger Guidelines
- Bill Clinton elected president in 1992
  - After 1994 midterm election, adopted "triangulation" approach to policy-making
  - Somewhat more aggressive in antitrust enforcement, but did not materially alter antitrust enforcement goals

The modern period (1982 to present)

- Continued concern about increasing industrial output and productivity
  - Economic indicators during period have an upside-down "U" shape:
    - Recovering—not too gracefully—from the 1970s during 1983-1992
    - Reach affirmatively good times during 1993-2000 (which ended with the dot.com bust)
    - More stagnant times during 2001-2006 (with slow but steady recovery aided by an easy money policy and resulting in an asset bubble and significant overleveraging)
    - Financial crisis, deep recession, and very slow recovery since 2007
    - Just as business returned to doing well, COVID hit
  - But sustained growth, like that found in the post-WWII period, never returned to the U.S.
    - U.S. never politically regained the "luxury" of trading off output and efficiency for deconcentration/small business/freedom of economic choice concerns

The modern period (1982 to present)

- Economic conditions—recovering, then pretty good, then not too good with a slow recovery, then COVID

Indicator	1973-1982	1983-2006
Real GDP (average annual growth)	2.4%	3.4%
Nonfarm business productivity (average annual rate)	1.0%	2.2%
Inflation (average annual change Dec. to Dec.)	8.7% Max = 13.3%	3.1% Max = 6.1%
Bank prime loan rate (annual—data series starts in 1956)	11.1% Max = 18.9%	8.0% Max = 12.0%
Unemployment (average monthly rate)	7.0% Max = 10.8%	5.9% Max = 10.4%
Median real family income (average annual change)	-0.2%	0.9%

The modern period (1982 to present)

- *New view*: Antitrust law should maximize output and industrial productivity to improve "consumer welfare"
  - The 1970s idea that antitrust law should maximize output and industrial productivity to restore America's competitiveness readily morphed into the "consumer welfare standard" in the 1980s
    - Robert Bork popularized the term "consumer welfare" in The Antitrust Paradox (1978)
  - Adoption by the Supreme Court
    - In 1979, the Supreme Court in Reiter v. Sonotone Corp. observed that "Congress designed the Sherman Act as a 'consumer welfare prescription'"[1]
    - Since *Reiter*, the Supreme Court has reaffirmed the consumer welfare standard as the goal of antitrust law in at least six other cases (including most recently in the 2021-2022 term)[2]
    - Today, at least seven of the Supreme Court justices are firmly committed to the consumer welfare standard as the lens through which antitrust law should be interpreted and applied[3]

[1] 442 U.S. 330, 343 (1979) (citing Robert Bork, The Antitrust Paradox 66 (1978)).
[2] *See* Nat'l Collegiate Athletic Ass'n v. Alston, 141 S. Ct. 2141, 2166 (2021); Ohio v. Am. Express Co., 138 S. Ct. 2274, 2290 (2018); Leegin Creative Leather Prod., Inc. v. PSKS, Inc., 551 U.S. 877, 889, 902, 906 (2007); Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co., 549 U.S. 312, 324 (2007); Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 221 (1993); Nat'l Collegiate Athletic Ass'n v. Bd. of Regents of Univ. of Oklahoma, 468 U.S. 85, 107 (1984).
[3] The Westlaw antitrust library lists also 500 cases that use the term "consumer welfare," but some of these are not strictly antitrust cases and in others the term may have appeared in something other than the majority decision.

The modern period (1982 to present)

- Antitrust rules refashioned under the consumer welfare standard
  - No change in strict prohibitions and aggressive enforcement against "garden variety" horizontal price fixing
  - But new limitations on finding concerted action
    - Single entities: *Copperweld* (1984), *American Needle* (2010)
    - From circumstantial evidence: *Matsushita* (1986), *Business Elecs*. (1988), *Brooke Group* (1993)
  - Significant loosing of restrictions on dominant firm behavior
    - *Spectrum Sports* (1993), *Trinko* (2004), *Linkline* (2009), *Weyerhauser* (2007), DOJ Section 2 Report (2008)
    - But see *Aspen Skiing* (1985), withdrawal of the DOJ's Section 2 report (2009)
    - Only episodic government actions (*Microsoft*, *American Airlines, Intel*)
  - Significant loosing of restrictions on distributional restraints
    - *Monsanto* (1984), *Kahn* (1997), *Leegin* (2007), *Amex* (2018)
    - But see *Kodak* (1992)
  - New requirement for finding illegal tying arrangements
    - *Jefferson Parish* (1984)
  - Remedies and procedure impose limitations on private actions
    - *Empagran* (2004), *Twombly* (2007)

The modern period (1982 to present)

- Merger antitrust enforcement radically changed
  - Market definition
    - Adopted the "hypothetical monopolist" concept of the 1982 DOJ Merger Guidelines
  - Horizontal mergers
    - Instituted a strong economic approach to analyzing competitive effects in mergers
      - 1982 DOJ Merger Guidelines
      - 1992 DOJ/FTC Horizontal Merger Guidelines
      - 1997 efficiencies amendment to the Horizontal Merger Guidelines
      - 2010 DOJ/FTC Horizontal Merger Guidelines
      - 2020 DOJ/FTC Vertical Merger Guidelines
    - Rejects market concentration or firm size as sufficient to deem a merger anticompetitive
      - This rejects the 1960s approach
    - Requires an affirmative finding of anticompetitive effect
    - Imposes comparatively high concentration and market share thresholds to establish a prima facie anticompetitive effect
    - But high thresholds for downward-pricing pressure defenses to overcome the government prima facie case of anticompetitive effect
  - Vertical mergers largely viewed as procompetitive
    - Only episodic government actions—essentially all settled through "access" consent decrees
  - Conglomerate merger theories of harm rejected

The Consumer Welfare Standard: The Textbook Model

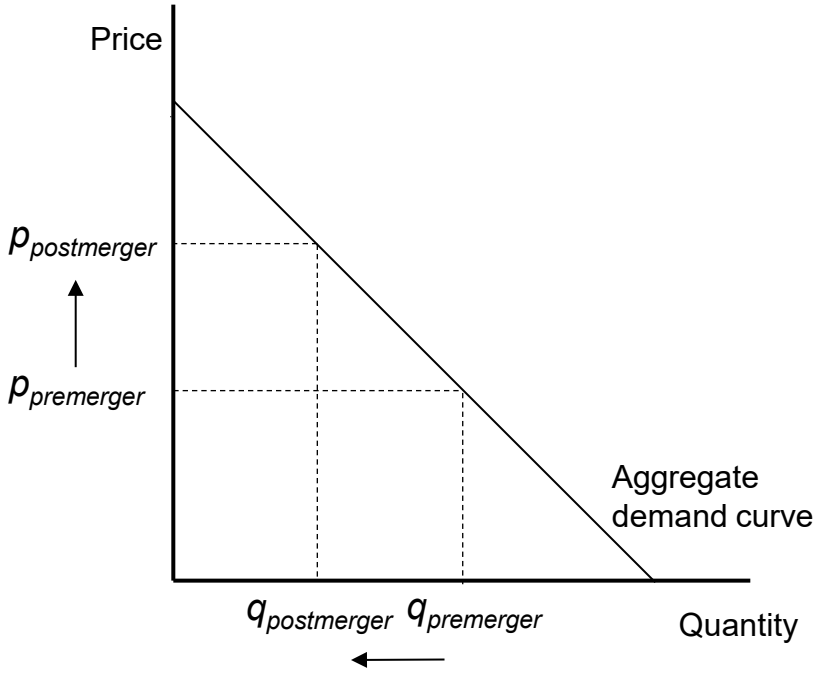
The consumer welfare standard in practice

- The consumer welfare standard as applied to mergers[1]
  - Mergers are socially bad when they harm consumers (customers) by—
    1. Increasing market price or decreasing market output;
    2. Shifting wealth from consumers to producers; or
    3. Creating economic inefficiency ("deadweight loss")
  - Other potential socially adverse effects when they harm consumers by—
    4. Decreasing marketwide product or service quality
    5. Decreasing the rate of technological innovation or product improvement
    6. Decreasing marketwide product choice

[1] The slides develop the consumer welfare standard in the context of mergers but the ideas apply generally to identify all types of anticompetitive conduct under the standard.

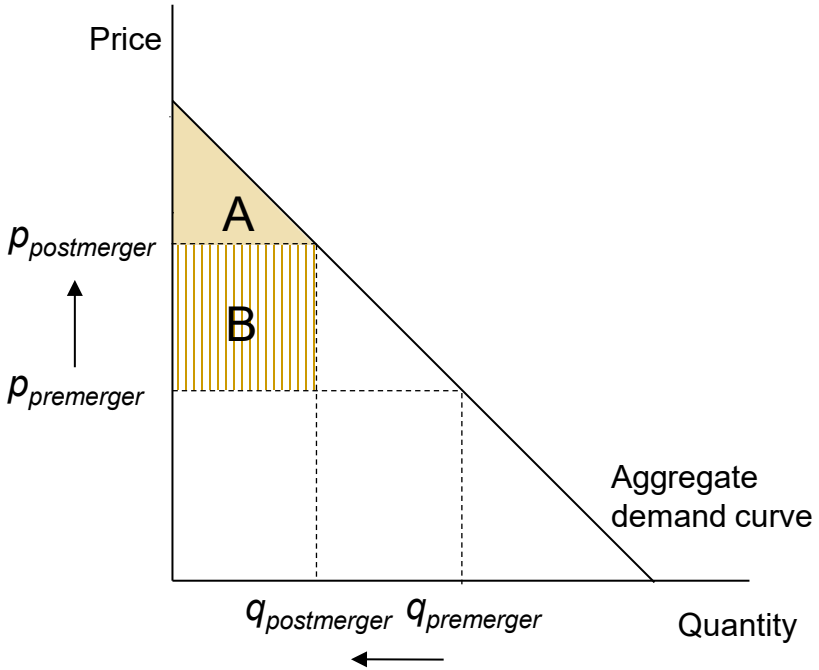
The consumer welfare standard: Textbook model

- The standard diagrams:
  1. Merger harms consumers by increases the market price or reducing the output available for consumers to purchase



The consumer welfare standard: Textbook model

- The standard diagrams:
  2. Merger harms consumers by shifting wealth from inframarginal consumers to producers*
     - Total wealth created ("surplus"): A + B
     - Sometimes called a "rent redistribution"



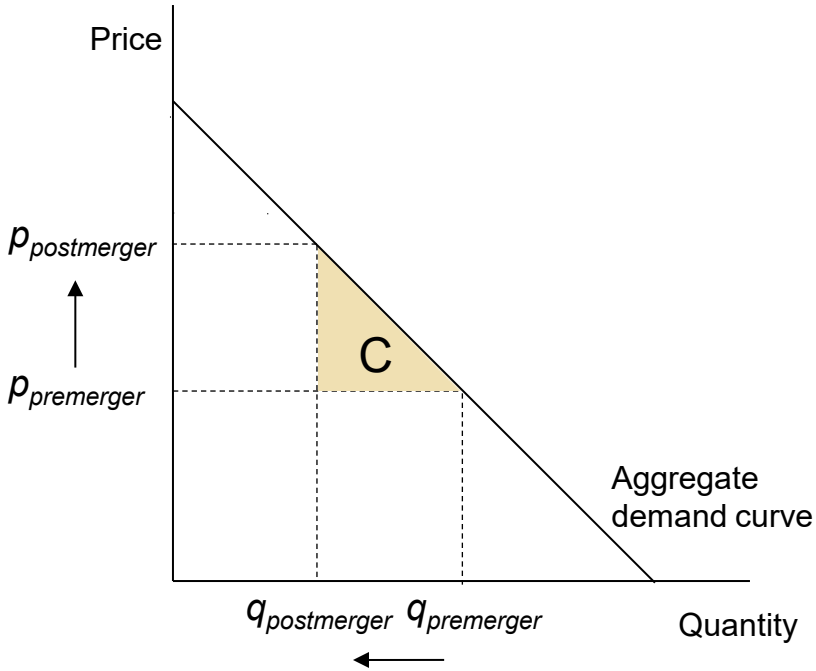
	Premerger	Postmerger
Consumers	A + B	A
Producers	0	B

Think about "consumer surplus" as the maximum amount consumers in the aggregate would be willing to pay above the price that they paid to obtain the product. This is the consumers "gains from trade" from their purchase transactions.

* Inframarginal customers here means customers that would purchase at both the competitive price and the monopoly price

The consumer welfare standard: Textbook model

- The standard diagrams:
  3. "Deadweight loss" of surplus of marginal customers*
     - Surplus C just disappears from the economy
     - Creates "allocative inefficiency" because it does not exhaust all gains from trade



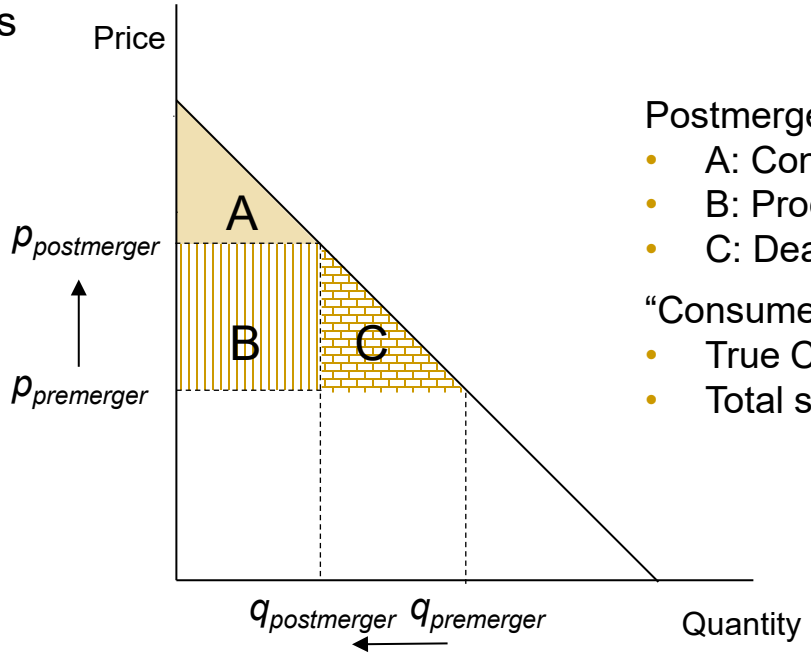
* Marginal customers here means customers that would purchase at the competitive price but not at the monopoly price

The consumer welfare standard: Textbook model

- Important note!
  - The textbook public policy explanation is NOT what courts and enforcement agencies use in applying the antitrust law or making enforcement decisions
    - There is no attempt to estimate consumer surplus (Area A in the diagram)
    - There is no attempt to estimate the deadweight loss (Area C) nor does the law provide a cause of action or relief to inframarginal customers harmed by an anticompetitive practice
  - Instead, the courts and the agencies focus on a more generalized notion of whether customers are worse off with the merger than without it
  - Some specific operational tests in practice: If the merger—
    - Expands market output, the merger is procompetitive regardless of price effects
    - Reduces market output, the merger is anticompetitive
    - Results in a price increase for some or all customers and no price decrease to any customers, the merger is anticompetitive (unless output expands, usually because of a product or service quality increase)
    - Increases price for some customers but decreases it for others, then the merger is anticompetitive if the wealth transfer to producers from the price increase is greater than the wealth transfer to customers from the price decrease
    - Reduces product or service quality in the market as a whole or reduces the rate of innovation, the merger is anticompetitive

The consumer welfare standard: Bork

- *Aside*: Robert Bork and the meaning of consumer welfare
  - Ironically, while Bork popularized the term "consumer welfare," he measured welfare in terms of consumer and producer surplus, making producer profits part of the calculus
    - Bork's measure is what economists call "total surplus," and Bork's misuse of the term "consumer surplus" has caused considerable confusion
  - Courts and the enforcement agencies, however, use "consumer welfare" to mean the welfare of consumers, regardless of any positive or negative effects on producers



Postmerger
- A: Consumer surplus
- B: Producer surplus (profits)
- C: Deadweight consumer surplus loss

"Consumer surplus"
- True CS: A
- Total surplus: A+B (Bork's consumer surplus)

Modern Critiques of Merger Antitrust Law

The reformers' argument

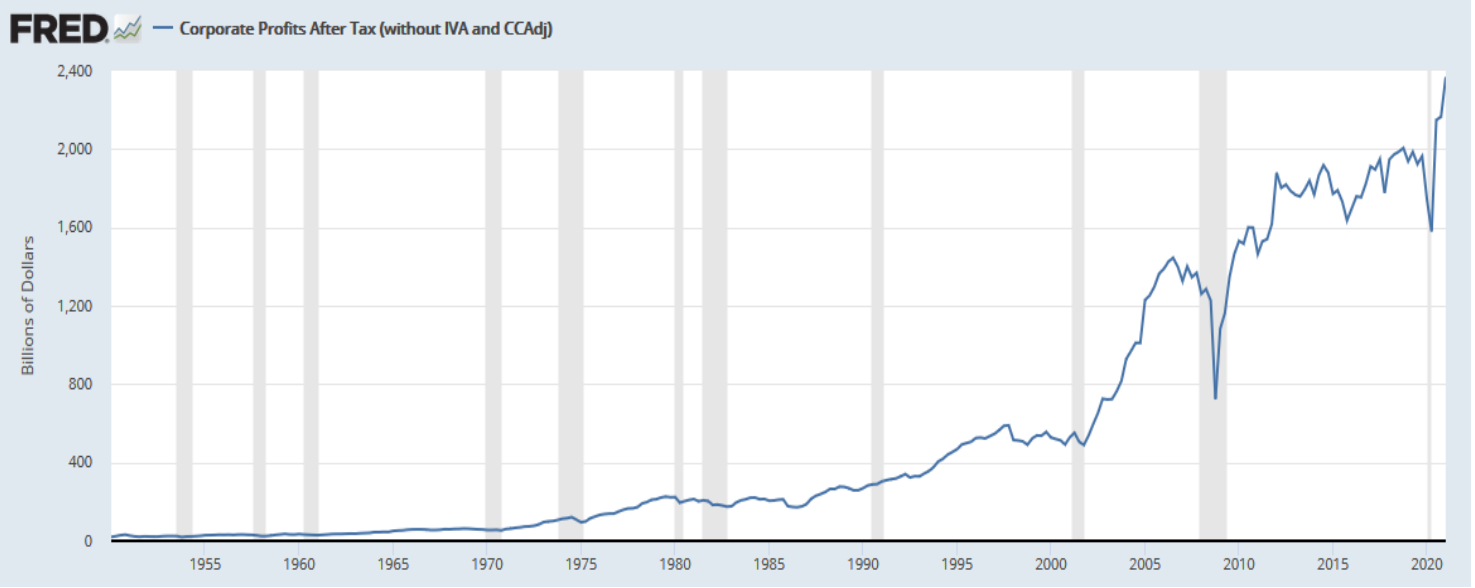
- The bottom line for the reformers:

The economy is not working for average Americans—and the current antitrust regime is a large part of the problem

Note: The slides that follow give the reformers' argument. They are not designed to give a neutral view and some of the studies cited have methodological flaws.

The reformers' argument

- Corporate profits are soaring in absolute dollars

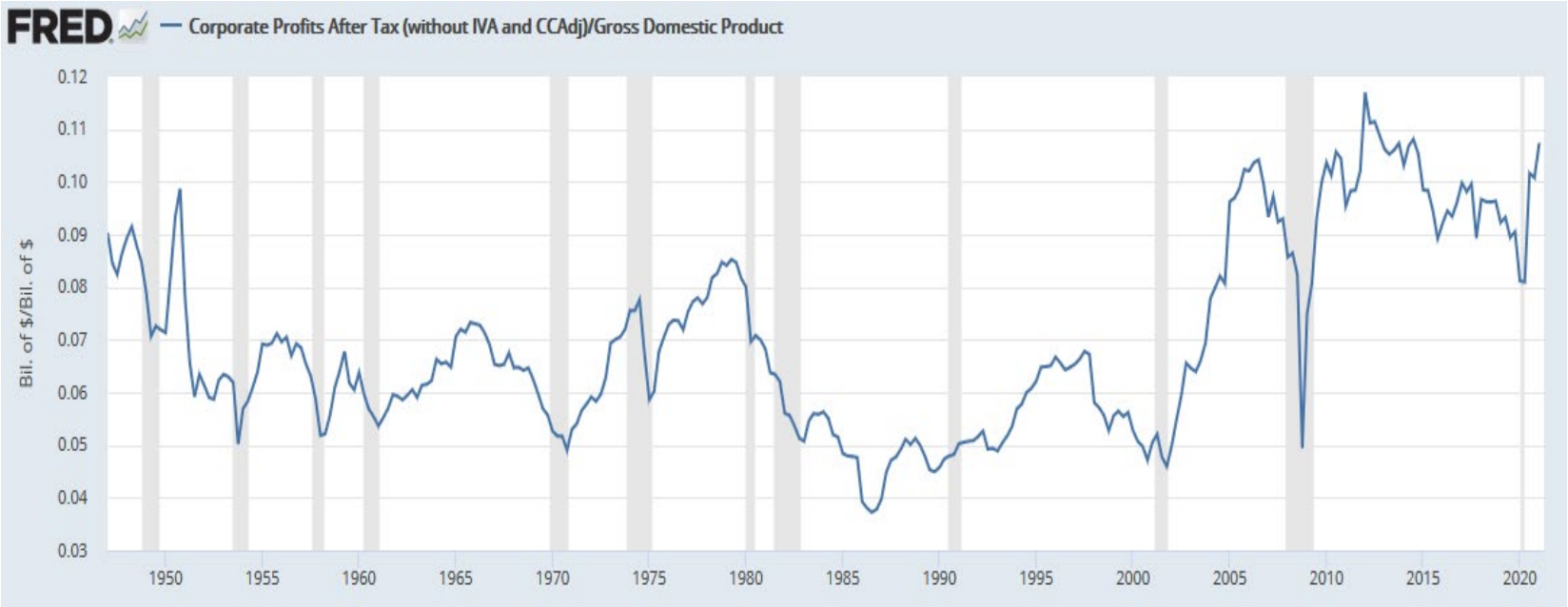


Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Economic Analysis, Corporate Profits After Tax (without IVA and CCAdj) [CP], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/CP, July 31, 2021.

The reformers' argument

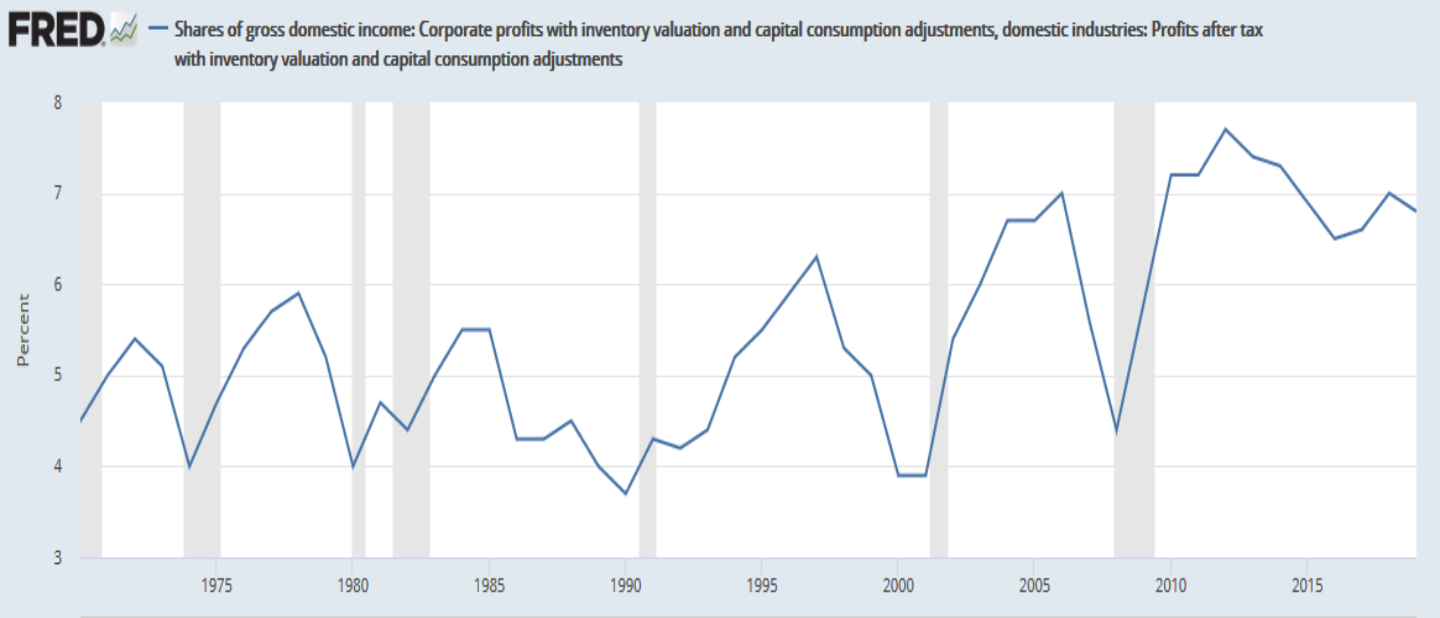
- . . . and as a percentage of GDP



Source: U.S. Bureau of Economic Analysis, Corporate Profits After Tax (without IVA and CCAdj) [CP], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/CP, August 1, 2021.

The reformers' argument

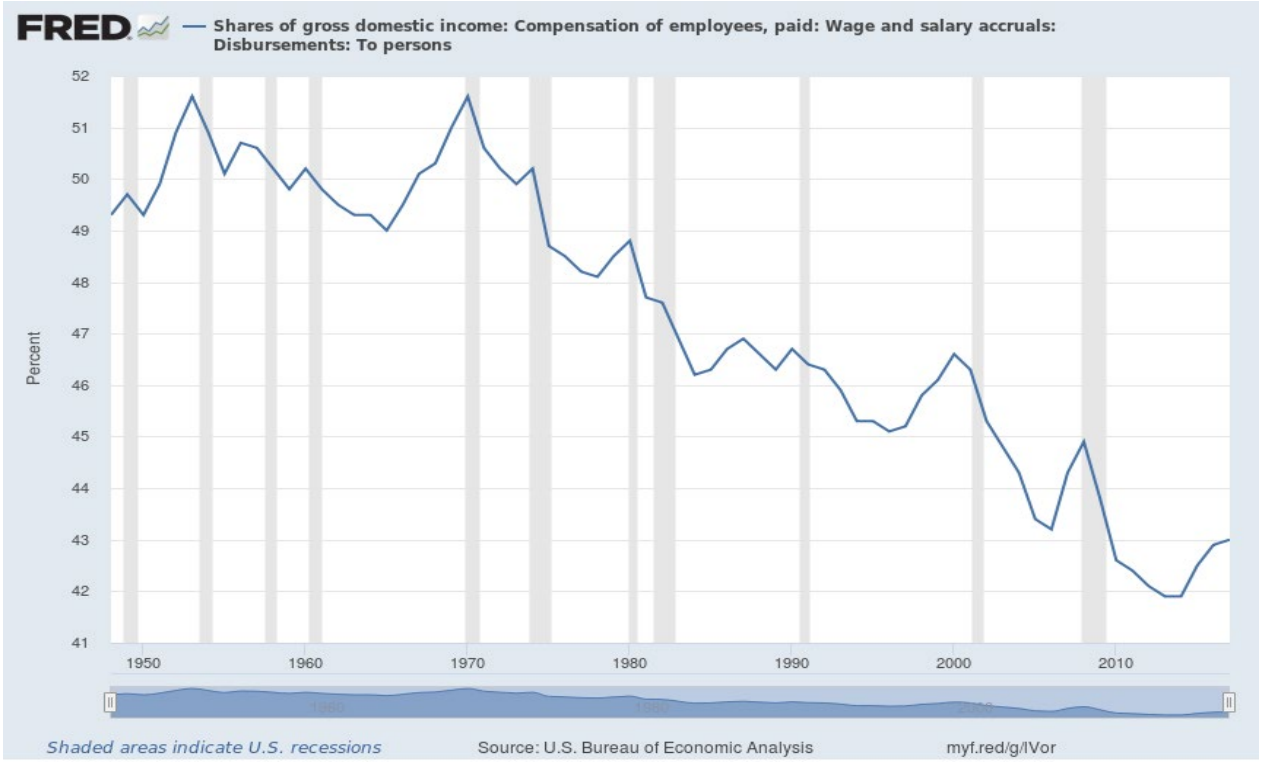
- Corporate profits account for an increasing share of gross domestic income



Source: U.S. Bureau of Economic Analysis, Shares of gross domestic income: Corporate profits with inventory valuation and capital consumption adjustments, domestic industries: Profits after tax with inventory valuation and capital consumption adjustments [W273RE1A156NBEA], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/W273RE1A156NBEA, August 2, 2021.

The reformers' argument

- . . .while the labor share of gross domestic income has dramatically declined

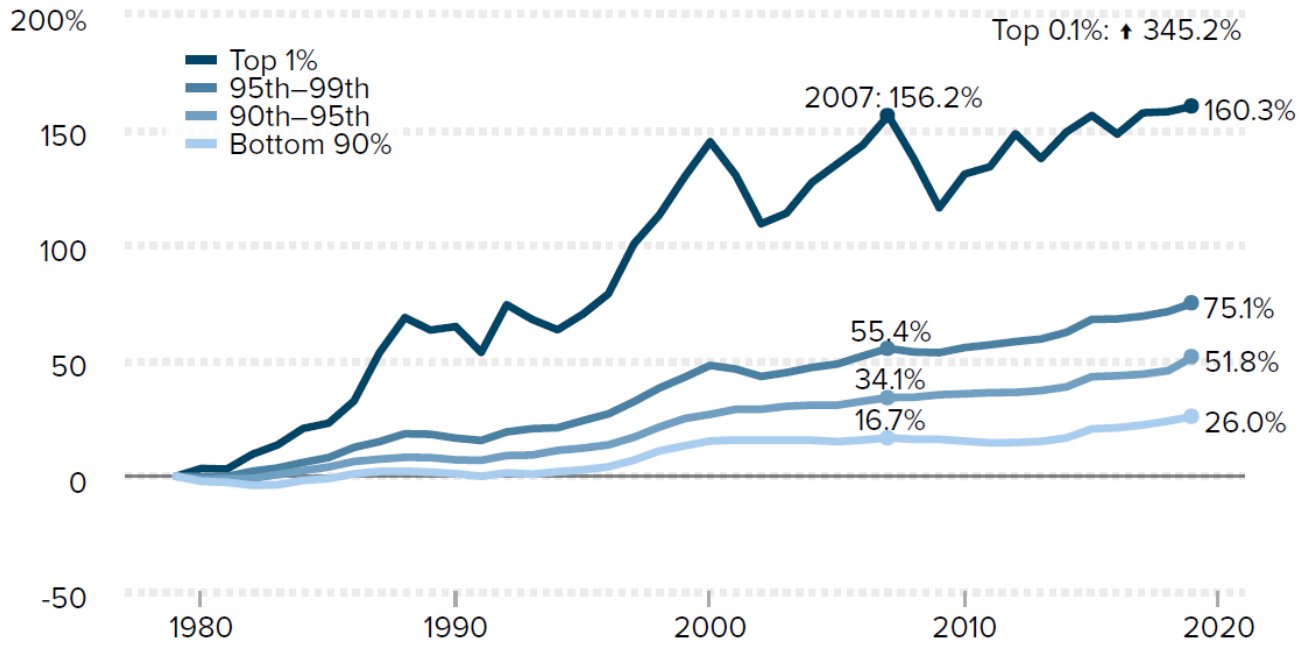


Source: U.S. Bureau of Economic Analysis, Shares of gross domestic income: Compensation of employees, paid: Wage and salary accruals: Disbursements: to persons [W270RE1A156NBEA], *retrieved from* FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/W270RE1A156NBEA, July 31, 2021.

The reformers' argument

- Real wages for average workers have largely stagnated

Cumulative percent change in real annual wages, by wage group, 1979–2019

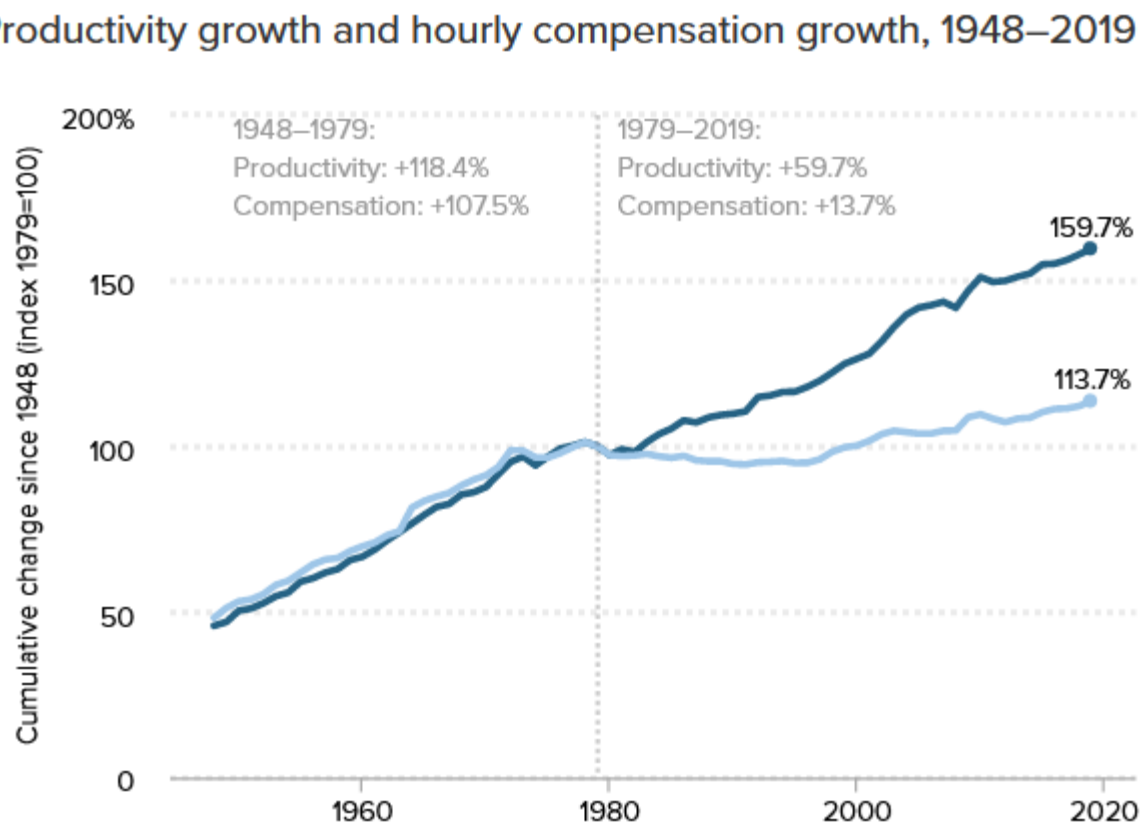


	CAGR
Top 0.1%	3.80%
Top 1%	2.42%
95th-99th	1.41%
90th-95th	1.05%
Bottom 90th	0.58%

Source: Lawrence Mishel & Josh Bivens, Identifying the Policy Levers Generating Wage Suppression and Wage Inequality 8 (Economic Policy Institute May 13, 2021), available at https://files.epi.org/uploads/215903.pdf.

The reformers' argument

- Moreover, workers are not being compensated with productivity growth

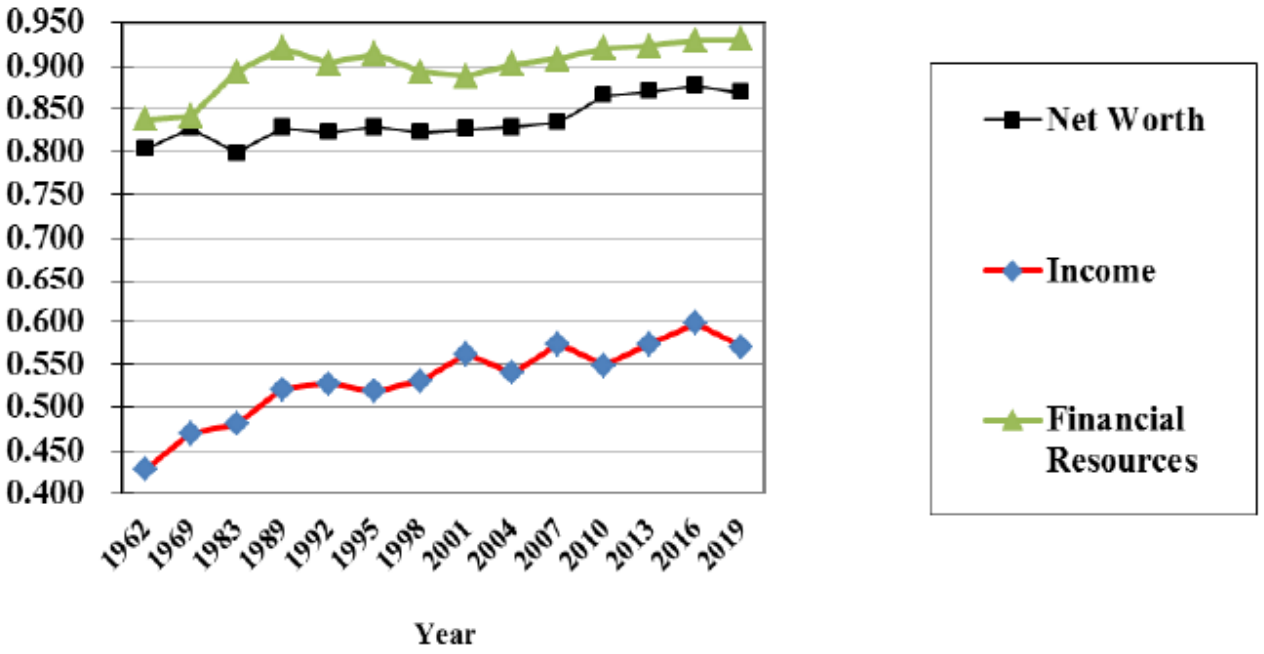


Source: Lawrence Mishel, Growing Inequalities, Reflecting Growing Employer Power, Have Generated a Productivity–Pay Gap since 1979 (Economic Policy Institute (Sept. 2, 2021), https://www.epi.org/blog/growing-inequalities-reflecting-growing-employer-power-have-generated-a-productivity-pay-gap-since-1979-productivity-has-grown-3-5-times-as-much-as-pay-for-the-typical-worker/.

The reformers' argument

- Income inequality correspondingly has grown increasingly worse . . .

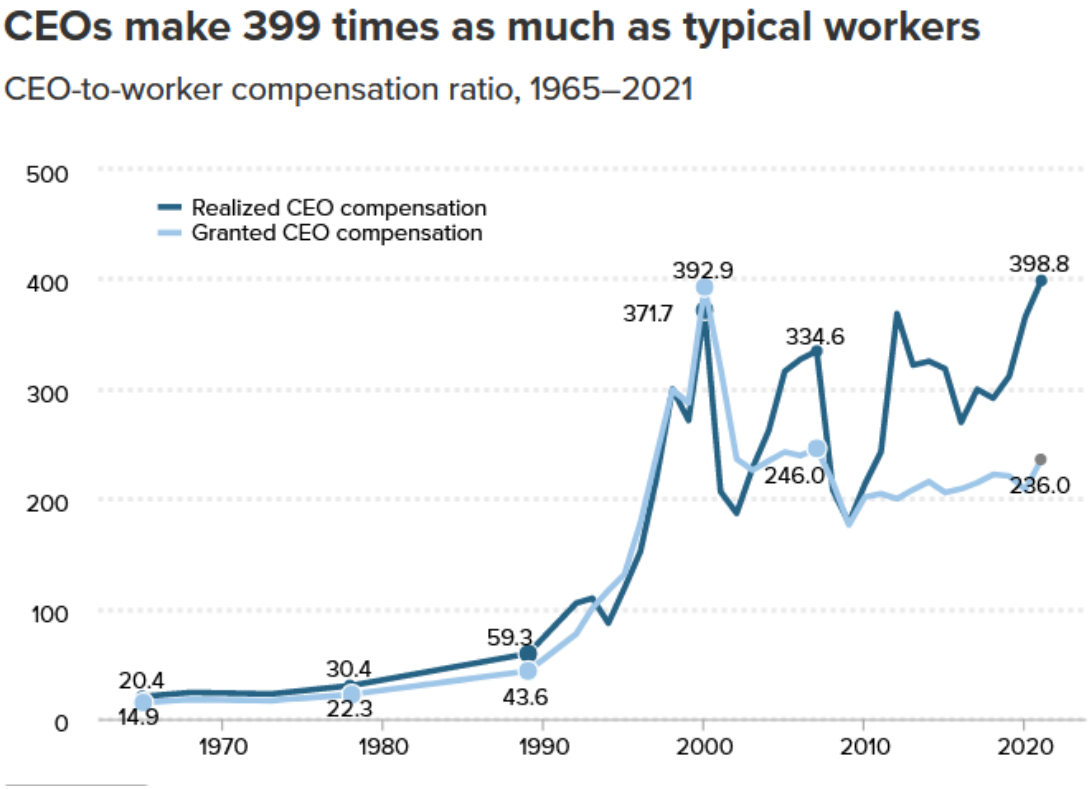
The higher the Gini coefficient, the greater the inequality



Source: Edward N. Wolff, Household Wealth Trends In The United States, 1962 to 2019: Median Wealth Rebounds... But Not Enough 71 (Figure 4) (NBER Working Paper No. 28383, Jn. 2021), http://www.nber.org/papers/w28383.

The reformers' argument

- . . . with CEOs on average now making 399x more than typical workers



Source: Josh Bivens and Jori Kandra, *CEO pay has skyrocketed 1,460% since 1978*, at 10 (Economic Policy Institute Oct. 4, 2022), *available at* https://www.epi.org/publication/ceo-pay-in-2021/.

The reformers' argument

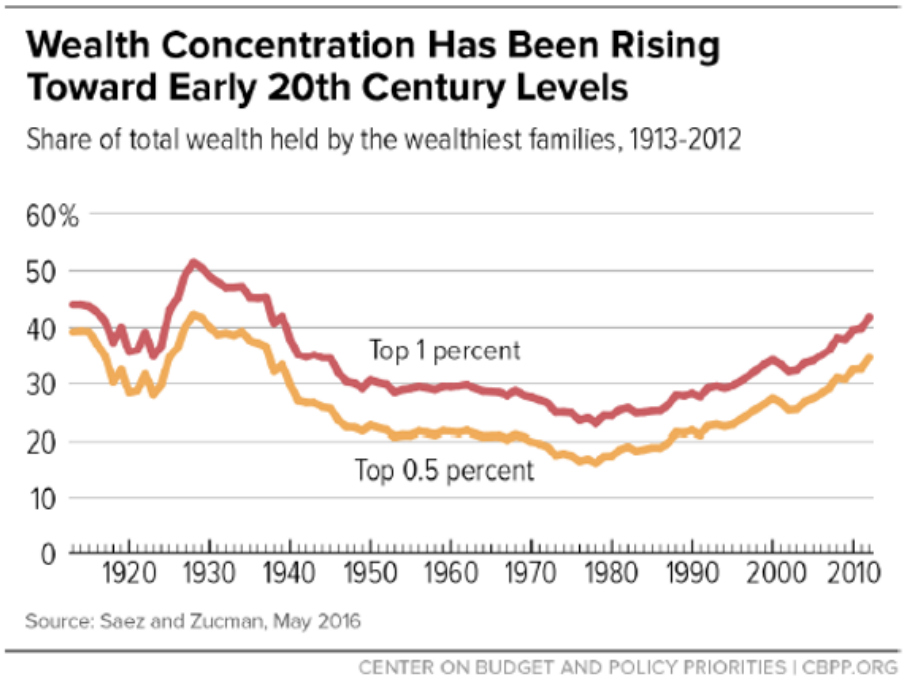
- The "American dream" of advancement over generations is declining

Percentage of U.S Children Earning More than Their Parents at Age 30 by Year of Birth, 1940-1984

Source: Peterson Institute for International Economics, How to Fix Economic Inequality? 7 (figure 7) (2020), https://www.piie.com/microsites/how-fix-economic-inequality.

The reformers' argument

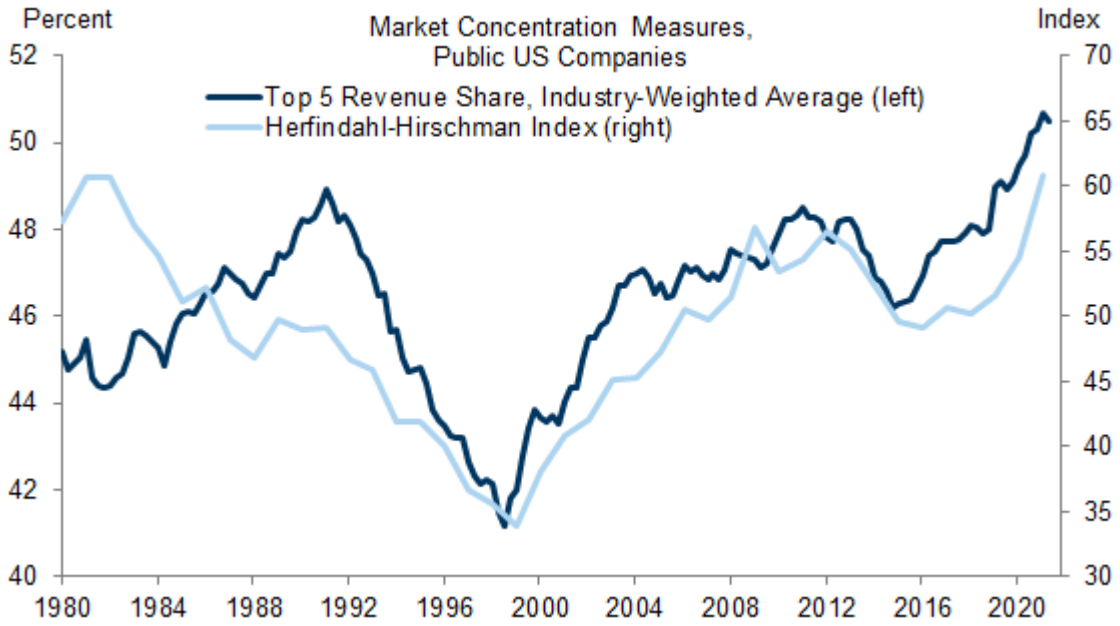
- Wealth is even more concentrated than income, with wealth inequality approaching the level of the 1920s



Source: Chad Stone, Danilo Trisi, Arloc Sherman & Jennifer Beltrán, A Guide to Statistics on Historical Trends in Income Inequality 16 (figure 6) (Center on Budget and Policy Priories updated June 13, 2020), https://www.cbpp.org/research/poverty-and-inequality/a-guide-to-statistics-on-historical-trends-in-income-inequality.

The reformers' argument

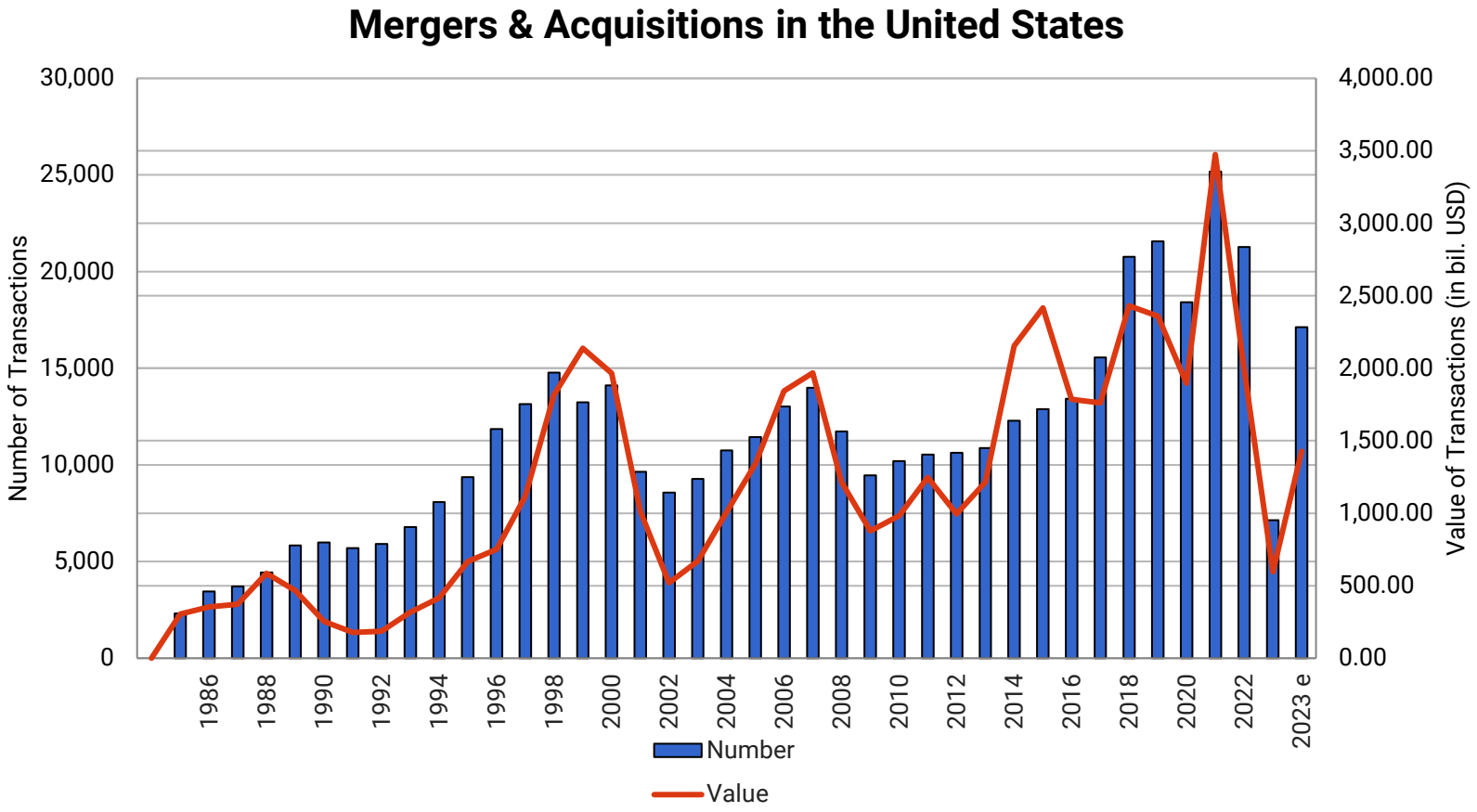
- Industrial concentration has been steadily increasing since the mid-1990s



Source: Joseph Briggs & Alec Phillips, *Concentration, Competition, and the Antitrust Policy Outlook* ex. 1 (Goldman Sachs US Economics Analyst July 18, 2021)

The reformers' argument

- Acquisitions are a significant source of increased concentration . . .



Source: Institute for Mergers, Acquisitions and Alliances (IMAA), M&A Statistics, https://imaa-institute.org/m-and-a-statistics-countries/#Mergers-Acquisitions-United-States-of-America (last visited Aug. 29, 2023).

The reformers' argument

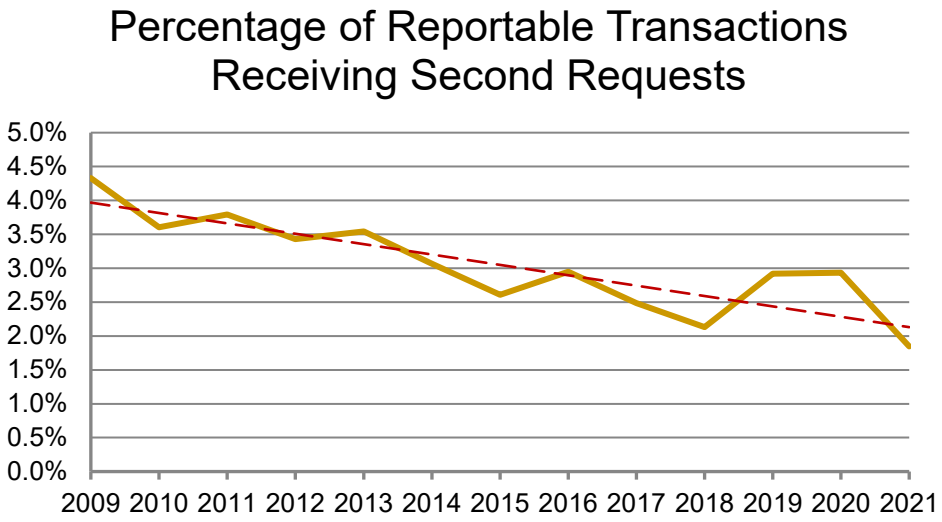
- . . . and some acquisitions have been "megadeals" . . .

Rank	Date	Acquiror	Target	Value (bil. USD)
1	2000	America Online Inc	Time Warner	164.747
2	2013	Verizon Communications Inc	Verizon Wireless Inc	130.298
3	1999	Pfizer Inc	Warner-Lambert Co	89.168
4	2016	AT&T Inc	Time Warner Inc	85.408
5	1998	Exxon Corp	Mobil Corp	78.946
6	2006	AT&T Inc	BellSouth Corp	72.671
7	1998	Travelers Group Inc	Citicorp	72.558
8	2001	Comcast Corp	AT&T Broadband & Internet Svcs	72.041
9	2018	Cigna Corp	Express Scripts Holding Co	69.770
10	2014	Actavis PLC	Allergan Inc	68.445
11	2017	Walt Disney Co.	21st Century Fox	68.422
12	2009	Pfizer Inc	Wyeth	67.286
13	2015	Dell Inc	EMC Corp	66.000
14	1998	SBC Communications Inc	Ameritech Corp	62.593
15	2015	The Dow Chemical Co	DuPont	62.111
16	1998	NationsBank Corp,Charlotte,NC	BankAmerica Corp	61.633
17	1999	Vodafone Group PLC	AirTouch Communications Inc	60.287
18	2002	Pfizer Inc	Pharmacia Corp	59.515
19	2010	Preferred Shareholders	AIG	58.977
20	2004	JPMorgan Chase & Co	Bank One Corp,Chicago,IL	58.663
21	2016	Bayer AG	Monsanto Co	56.598
22	1999	Qwest Commun Intl Inc	US WEST Inc	56.307
23	2015	Charter Communications Inc	Time Warner Cable Inc	55.638
24	2011	Shareholders	Abbott Laboratories-Research	55.513
25	2009	Vehicle Acq Holdings LLC	General Motors-Cert Assets	55.280

Source: Institute for Mergers, Acquisitions and Alliances (IMAA), M&A Statistics, https://imaa-institute.org/m-and-a-statistics-countries/#Mergers-Acquisitions-United-States-of-America (last visited Aug. 29 2023).

The reformers' argument

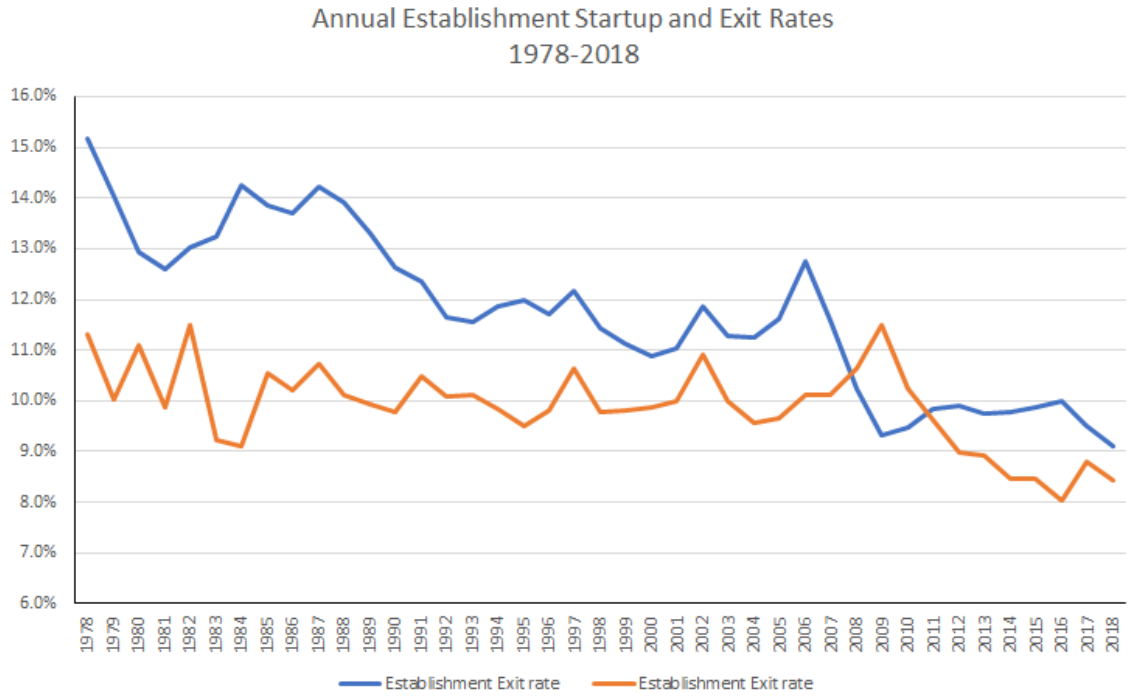
- . . . while HSR Act merger investigations have disproportionately declined



Source: Fed. Trade Comm'n & U.S. Dep't of Justice, Annual Reports to Congress (FY 1979-2021)

The reformers' argument

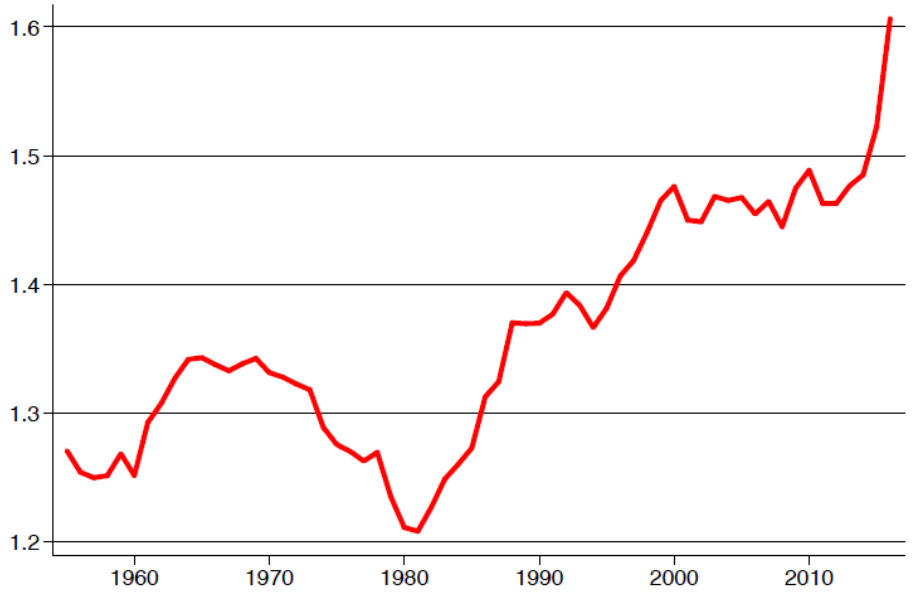
- At the same time, business start-up rates have been declining



Source: U.S. Census Bureau, Business Dynamics Statistics: Establishment Size: 1978-2018, https://data.census.gov/cedsci/table?q=BDSTIMESERIES.BDSESIZE&tid=BDSTIMESERIES.BDSESIZE&hidePreview=true.

The reformers' argument

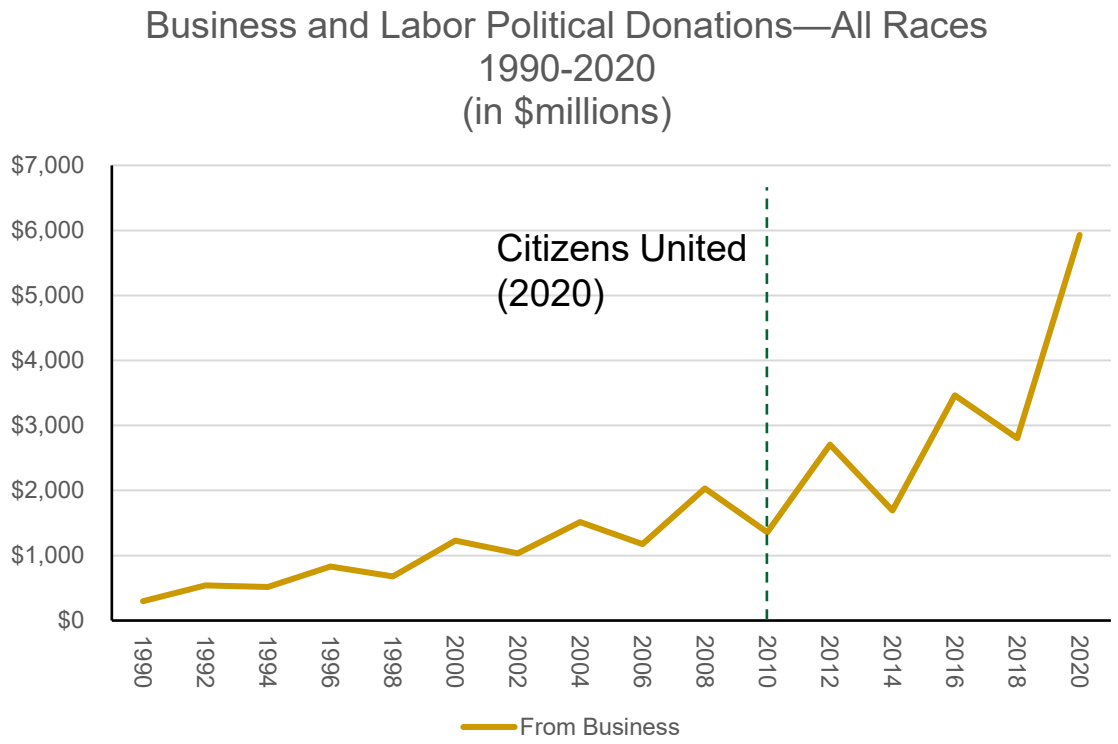
- Average markups have increased three-fold since 1980



Source: Jan De Loecker, Jan Eeckhout & Gabriel Unger, *The Rise of Market Power and the Macroeconomic Implications*, 135 Q.J. Econ. 561, 571 (2020), *cited in* White House, Fact Sheet: Executive Order on Promoting Competition in the American Economy (July 9, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/07/09/fact-sheet-executive-order-on-promoting-competition-in-the-american-economy/.

The reformers' argument

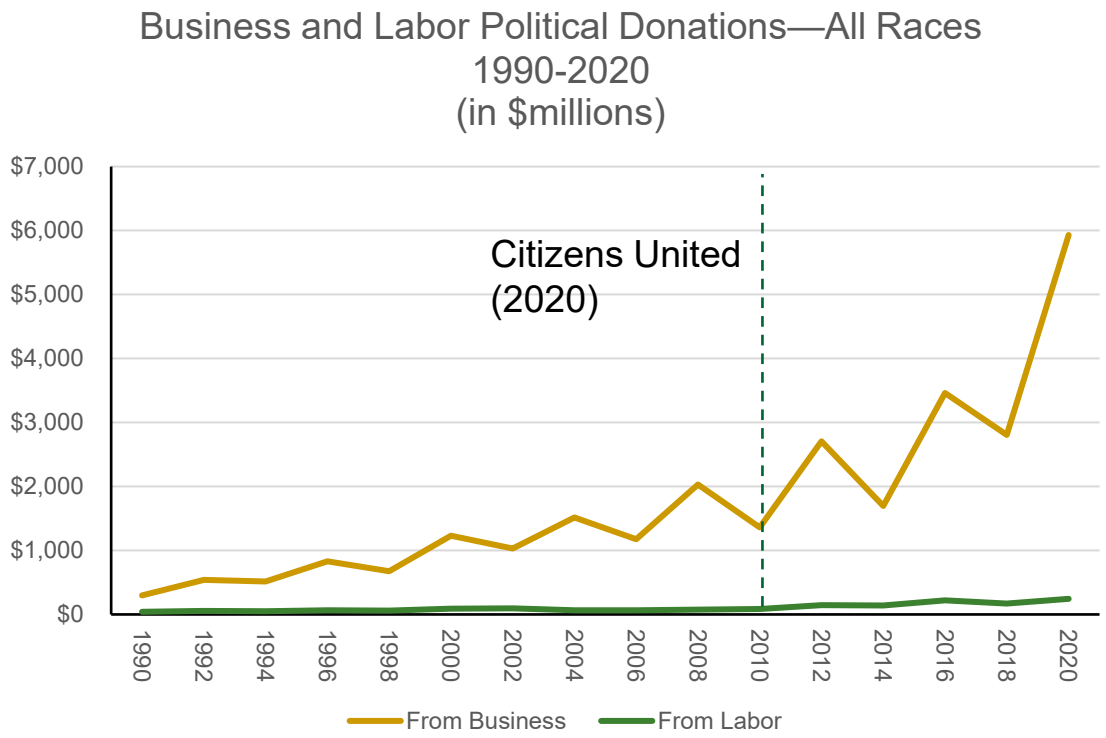
- Corporations are becoming more politically powerful, increasing their political campaign spending . . .



Source: Business-Labor-Ideology Split in PAC & Individual Donations to Candidates, Parties, Super PACs and Outside Spending Groups, https://www.opensecrets.org/elections-overview/business-labor-ideology-split.

The reformers' argument

- . . . and dramatically outspending labor



Source: OpenSecrets.org, Business-Labor-Ideology Split in PAC & Individual Donations to Candidates, Parties, Super PACs and Outside Spending Groups, https://www.opensecrets.org/elections-overview/business-labor-ideology-split.

The reformers' argument

- Bottom line:

The antitrust laws (along with many other laws) need to be reformed

  - Merger antitrust law is a focus of these criticisms since critics believe that merger antitrust law—whether through judicial decisions or prosecutorial elections—failed to stop many mergers and acquisitions that are contributing to the perceived problems

Modern critiques of merger antitrust law

- There are two fundamentally different critiques of modern antitrust law—
  1. The progressive critique
  2. The Neo-Brandeisian antimonopoly movement

The progressive critique

- Basic ideas[1]
  1. Accepts the consumer welfare standard broadened to include suppliers (especially labor)
  2. Assesses anticompetitive effect by comparing consumer welfare outcomes with the challenged conduct against outcomes in the "but for" world where the challenged conduct is prohibited
  3. Views historical enforcement outcomes as failing to identify and so permitting too many anticompetitive mergers and other types of anticompetitive conduct
  4. Believes that market power is typically durable and that markets do not adjust quickly—if at all—to eliminate market power
  5. Views the social harm of underenforcement of the antitrust laws to be greater than the social cost of overenforcement
  6. Would create presumptions to make prima facie proof of anticompetitive effect easier
  7. Very skeptical of any downward pricing pressure defenses to a prima facie case of anticompetitive effect
  8. Very demanding in accepting consent decrees to negate anticompetitive harm

[1] Progressives come in many varieties. These appear to me to represent the core beliefs of progressives generally.

The progressive critique

- Implications for merger antitrust law and enforcement
  1. Would continue to focus on outcomes for consumers
  2. Would also focus on outcomes for suppliers (especially labor)
     - Unclear how progressives would balance consumer benefits from lower prices resulting from lower labor costs
  3. Probably would retain judicial tests for market definition
     - But where direct evidence of anticompetitive effects is available (most likely in consummated transactions), would not require rigorous proof of market definition
  4. Would lower thresholds for challenging horizontal and vertical mergers
  5. Would lower thresholds for challenging acquisitions of actual potential competitors and "nascent" competitors
  6. Would lower standards for finding acquisitions by monopolists violate Section 2
  7. Would likely shift the burden of proof to merging parties where the acquiring firm is sufficiently large ("superfirms")
     - That is, merging parties would bear the burden of persuasion of proving that the transaction is not anticompetitive

The progressive critique

- Implications for merger antitrust law and enforcement
  8. Would continue—and probably increase—hostility to defenses that offset anticompetitive effect
  9. Would continue practice of accepting consent decree to "fix" problem
     - BUT would impose a heavy burden on the parties to prove that the "fix" will in fact negate the anticompetitive concerns, and
     - Would include provisions in consent decrees to make it easier for the government to obtain modifications if the agency concluded after the fact that the original relief did not completely negate the competitive problem

The Neo-Brandeisian "antimonopoly movement"

- Lina Khan's five principles[1]
  1. "Antimonopoly is a key tool and philosophical underpinning for structuring society on a democratic foundation"
     - A functioning democracy depends on checking the political power that comes from private concentrations of economic power
  2. "Antimonopoly is more than antitrust"
     - Antitrust law is just one tool in the antimonopoly toolbox
     - Other tools include, for example, affirmative economic regulation, tax policy, federal spending, trade policy, securities regulation, and consumer protection rules
  3. "Antimonopoly does not mean 'big is bad'"
     - Because of economies of scale or scope or network effects, some industries tend naturally to monopoly
     - In such cases, the answer is not to break these firms up, but to design a system of public regulation that—
       - Prevents the executives who manage this monopoly from exploiting their power, *and*
       - Creates the right incentives to ensure that companies provide the best value for customers and workers

[1] Lina Khan, *The New Brandeis Movement: America's Antimonopoly Debate*, 9 J. Eur. Competition L. & Prac. 131 (2018). The five principles are verbatim from the article. The commentary is largely my interpretation. Khan is now Chair of the Federal Trade Commission. She has the strong support both the two other Democrat commissioners, which gives Khan a working majority even if all five commissioner seats were filled. However, two seats are currently vacant.

The Neo-Brandeisian "antimonopoly movement"

- Lina Khan's five principles
  4. "Antimonopoly must focus on structures and processes of competition, not outcomes"
     - The antitrust laws should focus on creating and maintaining a *competitive process*, which in turn will produce just outcomes
       - WDC: This is a very Rawlsian perspective[1]
     - A competitive process requires atomistically structured markets
     - Focusing on market outcomes (such as consumer welfare) is fundamentally wrong
       - Cannot specify which outcome is the "right" ("just") outcome (that is, cannot identify the proper social welfare function)
       - Cannot reliably identify the relevant outcomes in the real world or predict them in the but-for world
  5. "There are no such things as market 'forces'"
     - Markets are structured by law and policy, not economic "natural forces"
     - The legal regime could, for example, limit the size of firms—and hence their dominance in the marketplace—regardless of economies of scale or scope or network effects

The key driver for the Neo-Brandeisian approach is the elimination of significant political and economic power by firms in the economy—this focuses on maintaining competitive structures and processes, not competitive market outcomes

[1] *See* JOHN RAWLS, A THEORY OF JUSTICE (rev. ed. 1999).

The antimonopoly movement deconstructed

- Premises
  1. The democracy premise
  2. The economic premise
  3. The individual freedom premise
  4. Line drawing

The antimonopoly movement deconstructed[1]

- Premises
  1. The democracy premise
     - A functioning democracy depends on checking private political power
     - Private concentrations of economic power create political power and undermine democracy
     - Enormous corporations, in particular, wield political power through a variety of means, including lobbying, financing elections, staffing government, and funding research
     - Pursuing democratic values sometimes can require some sacrifice of economic efficiency and consumer welfare

[1] *A caution*: Proponents of the Neo-Brandeisian antimonopoly movement are not completely homogeneous in their philosophies or policy prescriptions. These slides are my effort to distill the movement's central tenets recognizing that there remains considerable room for interpretation, especially in the policy prescriptions.

The antimonopoly movement deconstructed

- Premises
  2. The economic premise
     - The competitive process provides the lowest prices, greatest output, highest quality, largest consumer choice, and highest rate of technological innovation
     - The competitive process also yields a fair and equitable distribution of surplus between consumers and producers and of profits among large and small firms
     - The competitive process depends on absence of private individual or collective concentrations of economic power

The antimonopoly movement deconstructed

- Premises
  3. The individual freedom premise
     - An atomistic economy provides—
       - Consumers with the maximum freedom to choose what products and services to buy and the suppliers from whom they deal
       - Workers with the maximum freedom to choose with whom to work and under what conditions and to earn a just wage
       - Small business (including new entrants) the maximum freedom to compete and innovate and to earn fair profits
     - Private concentrations of economic power limit this freedom
     - Maximizing individual freedom sometimes can require some sacrifice of economic efficiency and consumer welfare

The antimonopoly movement deconstructed

- Premises
  4. Line drawing
     - In principle, there should be a line that determines when private concentrations of economic power become unacceptable
     - In practice, wherever the line, some concentrations of economic power—including some in the hands of individual “superfirms”—are so over the line that they are readily identifiable
     - So deal with the egregious cases first and worry about line drawing and close cases later

The antimonopoly movement deconstructed

- Implications for merger antitrust law and enforcement
  - The standard of legality
    - The focus should be on market structure:
      - Preventing the creation of or increase in private concentrations of economic power and on reducing existing concentrations through breakups or otherwise
      - Concentration on the buy-side can be as problematic as concentration on the sell-side
    - Not on performance:
      - Unlawfulness should not depend on comparing outcomes with and without the challenged conduct, whether it is price, output, quality, or the rate of innovation
  - Market definition
    - Markets do not need to be identified rigorously—simple (noneconomic) tests akin to the *Brown Shoe* approach are sufficient to identify economic concentrations of power and dominant firms
    - In particular, the hypothetical monopolist test should be discarded
      - Much too narrow in focus: Only attempts to determine if firms can profitably increase price
      - Costly yet unreliable to implement in practice
      - Often determines the outcome of merger antitrust litigation
  - Economic concentration
    - Five (six?) meaningful firms in an industry is a lower bound for economic concentration for enforcement purposes

The antimonopoly movement deconstructed

- Horizontal mergers
  - 6-to-5 mergers should be presumptively unlawful
  - An acquisition by a firm with a 30% or greater market share of a firm with 1.67% or more should be presumptively unlawful without more (would yield an HHI change of at least 100)
- Potential competition
  - The time horizon for evaluating potential competition should be the foreseeable future, not two or three years
  - Dominant firms and the largest firms in a concentrated industry should be prohibited from acquiring either—
    - Actual potential competitors that have some prospect now or in the future of entering the market *or*
    - "Nascent" competitors
      - Nascent competitors are firms that have the prospect (usually because of the new technology they are developing), however small and however distance in the future, of significantly undermining the acquiring firm's dominance
      - The nascent competitor may do this on its own or through an acquirer or a third-party licensee
- Vertical mergers
  - Anticompetitive when the merger will give the combined firm the *ability* to deny or anticompetitively price an important input or output (such as a distribution channel) to competitors
  - The *incentive* of the combined firm to foreclose a competitor or raise its rivals' costs—an essential element under the consumer welfare standard—would not be relevant

The antimonopoly movement deconstructed

- Conglomerate mergers
  - Anticompetitive when the merger creates a sufficiently economically or politically powerful firm, regardless of consumer effects
- Modern entrenchment
  - "Entrenched" dominant firms with durable near-monopoly positions—think the high-tech MAMAA firms (Microsoft, Alphabet, Meta, Amazon, and Apple)—should be prohibited from acquiring any business, assets, or technology that has the potential of further entrenching the firm
- Efficiencies
  - Not a defense to a merger
  - Likely viewed as anticompetitive if they give the combined firm a competitive advantage over rivals and enable it to achieve or maintain sufficient economic or political power

A Concluding Thought on the Courts

The courts as a brake on antitrust reform

- Strong judicial precedent reinforces the current "consumer welfare" approach
  - The Supreme Court has repeatedly cited consumer welfare as the lens through which to apply the antitrust laws over the last 40+ years
  - The Areeda & Hovenkamp treatise—a book that almost defines the current approach—is by far the principal nonjudicial authority cited by the courts and adopts the consumer welfare standard
  - The reform movements have nothing comparable
- Generally, a conservative bench on antitrust
  - Almost all judges have grown up in the current antitrust regime
  - 6 of 9 (66.6%) Supreme Court justices were appointed by Republican presidents
  - 91 of 179 (50.1%) federal court of appeals judges were appointed by Republican presidents[1]
  - 341 of 677 (50.4%) district court judges were appointed by Republican presidents

[1] Data from Circuit Status, BallsandStrikes.com (as of July 18, 2023).

The courts as a brake on antitrust reform

- Most importantly, the Supreme Court is conservative with respect to antitrust
  - At least four justices are interested in antitrust cases and would be likely to vote for cert with respect to any significant doctrinal move in the lower courts (including in § 1292(b) appeals)
  - Could easily see six or more justices reaffirming the traditional approach
    - *AMG Capital* (June 21, 2021) (9-0): FTC Act § 13(b) does not authorize FTC to seek monetary relief[1]
    - *Alston* (Apr. 22, 2021) (9-0): Affirming judgment for college players in challenge to NCAA compensation restrictions using the traditional approach
    - *Amex* (June 25, 2018) (5-4): Affirming the Second Circuit's finding that the plaintiffs—the United States and several states—failed to make out a prima facie case of anticompetitive effect
      - Since *Amex* was decided, Justice Breyer, who wrote the dissent, and Justice Ginsberg, who joined the dissent, were replaced by Justices Jackson and Justice Barret
  - Conservative majority would likely grant cert and overturn any FTC rule making under Section 5 that departs materially from the current case law as contrary to the "major questions" or "non-delegation" doctrines

[1] AMG Cap. Mgmt., LLC v. FTC, 141 S. Ct. 1341 (2021).
[2] NCAA v. Alston, 141 S. Ct. 2141 (2021).
[3] Ohio v. American Express Co., 138 S. Ct. 2274 (2018).

CLASS 4 SLIDES

Unit 4. The DOJ/FTC Merger Review Process

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September 4, 2024

Topics

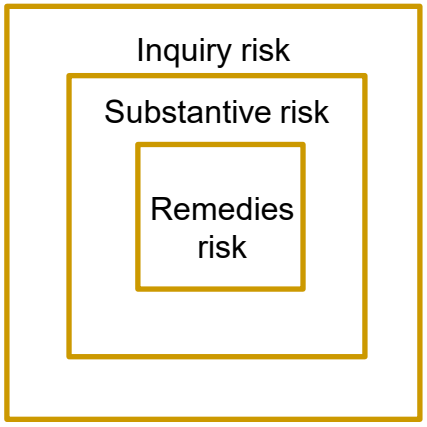
- Inquiry risk: HSR Act merger reviews
- Premerger notification
- Preparing for an investigation
- Initial waiting period investigations
- Second request investigations
- DOJ/FTC merger review outcomes

Inquiry Risk: HSR Merger Reviews

Recall the three types of antitrust risks

1. Inquiry risk
   - The risk that legality of the transaction will be put in issue
2. Substantive risk
   - The risk that the transaction is anticompetitive and hence unlawful
3. Remedies risk
   - The risk that the transaction will be blocked or restructured

Risks are nested



Inquiry risk

- There are two fundamental types of inquiry risk
  1. The risk of an HSR merger review
  2. The risk of a merger antitrust litigation

In this unit, we will examine HSR merger review risk
In Unit 6, we will examine merger litigation risk

Framing inquiry risk

- There are two factors to consider in assessing incentive risk—
  1. Does the putative challenger have the ***means*** to initiate an inquiry?
  2. Does the putative challenger have the ***incentive*** to initiate an inquiry?

---

1. The means: Two potential means—
   a. The ability to initiate a precomplaint investigation
   b. The ability to initiate litigation
2. The incentive calculus: Three questions—
   a. What is the reward/payoff to success?
   b. What is the probability of success?
   c. What is the cost of raising the issue?

Federal enforcement agencies

- *Ability*: Causes of action and forums
  - DOJ
    - Injunctive relief under Clayton Act § 15 in federal district court
    - Treble damages under Clayton Act § 4A in federal district court for injuries (overcharges) to federal agencies
  - FTC
    - Permanent injunctive relief under Clayton Act § 11 in an FTC administrative adjudicative proceeding
    - Preliminary and permanent injunctive relief under FTC Act § 13(b) in federal district court
      - Only a federal court may issue a preliminary injunction—the FTC has no power to issue interim relief
- *Incentive*: The DOJ/FTC are by far the most likely challengers
  - Both charged with enforcing Section 7 of the Clayton Act
  - Are large, experienced in merger antitrust enforcement, and reasonably well-funded
  - Have the benefit of the HSR Act—
    - Premerger reporting
    - Waiting period before the merger can be consummated
    - Precomplaint investigation tools (second requests, CIDs)
  - Have litigation experience (and young attorneys eager to litigate)
  - Do not have to show threatened or actual injury to obtain injunctive relief

The Premerger Notification Process

HSR Act

- Hart-Scott-Rodino Act[1]
  - Enacted in 1976 and implemented in 1978
  - Applies to large mergers, acquisitions and joint ventures
  - Imposes reporting and waiting period requirements
    1. *Preclosing reporting* to both DOJ and FTC by each transacting party
    2. *Post-filing waiting period* before parties can consummate transaction
  - Authorizes investigating agency to obtain additional information and documents from parties during waiting period through a *second request*
  - Designed to alert DOJ/FTC to pending transactions to permit them to investigate—and, if necessary, challenge—a transaction prior to closing
    - *Idea*: Much more effective and efficient to block or fix anticompetitive deal prior to closing than to try to remediate it after closing
  - Not jurisdictional: Agencies can review and challenge transactions—
    - Falling below reporting thresholds,
    - Exempt from HSR reporting requirements, *or*
    - "Cleared" in a HSR merger review—no immunity attaches to a transaction that has successfully gone through a HSR merger review

[1] Clayton Act § 7A, 15 U.S.C. § 18a.

Basic prohibition

- Section 7A(a)

> [N]o person shall acquire, directly or indirectly, any voting securities or assets of any other person, unless both persons (or in the case of a tender offer, the acquiring person) **file notification** . . . and the **waiting period** . . . has expired . . . .

- A reportable transaction is one that—
  1. Involves the ***acquisition*** of ***voting securities*** or ***assets***
  2. Satisfies the ***dollar thresholds*** for ***prima facie reportability***
  3. Does not fall into one of the ***exemptions*** provided by the HSR Act or implemented by the HSR Rules
- Dollar thresholds are adjusted annually for inflation

Acquisition of voting securities or assets

- The HSR Act applies only to acquisitions of *voting securities* or *assets*
- "Voting securities"
  - "[S]ecurities which at present or upon conversion entitle the owner or holder thereof to vote for the election of directors of the issuer"[1]
- "Assets"
  - No special definition
  - The acquisition of a 50% or greater ownership interest in a non-corporate entity (such as a partnership or LLC) is regarded as an acquisition of the entity's underlying assets for HSR Act purposes
  - An exclusive license is regarded as an asset
- "Acquisition"
  - Does not require a formal transfer of legal title
  - Sufficient to obtain a "beneficial interest" in the underlying voting securities or assets
    - What is "beneficial interest"?
    - How can we tell if it has been transferred prior to the transfer of legal title?

The meaning of beneficial interest has not been litigated

[1] 16 C.F.R. § 801.1(f)(1)(i).

Prima facie reportability[1]

Size of transaction*	Prima Facie Reportability
Up to and including $119.5 million	Not reportable
Above $119.5 million up to and including $478.0 million	Reportable if : (1) satisfies the "size of person" test, and (2) no exemption applies Size of person test *Acquiring person* — *Acquired person* $239.0 million (in total assets or annual net sales) and $23.9 million (in total assets or annual net sales of a person engaged in manufacturing) *Or* $239.0 million (in total assets or annual net sales) and $23.9 million (in total assets of a person not engaged in manufacturing) *Or* $23.9 million (in total assets or annual net sales) and $239.0 million (in total assets or annual net sales)
In excess of $478.0 million	Reportable absent an exemption

* Based on the value of voting securities and assets the acquiring person will hold as a result of the acquisition, including the value of any previously acquired voting securities.

[1] *See* Revised Jurisdictional Thresholds for Section 7A of the Clayton Act, 89 Fed. Reg. 7708 (Feb. 5, 2024) (effective Mar. 6, 2024)

Prima facie reportability

- Simple rule

> If the acquiring person will hold ***$119.5 million*** or more of the voting securities or assets of the acquired person, then the acquisition is likely reportable absent an exemption

- A transaction that satisfies the dollar thresholds is called ***prima facie reportable***
- NB: Every year the dollar threshold will be adjusted for inflation

Selected exemptions

- Intraperson
  - Acquiring and acquired person are the same
- Investment
  - Hold no more than 10% of target's outstanding voting securities
    - 15% for certain institutional Investors
  - Acquirer must have a purely passive investment intention
    - Any membership on the board of directors or other involvement in the management of the company (other than voting shares) voids exemption
- Acquisitions of non-U.S. assets
  - Must not generate sales in or into the U.S. of more than $119.5 million
- Acquisitions of non-U.S. voting securities by U.S. persons
  - Issuer does not have assets in the U.S. or sales in or into the U.S. over $119.5 million
- Acquisitions of non-U.S. voting securities by non-U.S. persons that either
  - Do not confer control over the target, or
  - Do not involve assets in the U.S. or sales in or into the U.S. over $119.5 million

Notification thresholds

- An otherwise reportable transaction is not subject to the reporting and waiting period requirements of the HSR Act if
  1. The reporting and waiting period requirements were satisfied within the last five years for a prior acquisition, *and*
  2. The pending acquisition will not cause the acquiring person to cross a notification threshold

Notification thresholds[1]
$119.5 million
$239.0 million
$1.1195 million
25% of the voting securities if their value exceeds $2.39 billion
50% of the voting securities if their value exceeds $119.5 million

[1] *See* Revised Jurisdictional Thresholds for Section 7A of the Clayton Act, 89 Fed. Reg. 7708 (Feb. 5, 2024) (effective Mar. 6, 2024).

Filing fees

2022		2024[2]	
Value of Transaction[1]	Filing Fee	Value of Transaction[1]	**Filing Fee**
≤ $101.0 million	No filing required	<$173.3 million	$30,000
> $101.0 million but < $202.0 million	$45,000	$173.3 million - <$536.5 million	$100,000
≥ $202.0 million but < $1.0098 billion	$125,000	$536.5 - <$1.073 billion	$260,000
≥ $1.0098 billion	$280,000	$1,073 billion - <$2.146 billion	$415,000
		$2.146 billion - <$5.365 billion	$830,000
		$5.365 billion or more	$2,335,000

- Paid by the purchaser, unless the parties agree to a different arrangement (e.g., split the fee)

[1] *See* Revised Jurisdictional Thresholds for Section 7A of the Clayton Act, 87 Fed. Reg. 3541 (Jan. 24, 2023) (effective Feb. 23, 2022).
[2] *See* Revised Jurisdictional Thresholds for Section 7A of the Clayton Act, 89 Fed. Reg. 7708 (Feb. 5, 2024) (effective Mar. 6, 2024). Congress changed the baseline of the filing fees in the Merger Filing Fee Modernization Act of 2022, contained in the Consolidated Appropriations Act of 2023, Public Law 117–328, Div. GG, 136 Stat. 4459, ____ (Dec. 29, 2022).

HSR Act filing: The prescribed form

The FTC has proposed rule changes that, if finalized, would significantly change the nature and amount of information a filing person would be required to submit in an HSR premerger notification.[1]

The final rules are likely to be issued in 2024 Q4 with a delayed effective date. The final rules almost surely will be challenged in court as beyond the FTC's authority to promulgate.

Since the final rules may be substantially different from the proposed rules, we are not going to cover the proposed rules in class. But I have included an appendix at the end of the class notes with a summary of the major proposed changes.

[1] *See* Fed. Trade Comm'n, Premerger Notification; Reporting and Waiting Period Requirements, 88 Fed. Reg. 42178 (June 29, 2023) (to be codified at 16 C.F.R. Pts. 801-803); Press Release, Fed. Trade Comm'n, FTC and DOJ Propose Changes to HSR Form for More Effective, Efficient Merger Review (June 27, 2023).

HSR Act filing: The current form

- Both the acquiring and acquired persons must submit their own filing on a form prescribed by the FTC's regulations
- Key information required:
  1. Transaction documents (e.g., stock purchase agreement)
  2. Annual reports and financial statements
  3. Revenues by North American Industry Classification System (NAICS) codes
  4. Corporate structure information
     - Majority-owned subsidiaries
     - Significant minority shareholders
     - Significant minority shareholdings
  5. "4(c)" and "4(d)" documents

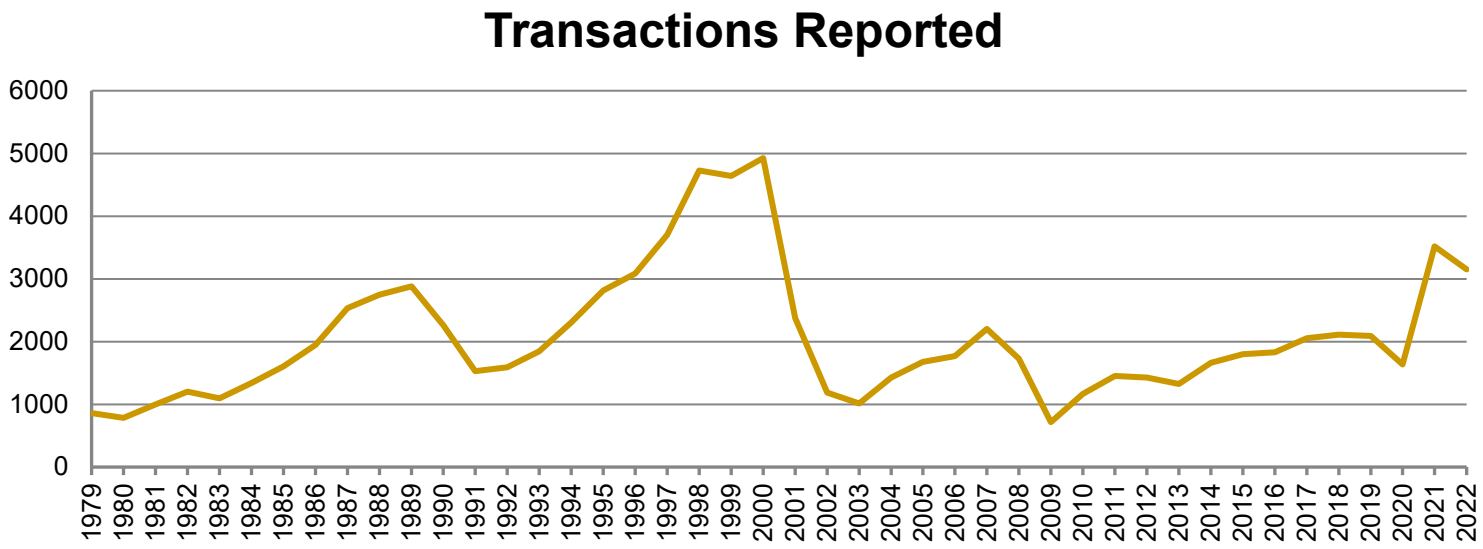
These are the only parts of the filing that really matter

- Uses a prescribed form: Requires no—
  - Market definition
  - Calculation of market shares or market concentration statistics
  - Presentation of any antitrust analysis or defense

HSR Act filing

- 4(c) and 4(d) documents
  - 4(c) documents: four requirements—
    1. Studies, surveys, analyses or reports
    2. Prepared by or for officers or directors of the company (or any entities it controls)
    3. That analyze the transaction
    4. With respect to markets, market shares, competition, competitors, potential for sales growth, or expansion into product or geographic markets
  - 4(d) documents: three types—
    1. Confidential Information Memoranda ("CIM")
    2. Third party advisor documents
    3. Synergy and efficiency documents
  - Failure to provide all 4(c) and 4(d) documents
    - Makes the HSR filing ineffective, so that the waiting period never started
      - Usually discovered by investigating agency in the document production in a second request
      - Agencies have required parties to refile and go through the entire process (including a second second request)
    - Subjects the parties to daily civil penalties (fines) from the time they close their transaction until they make a corrective filing and observe the required waiting period

HSR Act notifications



Source: Fed. Trade Comm'n & U.S. Dept. of Justice, Hart-Scott-Rodino Annual Report Fiscal Year 2022, at App. A, and prior annual reports.

Statutory waiting periods

- General rules
  - Cannot close a reportable transaction until the waiting period is over
  - The duration of the waiting period is prescribed by the HSR Act
- Initial waiting period
  - 30 calendar days generally
  - 15 calendar days in the case of—
    - a cash tender offer, *or*
    - acquisitions under § 363(b) of bankruptcy code
- Extension of waiting period
  - Waiting period extended by the issuance of a second request in the initial waiting period
  - Waiting period extends through—
    - Compliance by all parties with their respective second requests
    - PLUS *final waiting period* of 30 calendar days
      - 10 calendar days in case of a cash tender offer

Early termination

- The investigating agency may grant *early termination* of a waiting period at any time
  - During the initial waiting period
  - Before compliance with the second requests
  - During the final waiting period
- BUT—
  - The Biden enforcement agencies have suspended, whether as a matter of policy or practice, granting early terminations since mid-2021
  - According to the FTC website, the last early termination was granted on July 21, 2021[1]

[1] *See* Fed. Trade Comm'n, Legal Library: Early Termination Notices (accessed August 29, 2024).

HSR Act violations

- HSR Act prohibition

> "[N]o person shall acquire, directly or indirectly, any voting securities or assets of any other person" in a reportable transaction without observing the filing and waiting period requirements[1]

  - Recall that the HSR regulations provide that a person holds voting securities or assets when it has a "beneficial interest" in them[2]

- Two basic types of violations
  1. *Failure to file* a reportable transaction and nonetheless closing the transaction
  2. "*Gun jumping*": Acquiring a beneficial interest in the target's assets or voting securities prior to the expiration of the HSR Act waiting period

- Violations can be expensive
  - In 2024, $51,744 per day for every day of the violation—Equals $18.9 million per year[3]
  - Also can put the violator on the radar screen of the agencies for future acquisitions

[1] 15 U.S.C. § 18a(a).
[2] 16 C.F.R. § 801.1(c).
[3] 89 Fed. Reg. 1445 (Jan. 10, 2024) (increasing civil penalty from $50,120 to $51,744 per day effective January 10, 2023, purusuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015, Pub. L. No. 114–74, § 701, 129 Stat. 599 (2015) (requiring a catch-up CPI inflation adjustment from the date of the statute's enactment)).

Preparing for an Investigation

Build your complete defense

- Need to do this prior to the first contact with the investigating staff
  1. Want to make the strongest defense possible at the first substantive encounter with the investigating staff
  2. Do not want to be surprised later by a new fact that undermines the defense
  3. Need buy-in from the client
     - They will eventually have to make the defense themselves before the staff
  4. Need buy-in from the merger partner
     - They too will eventually have to make the defense themselves before the staff

Identify the "face of the deal"

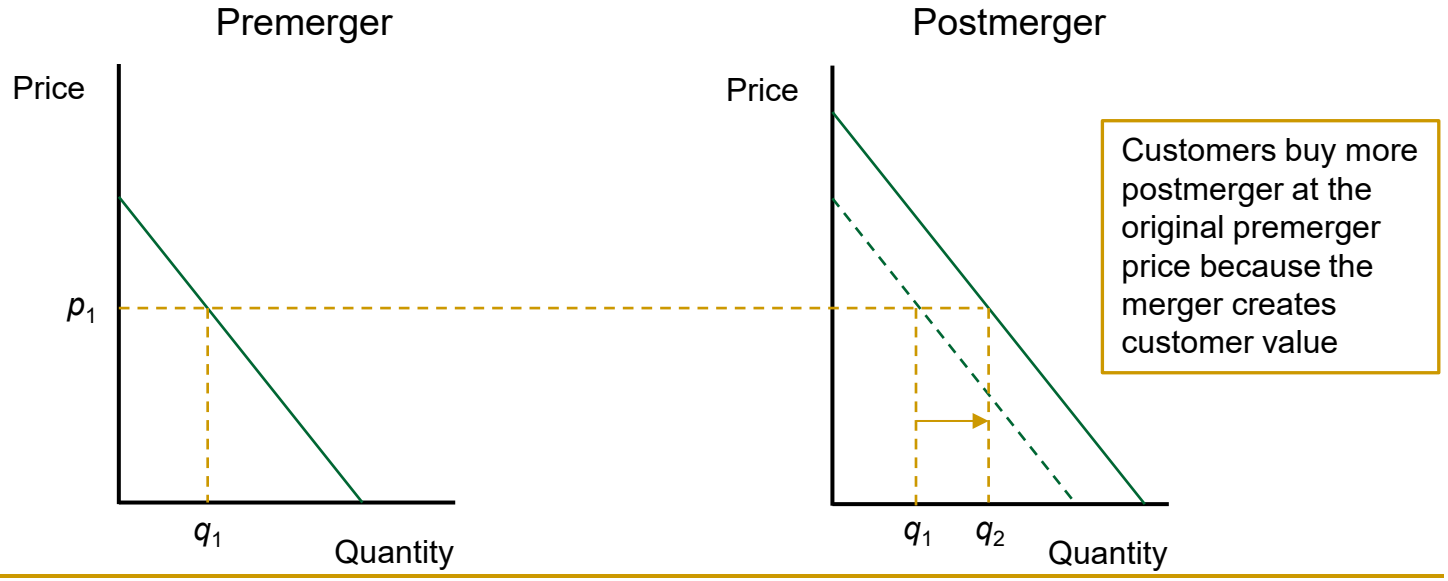
- Which business representative is going to be the most effective in—
  1. Marshalling resources—especially access within the company—to defend the deal?
  2. Leading the defense team within the client?
  3. Working with the merger partner in creating a strong, consistent defense?
  4. Advocating the defense of the deal before the agency?
- Start working with this individual as soon as possible
  - Have to teach them the operational principles of merger antitrust law
  - Need to be involved in every step of building the defense—they need to "own" the defense

Work with the merger partner

- Critical for three reasons—
  1. Need to understand the evidence that is in the hands of the merger partner
  2. Need to ensure that both merging parties are making consistent arguments in defense of the transaction ("singing from the same song sheet")
  3. Need to work with the merger partner on the rollout of the deal to neutralize customer opposition and gain customer support
- Agree in the purchase agreement that the parties will—
  1. Cooperate in the sharing of information
     - Highly confidential information may be shared on an "outside counsel only" basis
  2. Cooperate in the defense of the transaction
     - With the buyer usually taking the lead and making all final strategic decisions
  3. Attend each other's meetings with the investigating agency
- Agencies accept that joint defense meetings between merging parties are protected under the *"common interest" privilege*
- Maneuver to get and begin to prepare the best witnesses from the merger partner

Prepare and implement a customer rollout

- Work with the merging parties to develop and implement a plan to reach out to customers to—
  - Neutralize customer complaints
  - Maximize customer support
- Create a "win-win" argument—
  1. The combined firm will make lots of money
  2. By *shifting the demand curve* to the right by creating a better *customer value proposition*:



Prepare and implement a customer rollout

- Argument must work for customers of both the buyer *and* the target
  - *Remember*: The seller's customers are usually the more difficult to convince that the deal will be good for them
    - They had the opportunity to purchase from the buyer but instead chose to purchase from the target
- Work with the client and the merger partner to find the best people within the company to make the sales pitch for the deal to customers

Prepare and implement a customer rollout

- Form of customer pitch:

> *"You probably have heard about our deal with Company X. We have very excited about it. We think that it is great for our company, great for our shareholders, and great for our customers. You are one of our most valued customers and we hope that you are as excited by benefits the deal will provide to you as we are. Let me tell you why.*
>
> *[FILL IN CUSTOMER BENEFITS]*
>
> *Do you have any questions or concerns about the deal? We would really like to know what they are so that we can address them.*

Initial Waiting Period Investigations

Preliminaries

- Parties must file their respective HSR forms with both the DOJ and the FTC
  - Separate forms are required for each reporting person
- FTC Premerger Notification Office (PNO) review of filings
  - Only for technical compliance on form—no review of substance
    - NB: The PNO is also responsible for providing informal interpretations of the HSR Act and implementing regulations
- Allocated to DOJ or FTC for review through the agency "clearance" process
- Responsible agency assigns transaction to a litigating section for substantive review

"Clearance"

- DOJ and FTC decide which, if either, of the agencies will do an investigation
  - This is called the clearance process
- "Liaison agreement" between DOJ and FTC prevents duplicative investigations
  - If neither DOJ nor FTC want to open a preliminary investigation—PNO grants early termination of the waiting period [Temporarily suspended as of February 4, 2021]
  - If DOJ or FTC (but not both) want to open a preliminary investigation—Requesting agency gets clearance to open investigation
  - If both DOJ and FTC want to open a preliminary investigation—Agencies negotiate to allocate the investigation based on prior experience with the industry or the merging parties (and which agency got the last contested clearance)
- Process can be fraught with strategic behavior by agencies
  - *Extreme case*: "Clearance battle" can last until the last day of the initial waiting period
  - Efforts to reform "clearance" process by allocating specific industries to specific agency have failed miserably
    - Neither agencies nor their respective congressional oversight committees want to relinquish jurisdiction over any type of merger

Initial contact by investigating staff

- Usually occurs 7-10 days after filing
- Three purposes
  1. Inform parties of the investigation and introduce the investigating staff
  2. Request that the parties provide certain information to the staff on a voluntary basis—
     a. Most recent strategic, marketing and business plans
     b. Internal and external market research reports for last 3 years
     c. Product lists and product descriptions
     d. (Perhaps) competitor lists and estimates of market shares
     e. Customer lists of the firm's top 10-20 customers (including a contact name and telephone number)
        - The agencies do not ask for customer lists in transactions involving consumer goods sold at retail, since retail customers are not considered sufficiently sophisticated and reliable in predicting the effect of a merger on them
  3. Invite the parties to make a presentation to the staff on the competitive merits of the transaction

Strategic pointer

Make the presentation to the staff before providing the customer lists to—

1. *Provide a framework for the competitive analysis,* and
2. *Frame the questions that you want the staff to be asking customers*

Initial merits presentation

- Critical to do completely, coherently, and quickly
  1. Often a large “first mover” advantage in being the first to give the staff a systematic way to think about the transaction
  2. Well-prepared business people are the best to present
     - Agencies not impressed with “testifying” lawyers—especially outside counsel
  3. Need to anticipate and answer staff questions
     - Avoiding answers causes the staff to be more skeptical about the transaction and increases the probability of an in-depth investigation
  4. Need to clear and compelling
     - Cannot win on an argument that the staff does not understand or finds ill-supported
  5. Need to anticipate and be consistent with what the staff is likely to what the staff is likely to see in the company documents and hear from customers
     - Staff will almost always accept the customer view in the event of an inconsistency
  6. Need to do the presentation quickly
     - By the time you get the initial call from the staff, one-third of the initial waiting period will be over
     - Accordingly, must have the presentation “in the can” by the end of the first week of the initial waiting period

Initial merits presentation

- The best presentations—
  1. anticipate all the issues the staff will raise,
  2. provide answers that are supported by company documents and consistent with customer perceptions, and
  3. have all the facts right

Ideally, the rest of the investigation needs to do no more than defend the analysis in the first presentation

Initial merits presentation

- Ideal structure (when the facts fit)
  1. Provide an overview of the parties and the transaction
     - Identify other jurisdictions in which the transaction is reportable
  2. Provide an overview of the industry (if the staff is not familiar with the industry)
  3. Explain the business model driving the transaction
     - The deal is procompetitive—a win-win for the company and the customers
     - "We make the most money by providing more value to customers, improving productive efficiency, and reducing costs without reducing product or service quality"
     - Essential to give a compelling reason for doing the deal that is not anticompetitive
  4. Identify the customers benefits implied by the business model
     - Customers will be better off with the transaction than without it
     - NB: Agencies give little credit in the competitive analysis to efficiencies or cost savings that are not passed along to customers
  5. Explain why market conditions would not allow the transaction to be anticompetitive in any event
     - "We could not raise price even if we wanted. Customers have alternatives to which they can turn to protect themselves in the event we try to raise price or otherwise harm them."
     - Alternatives can be other current suppliers, firms in related lines of business that can expand their product lines, new entrants, or customer self-supply/vertical integration

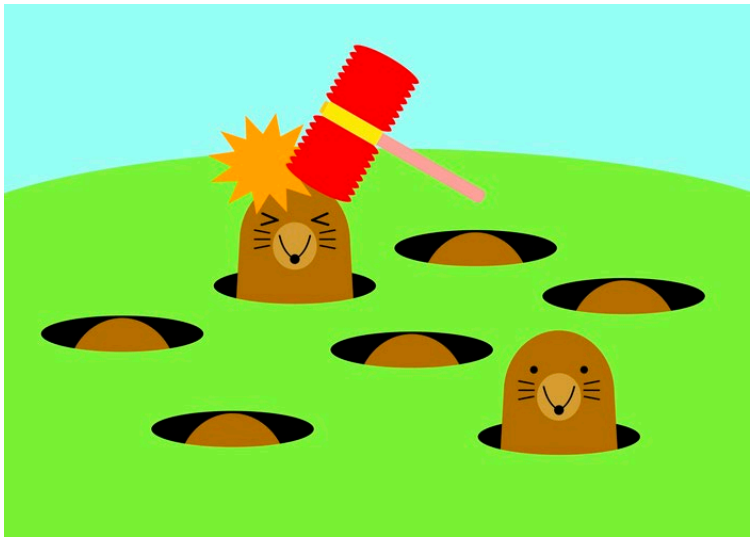
Customer/competitor interviews by staff

- Occupies the bulk of the remaining time in the initial investigation
- Customer views are given great weight
  - *Theory*: The purpose of the antitrust laws is to protect customers from competitive harm, and sophisticated customers should have a good idea of whether they will be competitively harmed by the transaction under review
  - Staff will attempt to call all the contracts on the customer lists provided by the merging companies in response to the initial voluntary request
  - Staff often will uncritically accept customer complaints but question customer support
  - Customer reactions may differ depending on the position of the contact person
    - The CEO may take a broader and more nuanced view of the transaction than a procurement manager, who only sees the merger reducing the number of available suppliers
- Competitor conclusions are given little weight
  - *Theory*: Anticompetitive transactions are likely to benefit competitors, so competitor complaints are more likely the result of concerns about procompetitive efficiencies than anticompetitive effect
  - But competitor interviews can be useful in understanding more about the industry
    - Complaining competitors are often willing to spend considerable time educating the staff
    - Customers usually just want the staff to go away unless they strongly oppose the deal

Respond to staff questions

- Questions may arise as a result of customer and competitor interviews
- Need to anticipate and respond to these quickly
  - Likely hear from staff in the last week of the initial waiting period
  - A failure to negate any staff concerns will almost surely extend the investigation

Think of this as a serious game of Wack-A-Mole



End of the initial waiting period

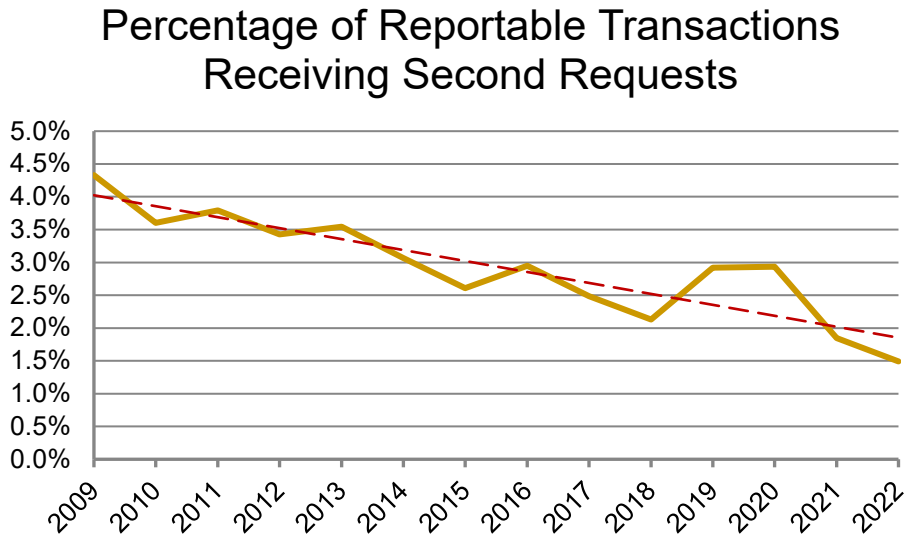
- Three options for the agency
  1. Close the investigation
  2. Issue a second request
     - Most important factors—
       - Incriminating company documents
       - Significant customer complaints
       - Four or less competitors postmerger for horizontal transactions (5 → 4 deals)
         - Maybe 6 → 5 later in the Biden administration
       - Merging parties are uniquely close competitors to one another ("unilateral effects")
       - Merger eliminates a "maverick," an actual potential competitor, or a "nascent competitor"
       - Obvious significant foreclosure possibilities (for vertical transactions)

       NB: Any one of these factors can be sufficient to trigger a second request investigation—it does not take much
     - A second request must be authorized—
       - By the assistant attorney general (typically delegated to a deputy assistant attorney general)
       - By the Federal Trade Commission (typically delegated to the chairman or a commissioner)
  3. Convince the parties to "pull and refile" their HSR forms to restart the initial waiting period
     - Typically used when the initial investigation to date indicates no problem but requires a short additional time to complete customer interviews
     - The agency usually grants early termination in the middle of the second initial waiting period

Second Request Investigations

The second request

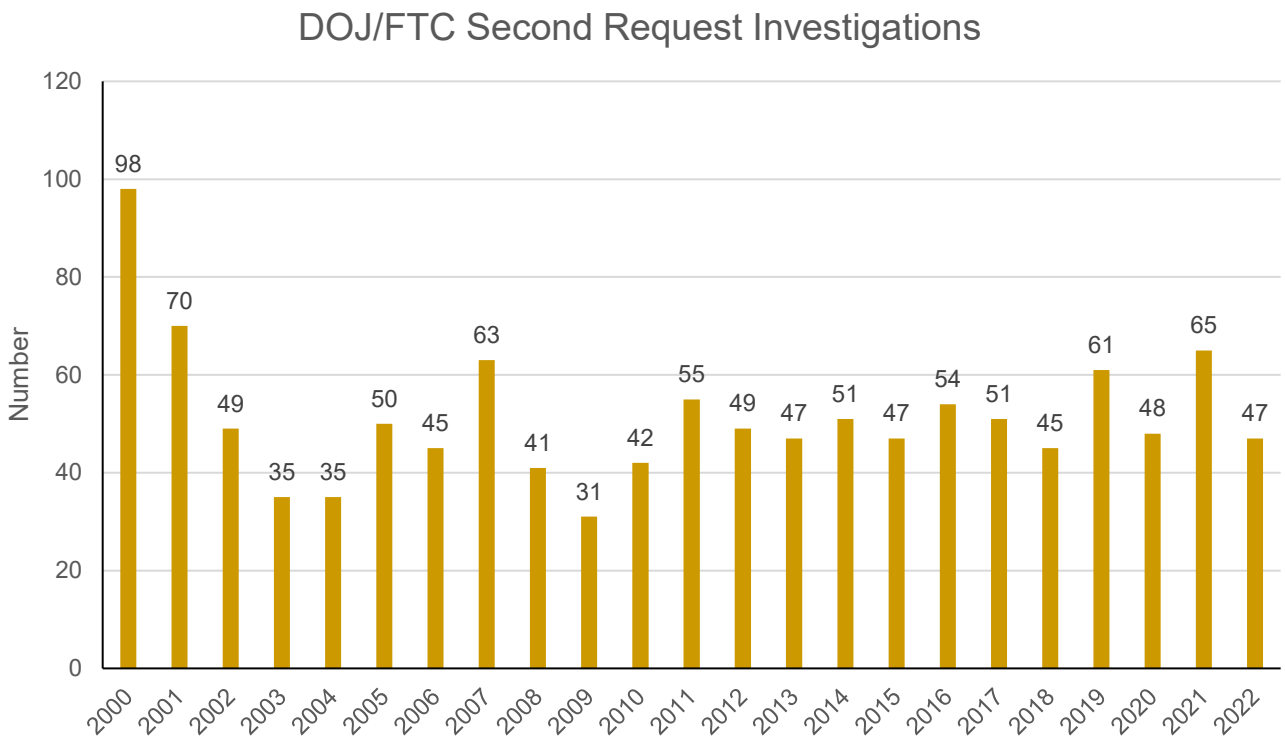
- HSR Act authorizes investigating agency to issue one request for additional information and documentary material (a "second request") during the initial waiting period to each reporting party
- Issuance of a second request extends waiting period until—
  - All parties comply with their respective second requests, *and*
  - Observe a final waiting period (usually 30 days) following compliance



Source: Fed. Trade Comm'n & U.S. Dept. of Justice, Hart-Scott-Rodino Annual Report Fiscal Year 2022, at App. A.

Total number of second request investigations

- By year since 2000



Source: Fed. Trade Comm'n & U.S. Dept. of Justice, Hart-Scott-Rodino Annual Report Fiscal Year App. A (for FY 2010 and FY 2022).

The second request

- Blunderbuss request
  - If you can only ask once, ask for everything
  - DOJ and FTC each have “model” second requests, but typically customized with additional specifications
  - Covers all company documents, including e-mail and other electronic documents

The second request

- Typically takes 4-8 months to comply
  - Can cover 60-120 custodians in large multiproduct deals
    - In the past, the agencies had made meaningful efforts to reduce this number, targeting 30-35 custodians
    - BUT often condition this on a "timing agreement" and other commitments
    - Today, the agencies are making second requests more onerous to dissuade companies from doing potentially problematic deals
  - Document requests, including—
    - Business, strategic and marketing plans
    - Pricing documents
    - Product and R&D plans
    - Documents addressing competition or competitors
    - Customer files and customer call reports
  - Data interrogatories, including—
    - Detailed production, sales, and price data
    - Bid and win/loss data
  - Narrative interrogatories, including—
    - Requirements for entry into the marketplace
    - Rationale for deal
  - Non-English language documents must be translated into English

Also need to prepare a ***privilege log*** listing—

1. Every document withheld in whole or in part on a claim of privilege,
2. The author(s) and recipient(s) of the document
3. The nature of the claimed privilege, *and*
4. The reasons for supporting the claim

Second request investigations

- Depositions of business representatives of parties
  - Often 3-5 employees for each party
    - Typically includes the senior person knowledgeable about U.S. sales and competition for U.S. customers
    - Can include sales representatives for key accounts
    - R&D directors (if R&D is important to defense)
  - Location: Typically Washington
  - Attendance can be compelled
    - Civil Investigative Demand (CID) by the DOJ
    - Subpoena by the FTC
  - Transcribed and under oath (sometimes videotaped)
  - Typically each lasts 6-8 hours
- Documents and testimony from customers and competitors
  - Adverse testimony will be memorialized in a sworn affidavit
- Expert economic analysis
  - By experts retained by the parties
  - By agency experts
    - Or, in investigations where litigation is foreseeable, by outside experts retained by agency

Final waiting period

- Timing
  - Begins when all parties have submitted proper second request responses
    - *Exception*: In open market transactions, timing depends only on when the acquiring person complies (to avoid delaying tactics by the target in hostile transactions)
  - Ends 30 calendar days later
    - 10 days in a cash tender offer
- The final waiting period is often too short to complete the investigation given the time it takes—
  - For the investigating staff to analyze information and documents submitted by the parties in response to their second requests
  - For the investigating staff to finalize its analysis and recommendation, *and*
  - For agency management to review the staff's recommendation and make a decision on the disposition of the investigation
  - *Conclusion*: The final waiting period provides too little time for the agency to make an informed decision

Timing agreements

- Timing agreements in second request investigations
  - The merging parties can—and typically do—voluntarily commit to give the agency additional time to complete the investigation by executing a contractual timing agreement
    - Commits the parties not to close the transaction for some period of time after the expiration of the HSR Act waiting period
    - Usually in the parties' interest, since the agency will sue to block the transaction if it cannot complete its analysis
      - Provides additional time for agency to complete investigation
      - May be necessary to complete meetings to enable the merging parties to make their arguments
      - Usually better than being sued!
        - The investigating agency will sue to block the transaction if it cannot complete its analysis before the transaction closes
      - May be necessary if a consent decree is being negotiated
  - Typical commitment: An additional 30-60 days beyond the end of the HSR Act waiting period
  - BUT a timing commitment does not technically extend the statutory waiting period
    - Enforceable through contract or detrimental reliance, not as a violation of the HSR Act
    - Typically misunderstood by the parties and the investigating staff
    - Is acknowledged by the FTC Premerger Notification Office
    - Significant because there can be no "gun jumping" after the end of the HSR Act waiting period

The End of the Investigation

The final arguments

- Four formal meetings at the end of the investigation

	DOJ	FTC
1	Investigating staff	Investigating staff
2	Section Chief & staff	Assistant Director & staff
3	Deputy Assistant Attorneys General (legal and economics)	Directors meeting (Bureau of Competition/ Bureau of Economics)
4	Assistant Attorney General	FTC Commissioners (meet individually)

Note: The last meeting with the AAG or the Commissioners is sometimes inappropriately called a “last rites” meeting

- Numerous informal meetings can occur up the chain at the end of the investigation
- *Critical question*: How much of its analysis will the investigating staff disclose to the parties?

Merger Review Outcomes

Possible outcomes in DOJ/FTC reviews

Close investigation	• Waiting period terminates at the end of the investigation with the agency taking no enforcement action, or • Agency grants early termination prior to normal expiration
Litigate	• DOJ: Seeks preliminary and permanent injunctive relief in federal district court • FTC: Seeks preliminary injunctive relief in federal district court Seeks permanent injunctive relief in administrative trial
Settle w/consent decree	• Historically, the typical resolution for problematic mergers • DOJ: Consent decree entered by federal district court • FTC: Consent order entered by FTC in administrative proceeding
Parties terminate transaction	• Parties will not settle at the agency's ask and will not litigate, or • Agency concludes that no settlement will resolve the agency's concerns and the parties will not litigate • Examples: AT&T/T-Mobile, NASDAQ/NYSE Euronext
"Fix it first"	• Merging parties restructure transaction to eliminate problematic overlap by narrowing assets to be purchased or selling assets to a third party • Merging parties file new HSR notifications for the restructured transaction • HSR reports also may need to be filed for the restructured transaction • When done to the agency's satisfaction, eliminates the need for a consent decree or other enforcement act

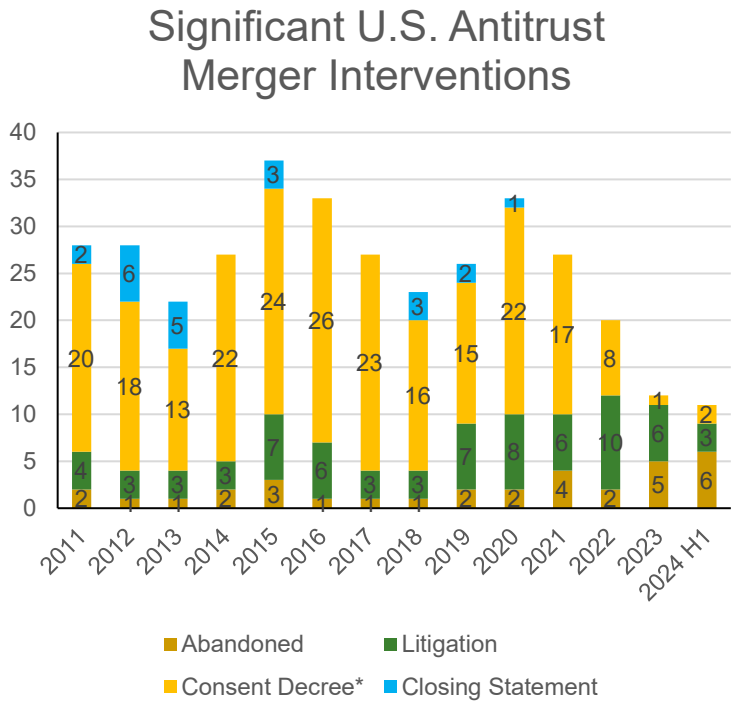
Possible outcomes in DOJ/FTC reviews

Allow deal to close but do not close investigation

- New with the Biden administration
  - No deadline to finish investigation—could remain open indefinitely
  - Agencies send a "preconsumation warning letter" to the parties alerting them to the continuation of the investigation and the possibility of a postclosing challenge[1]
  - Agencies have yet to bring a postclosing challenge to one of these deals

[1] For the FTC's model letter, see Fed. Trade Comm'n, Sample Pre-Consummation Warning Letter. The DOJ and FTC are free to bring Section 7 actions even after the conclusion of an HSR merger review. The most notable modern example is the FTC's challenge initiated in 2020 of Facebook's acquisition of Instagram in 2012 and WhatsApp in 2014. Complaint for Injunctive and Other Equitable Relief, FTC v. Facebook, Inc., No. 1:20-cv-03590 (D.D.C. filed Dec.9, 2020). The district court rejected Facebook's effort to dismiss the complaint as untimely. See FTC v. Facebook, Inc., 560 F. Supp. 3d 1, 30-32 (D.D.C. 2021).

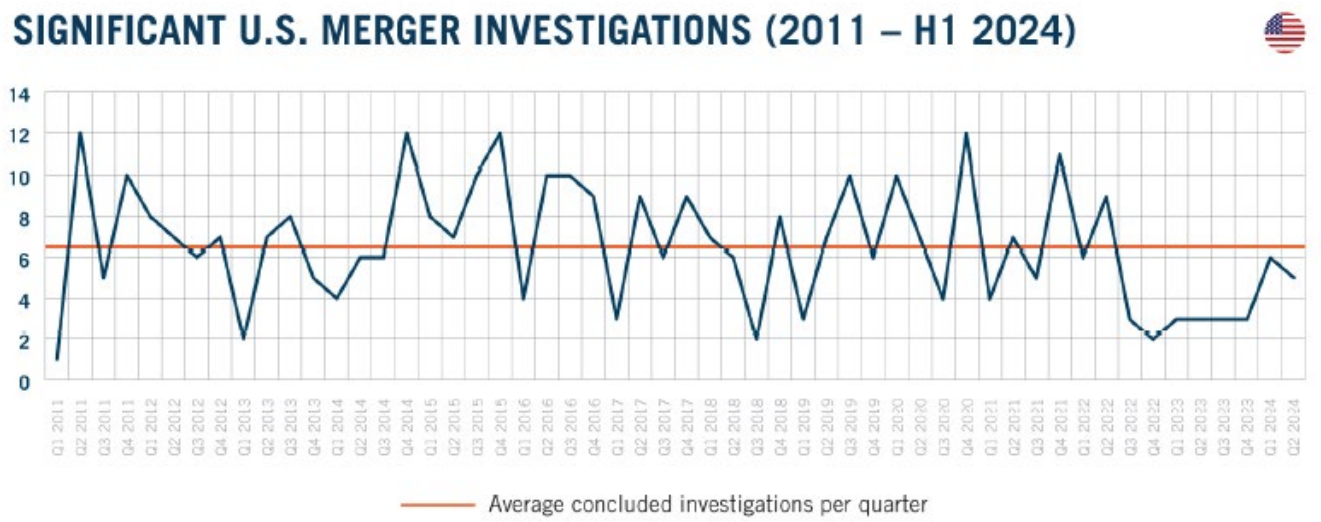
U.S. antitrust merger intervention outcomes



Year	Consent Decree	Abandoned	Litigation	Closing Statement	Total
2011	20	2	4	2	28
2012	18	1	3	6	28
2013	13	1	3	5	22
2014	22	2	3		27
2015	24	3	7	3	37
2016	26	1	6		33
2017	23	1	3		27
2018	16	1	3	3	23
2019	15	2	7	2	26
2020	22	2	8	1	33
2021	17	4	6		27
2022	8	2	10		20
2023	1	5	6		12
2024 H1	2	6	3		11

Source: Dechert LLP, DAMITT Q2 2024: Abandonments Dominate the Podium in Merger Enforcement (Aug. 6, 2024). Dechert LLP, DAMITT 2018 Year in Review (Jan. 24, 2019). Dechert declines a "significant" investigation as one that involves a deal that is HSR reportable for which the result of the investigation is a consent order, a complaint challenging the transaction, an official closing statement by the reviewing antitrust agency, or the abandonment of the transaction with the antitrust agency issuing a press release. It does not include an in-depth second request investigation in which the agency concludes there is no antitrust concern, so in this sense a significant investigation is the same as an intervention outcome. Dechert calculates the duration of an investigation from the date of announcement to the completion of the investigation (presumably including any time necessary to negotiate a consent decree).

Outcomes in "significant" investigations



- Dechert concludes:[1]

> These numbers demonstrate the extent to which the agencies' avoidance of settlements has reduced overall enforcement activity. Historically, most enforcement actions by the U.S. agencies resulted in consent decrees. The decline in these settlements, however, has not been matched by a corresponding bump in complaints or abandoned transactions. . . . As a result, it is hard to see what the U.S. agencies have gained through their new approach to settlements, especially as the agencies have struggled to defend the complaints that have been filed in court. As of the end of Q2 2023, the agencies have only successfully blocked one transaction through a complaint filed under the Biden administration.

[1] Dechert LLP, DAMITT Q2 2023: When Avoiding Settlements, Does Merger Enforcement Settle for Less? (July 26, 2023).

Appendix
New Proposed HSR Notification Changes

Proposed HSR notification changes

- Background
  - On June 27, the FTC announced that it, with the DOJ's concurrence, would be publishing a Notice of Proposed Rulemaking (NPRM) to amend the rules governing the HSR notification process[1]
  - As proposed, the rule would—
    - fundamentally change the HSR notification process, *and*
    - significantly increase the cost, burden, and timing for parties filing HSR notifications
  - This is the first fundamental revision of the HSR reporting requirements since the original form was issued 45 years ago
- Timing
  - The rulemaking is subject to q 60-day public comment period
    - On August 4, the FTC extended the public comment period to September 27, 2023[2]
  - The final rules are likely to be issued in 2024 Q4
    - The effective date is likely to be sometime later

[1] *See* Press Release, Fed. Trade Comm'n, FTC and DOJ Propose Changes to HSR Form for More Effective, Efficient Merger Review (June 27, 2023). The NPRM was published on June 29. Fed. Trade Comm'n, Premerger Notification; Reporting and Waiting Period Requirements, 88 Fed. Reg. 42178 (June 29, 2023) (to be codified at 16 C.F.R. Pts. 801-803) ("HSR NPRM"); [2] 15 U.S.C. § 18a(d)(1).

[2] *See* Press Release, Fed. Trade Comm'n, FTC and DOJ Extend Public Comment Period by 30 Days on Proposed Changes to HSR Form (Aug. 4, 2023).

Key proposed changes

- Competition analysis
  - Narrative explanation of any current and potential future horizontal overlaps between the parties
    - For each overlap, sales information, customer information (including contact information), and a description of any licensing arrangements, noncompete agreements, and nonsolicitation agreements
  - Narrative explanation of any vertical relationships between the parties
  - More granular geographic information at the street-address level for certain overlaps
  - More expansive information regarding acquisitions in the last 10 years of businesses that offer a product that overlaps with the other party
  - Projected revenue streams for pre-revenue companies
  - Information regarding customers for overlapping products and services, including customer contact information
  - Mandatory disclosure of required foreign merger control filings

Key proposed changes

- Information about the transaction
  - Narrative explanation of each strategic rationale for the transaction
    - With citations to supporting documents
  - A diagram of the deal structure with an explanation of all the entities involved persons involved in the transaction
  - A detailed transaction timeline of key dates and conditions to closing
- Required business documents
  - Broadening the scope of Item 4(c) and 4(d) documents that analyze the transaction to include—
    - Documents prepared by or for "supervisory deal team leads" in addition to officers and directors; *and*
    - Drafts (not just final versions) of all responsive documents
  - Full English translations of all foreign-language documents submitted with the HSR filing
  - Board reports and certain semi-annual and quarterly ordinary course business plans that evaluate the competitive aspects of any overlapping product or service.

Key proposed changes

- Information about the reporting company
  - A description of each of the filer's businesses and products/services
    - Can be extensive for conglomerates and private equity (PE) funds
  - Expanding the requirements for identifying minority investors
  - Sweeping new requirements to identify officers, directors, and board observers for all entities within the acquiring and acquired person (or in the case of unincorporated entities, individuals exercising similar functions), as well as those who have served in the position within the past 2 years
  - Identification of the company's communications and messaging systems
  - Certification that the company has taken steps to suspend ordinary document destruction practices for documents and information "related to the transaction," regardless of whether the transaction raises any substantive antitrust issues

Key proposed changes

- Labor markets
  - Provide the aggregate number of employees of the company for each of the five largest occupational categories by six-digit Standard Occupational Classification (SOC) codes
    - The SOC is an employee classification system developed by the Department of Labor Statistics.
  - Indicate the five largest 6-digit SOC codes in which both parties (the acquiring person and the acquired entity) employ workers
    - For each overlapping 6-digit SOC code, list each Employee Research Service (ERS) commuting zone in which both parties employ workers and provide the aggregate number of classified employees in each ERS commuting zone
      - The ERS was developed and maintained by the Department of Agriculture
  - Identify any penalties or findings issued against the filing person by the U.S. Department of Labor's Wage and Hour Division (WHD), the National Labor Relations Board (NLRB), or the Occupational Safety and Health Administration (OSHA) in the last five years and/or any pending WHD, NLRB, or OSHA matters

Key proposed changes

- Agreement documents
  - Current rule:
    - A filing requires a copy of the most recent version of—
      - the contract or agreement, *or*
      - letter of intent (LOI) to merge or acquire
    - The letter of intent can be bare bones and not include even the basic terms of an agreement
  - Proposed rule
    - Requires:

> [C]opies of all documents that constitute the agreement(s) related to the transaction, including, but not limited to, exhibits, schedules, side letters, agreements not to compete or solicit, and other agreements negotiated in conjunction with the transaction.[1]

    - Documents that constitute the agreement must be executed, but draft documents will suffice *if* they provide sufficient detail" about the transaction:

> If there is no definitive executed agreement, provide a copy of the most recent draft agreement or term sheet that provides *sufficient detail* about the scope of the entire transaction that the parties intend to consummate.[2]

    - While the proposed rules do not define "sufficient detail," the agencies likely will demand something like a detailed term sheet
      - Bare bones LOIs that have been acceptable in the past almost surely will not be sufficient
      - This means that negotiations will have to be much further along than they are today in many deals

[1] HSR NPRM, 88 Fed. Reg. at 42213. [2] *Id*.

Some observations

- Deficiencies in filing
  - Documents
    - Currently, a party's failure to submit all 4(c) and 4(d) document with the original filing can make the filing inoperative and, once discovered, require the party to make a new complete filing, which starting the running of a new HSR waiting period
    - The proposed expanded document requirements increases the risk that required documents will be missed and that the agencies will reject the original filing as deficient
  - Narratives
    - Currently, an HSR filing does not require the creation of any new narratives
    - The proposed changes require the creation of narratives describing the strategic rationale for the transaction, horizontal overlaps, and supply relationships, raising the possibility that the agency will find the narratives "inadequate" and refuse to recognize the filing as effective
  - Agreement documents
    - Currently, a filing can be made on a bare bones letter of intent
    - The proposed rules require that if the absence of an executed definitive agreement, the parties can file only if the letter of intent or term sheet contains "sufficient detail" about the scope of the transaction, raising the possibility that the agency will find that these documents provide insufficient detail and therefore refuse to recognize the filling as effective

Disputes over the sufficiency of a filing may need to be resolved in a declaratory judgment action in a federal district court

The upshot

- The existing way
  - The reporting regime since the HSR Act was put into effect in 1978 has been to ask for only the minimal information necessary to determine whether to open a preliminary investigation during the initial waiting period
  - In the preliminary investigation, additional information to inform the agency whether to issue a second request was obtained through:
    1. The presentations by the merging parties
    2. Responses by the merging parties to a “voluntary request letter” for documents, data, and other information
    3. Responses by the merging parties to other questions from the investigating staff
    4. Telephone interviews with customers, competitors, industry analysts, and other third parties
    5. Internet research on the merging parties and the products of interest
    6. Presentations, if any, by firms and interest groups opposing the deal
- Under the proposed rules
  - Much of the information the investigation agency gathered from the merging parties during the preliminary investigation will now be required as part of the HSR notification form

The upshot

- The burden
  - In FY 2021[1]—
    - 3413 transactions were reported
    - Clearance was granted to open preliminary investigations in 270 transaction (7.9%)
    - Second requests were issued in 65 transactions (1.9%)

If the proposed rules had been in effect in FY 2021, the burden of the additional reporting requirements would have been imposed on 3142 reportable transactions where neither the DOJ nor the FTC had sufficient concern to request clearance to open a preliminary investigation

[1] Fed. Trade Comm'n & U.S. Dept. of Justice, Hart-Scott-Rodino Annual Report Fiscal Year 2021, at Ex. A, Table I.

Likely challenges

- If the final rules look like the proposed rules, the final rules will almost certainly be challenged in court as being outside of the authority of the FTC to promulgate
  1. The delegation of rulemaking authority is limited to "necessary and appropriate" documents and information to enable the agencies to determine whether the reported transaction violates the antitrust laws[1]
  2. Under the current reporting regime, the agencies notification of pending reportable transactions—Internet research, voluntary access letters, second requests, and field investigations with customers and competitors provide the agencies all the information they need to determine whether a transaction violates the antitrust laws
  3. This is confirmed by the fact that since 1978, when HSR reporting began, the agencies have challenged only a handful of reportable transactions (say, less than four) that were "cleared" in the merger review
     - Under *DuPont/GM*, laches does not run against the DOJ or the FTC, so a postclearance Section 7 challenge—even 30 years after the closing—is not time barred
     - The fact that the agencies are not bringing postclearance challenges indicates that the agencies are able to determine whether a transaction violates Section 7 under the historical reporting regimes, so that the additional requirements are neither "necessary" or "appropriate"

[1] 15 U.S.C. § 18a(d)(1). Also, look at the legislative history of the HSR Act discussed above.

CLASS 5 SLIDES

Unit 5. Merger Antitrust Settlements

Professor Dale Collins
Merger Antitrust Law
Georgetown University Law Center

September 10, 2024

Topics

- The basic idea
- Some important legal technicalities
- DOJ/FTC enforcement practice
- Consent decrees
  - Fixing the antitrust concern (the “fix”)
  - Other important provisions
  - The process
- Consent decree violations
- Two variations
  - “Litigating the fix”
  - “Fix it first”

Possible outcomes in DOJ/FTC reviews

Close investigation

- Waiting period terminates at the end of the investigation with the agency taking no enforcement action, or
- Agency grants early termination prior to normal expiration

Litigate ("Litigate the fix")

- DOJ: Seeks preliminary and permanent injunctive relief in federal district court
- FTC: Seeks preliminary injunctive relief in federal district court
  Seeks permanent injunctive relief in administrative trial

Settle w/consent decree

- Typical resolution for problematic mergers
- DOJ: Consent decree entered by federal district court
- FTC: Consent order entered by FTC in administrative proceeding

Parties terminate transaction

- Parties will not settle at the agency's ask and will not litigate, or
- Agency concludes that no settlement will resolve the agency's concerns and the parties will not litigate
  - Examples: AT&T/T-Mobile, NASDAQ/NYSE Euronext

"Fix it first"

- Merging parties restructure transaction to eliminate problematic overlap by narrowing assets to be purchased or selling assets to a third party
- Merging parties file new HSR notifications for the restructured transaction
  - HSR reports also may need to be filed for the restructured transaction
- When done to the agency's satisfaction, eliminates the need for a consent decree or other enforcement action

The Basic Idea

The basic idea

- The Section 7 concern

  Suppose that the investigating agency concludes that a horizontal merger, if consummated, would violate Section 7 in some relevant market

- The "fix"

  Require one of the merging parties to sell its business in the relevant market to a third party with the ability and the incentive to run the divested business with at least the same competitive force as the divestiture seller

- The upshot

  The market structure does not change: The same number of firms continue to operate in the market with the same competitive force postmerger as premerger

The basic idea

- The fundamental consent decree requirement:

  The divestiture buyer must preserve the level of premerger competition in the market of concern so that the putative anticompetitive effect never materializes postmerger

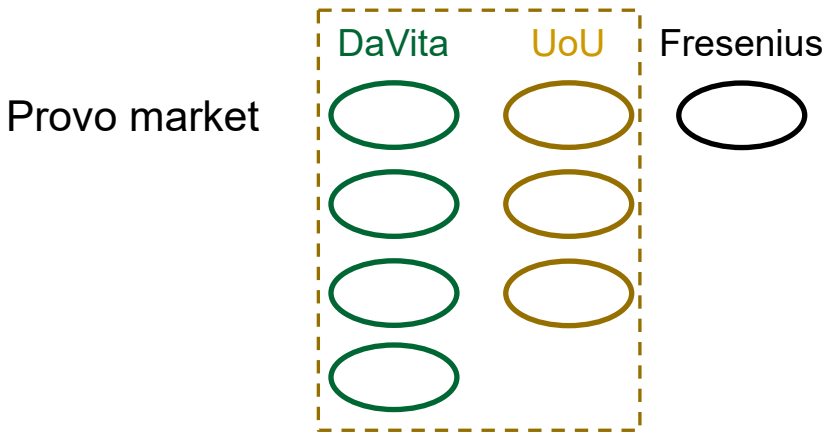
- Two requirements here
  1. The divestiture buyer must have the *ability* and the *incentive* to preserve the premerger level of competition postmerger for the foreseeable future
     - *Corollary 1*: The divestiture business must be *financially viable* in the hands of the divestiture buyer
     - *Corollary 2*: Financial viability may require the divestiture of additional assets not strictly necessary to eliminate the antitrust problem
  2. The divestiture must preserve competition *ab initio*—there cannot even be a transitory anticompetitive effect postmerger

The divestiture buyer is said to "step into the shoes" of the divestiture seller:

The identity of the owner of the divested assets change, but the structure and competitive performance of the relevant market remains the same

The basic idea

- *Illustration*: DaVita/University of Utah[1]
  - The deal
    - In September 2021, DaVita, the largest operator of outpatient dialysis clinics in the United States, agreed to acquire the University of Utah's 18 dialysis clinics in and around Utah in a non-HSR reportable transaction
  - The antitrust problem
    - In the greater Provo market, there were only three dialysis providers:
      - DaVita: 4 clinics
      - UoU: 3 clinics
      - Fresenius: 1 clinic



    - Barriers to entry into dialysis clinics are very high and no new entry was likely postmerger
    - The transaction would reduce the number of competitors in the Provo market from three to two (a "3 → 2 transaction"), with DaVita operating seven out of the eight clinics in the area

[1] For the consent order and related documents, see the DaVita/University of Utah case study in the Unit 5 supplemental materials.

The basic idea

- *Illustration*: DaVita/University of Utah
  - The consent decree
    - The FTC and DaVita resolved the FTC's concerns at the end of the investigation through a consent decree requiring DaVita to—
      - Divest the three UoU Provo clinics to Sanderling Renal Services, Inc. ("SRS"), a small but established operator of dialysis clinics nationwide but without any presence in Utah
      - Provide transition services to SRS for up to one year
      - Assist SRS in hiring the employees at the divested clinics and refrain from soliciting those employees for 180 days
      - Prohibit DaVita from entering into or enforcing noncompete agreements with any University nephrologist
      - Prohibit DaVita from entering into any non-solicitation agreement with SRS that would prevent SRS from soliciting DaVita's employees for hire
      - Requires DaVita to obtain prior approval from the Commission for any future acquisition of any ownership interests in any dialysis clinic in Utah
    - Term of the consent decree: 10 years from date of final acceptance

Requires the sale of all the seller's business in the relevant market (standard)

Requires a "buyer upfront" (standard in most cases)

Standard provision

Standard provision

New provision

New provision

New provision

Reflects the FTC's new concerns about the effect of mergers on labor

Once the FTC provisionally accepted the consent order on October 25, 2021, the parties were free to close the main transaction. The settlement, however, required DaVita to divest the three Provo clinics to SRS within ten days of the closing of the main transaction.

The basic idea

- *Illustration*: DaVita/University of Utah
  - The FTC found no antitrust problems with DaVita's acquisition of the other 15 UoU clinics

The keys to a consent decree are—

1. *the existence of parts of the deal that do not present antitrust problems that are separable from the parts of the deal that do, and*
2. *A divestiture buyer with the ability and incentive to operate the divested assets with the same competitive force as the divestiture seller so as to preserve competition in the relevant market postmerger*

The basic idea

- There are three ways to restructure a deal to avoid a problematic antitrust overlap:
  1. Postmerger sale to a third party under a (traditional) consent decree
     - Restructure the transaction under a consent decree to sell one side of the problematic overlap (either the buyer or seller) to a third party approved by the agency under a divestiture agreement approved by the agency *after* the buyer and seller close their main transaction
     - Report the original transaction on the HSR filing—shows the overlap
     - (Maybe) The third party could be a newly created "Spin Co." if properly structured
  2. Leave the seller's overlap business with the seller
     - Restructure the transaction with the seller so that the seller retains its side of the problematic overlap, so it never passes to the buyer
     - Report only the restructured transaction on the HSR filing—shows no overlap
  3. Premerger sale to a third party ("Fix it first")
     - Restructure the transaction so that one side of the problematic overlap (either the buyer or the seller) is sold to a third party *before* the buyer and seller close their main transaction
     - = The "fix" without the consent decree
     - Report only the restructured transaction on the HSR filing—shows no overlap

NB: If the agency refuses to accept the fix to settle the investigation, the parties can put the fix in place contingent on the closing of the main deal and "litigate the fix"

The basic idea

- A caution:
  - In some deals, there is a meaningful prospect that the original deal can be successfully defended, and that no "fix" is necessary
  - In other deals, the "fix" is obvious to the parties and the investigating agency
  - In still other deals with multiple horizontal overlaps, it may be difficult if not impossible to determine precisely what overlaps the agency will conclude are problematic and hence have to be fixed
    - The only way to find out for sure is to go through the HSR investigation and negotiate a mutually acceptable solution (if possible) with the investigating agency during the investigation

In the absence of a mutually acceptable solution during the investigation, the only alternatives are to—

1. *Litigate the merits of the original deal*
2. *Litigate the fix*
3. *Voluntarily terminate the transaction*

The basic idea

- Three basic divestiture consent decree paradigms
  1. Divest standalone business unit complete with all necessary back office and other support
     - Divestiture of a legal entity—a corporation or an LLC—is desirable since all employees and contracts with the company follow the sale to the divestiture buyer
     - If the Commission is unsure whether an acceptable divestiture buyer will emerge, the Commission will insist on a "buyer upfront"—that is, it will not accept the consent decree until the Commission vets and approves the divestiture buyer and the definitive purchase agreement
       - Finding an upfront buyer can delay the closing of the main transaction for several months if the divestiture buyer was not identified and signed up during the investigation
     - Today, buyers upfront are usually required
  2. Divest an operating business
     - Core business operations divested—Divestiture buyer to provide back office and other support
     - Agencies almost always demand an upfront buyer
  3. Divest assets necessary for divestiture buyer to operate the divestiture business
     - Divestiture buyer to provide all support necessary to operate the business
     - Agencies always demand an upfront buyer

These three paradigms also apply in "litigate the fix" and "fix it first" solutions

Some Important Legal Technicalities

Some important legal technicalities

1. Consent decree are final judgments in a judicial or administrative adjudicative proceeding
   - A judicial or administrative complaint must initiate these civil proceedings
   - DOJ consent decrees are federal district court permanent injunctions
     - Violations are enforceable through civil and criminal contempt sanctions
   - FTC consent orders are administrative "cease and desist orders"
     - Violations are enforceable through federal district court action for civil penalties
       - Penalties are inflation adjusted
       - In 2024, the maximum penalty is $51,744 per day (adjusted annually)[1]
     - The district court will also issue an injunction to prevent future violations of the FTC consent order
       - These district court orders are enforceable through judicial contempt sanctions (criminal and civil)
       - Contempt sanctions can expose the company to greater liability than the per day civil penalty

[1] 89 Fed. Reg. 1445 (Jan. 10, 2024) (increasing civil penalty from $50,120 to $51,744 per day effective January 10, 2024, purusuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015, Pub. L. No. 114–74, § 701, 129 Stat. 599 (2015) (requiring a catch-up CPI inflation adjustment from the date of the statute's enactment)).

Some important legal technicalities

2. Committed to agency discretion
   - The decision whether to enter into consent decree negotiations or to reject a consent decree is committed to the investigating agency's discretion
   - Agency decisions to refuse to accept a consent decree are not subject to review under the Administrative Procedure Act

Some important legal technicalities

3. No finding of facts or liability
   - As a matter of practice, consent decrees are entered by the court or FTC without adjudication of the merits or the finding of any facts
     - There is typically no active litigation: Most consent decrees are negotiated prior to the filing of the complaint and filed simultaneously with the complaint
     - Antitrust consent decrees historically have contained an explicit disclaimer that the parties' acceptance of the consent settlement—
       1. Is for settlement purposes only
       2. Does not constitute an admission by respondents that they violated the law as alleged in the complaint
       3. Does not constitute an admission by the respondents that the facts as alleged in the complaint (other than jurisdictional facts) are true
          - *Note*: An admission of jurisdictional facts is necessary to ensure that the the court or administrative tribunal has subject matter jurisdiction to enter the consent decree

Some important legal technicalities

4. The role of consent
   - In the absence of an adjudication of the merits, the power of the court or agency to enter a consent settlement as a final order rests on the consent of the parties to the settlement:

> [I]t is the parties' agreement that serves as the source of the court's authority to enter any judgment at all. More importantly, it is the agreement of the parties, rather than the force of the law upon which the complaint was originally based, that creates the obligations embodied in a consent decree.[1]

   - Corollaries
     - Because the source of the court's authority to enter a consent decree is the parties' agreement and not a violation of law, no proof or admission of a violation of a legal obligation is needed before a court can enter and enforce a consent decree as a judicial order
     - Conversely, a person (including a party in the same litigation) that is not a signatory to a consent decree is not bound by it, nor can a consent decree modify a third-party's rights or impose obligations or duties on a third party[2]
       - Accordingly, if a consent decree imposes obligations on a party that results in a breach of that party's obligations to a third party, the third party may sue for breach and the consent decree does not provide immunity for the breach

[1] Int'l Ass'n of Firefighters Local 93. v. City of 478 U.S. 501, 522 (1986) (citations omitted).
[2] *Id.* at 529; United States v. Ward Baking Co., 376 U.S. 327 (1964); Hughes v. United States, 342 U.S. 353 (1952).

Some important legal technicalities

5. Dual nature of consent decrees
   - *Basic rule*: United States v. ITT Cont'l Baking Co. (1975):

> Consent decrees and orders *have attributes both of contracts and of judicial decrees* or, in this case, administrative orders. While they are arrived at by negotiation between the parties and often admit no violation of law, they are motivated by threatened or pending litigation and must be approved by the court or administrative agency. *Because of this dual character, consent decrees are treated as contracts for some purposes but not for others*.[1]

   - Whether a consent decree will be treated as a contract will depend upon the particular context in which the issue arises

[1] United States v. ITT Cont'l Baking Co., 420 U.S. 223, 237 n. 10 (1975) (internal citation omitted).

Some important legal technicalities

6. Construing consent decrees
   - Courts generally construe consent decrees as contracts between the settling parties
     - Consent decrees "closely resemble contracts" and their "most fundamental characteristic" is that they are voluntary agreements negotiated by the parties for their own purposes[1]
     - As a general rule, courts construe consent decrees to give effect to the parties' intent as expressed in the decree itself
     - "[S]ince consent decrees and orders have many of the attributes of ordinary contracts, they should be construed basically as contracts, without reference to the legislation the Government originally sought to enforce but never proved applicable through litigation."[2]
       - *Query*: Is this still the state of the law?
   - But the contract analogy does not extend to third-party beneficiary enforcement
     - A consent decree is not enforceable directly or in collateral proceedings by those who are not parties to it[3]
     - Even intended third-party beneficiaries of a consent decree lack standing to enforce its terms

[1] Int'l Ass'n of Firefighters Local 93. v. City of 478 U.S. 501, 519, 522 (1986).
[2] United States v. ITT Cont'l Baking Co., 420 U.S. 223, 236-37 (1975).
[3] Blue Chip Stamps v. Manor Drug Stores, 421 U.S. 723, 750 (1975).

Some important legal technicalities

7. Modifying consent decrees
   - Modification with consent of all parties
     - Courts generally will modify the terms of a consent decree with the consent of all parties, provided that the modification does not contravene the public interest
   - Modification over the opposition of a party
     - In *United States v. Swift & Co.*, the Supreme Court rejected the contention that a consent decree should be considered a contract for purposes of determining whether the courts have the power to modify such a decree absent the parties' consent[1]

Consider three different scenarios

[1] 286 U.S. 106, 114-15 (1932); *see* Rufo v. Inmates of Suffolk Cnty. Jail, 502 U.S. 367, 378 (1992) ("[A consent decree] is an agreement that the parties desire and expect will be reflected in, and be enforceable as, a judicial decree that is subject to the rules generally applicable to other judgments and decrees.").

Some important legal technicalities

7. Modifying consent decrees
   - Modification over the opposition of a party (con't)
     - *Scenario 1*: Conditions have changed since the entry of the consent decree, the restrictions in the consent decree now affirmatively harm the public interest, and the private party bound by the restrictions seeks modification. The government opposes.
       - Following *Swift*, courts will modify or terminate a consent order over the government's opposition if, because of changed circumstances, the consent order harms the public interest[1]
       - Rule 60(b)(5) also provides that a court may relieve a party from a final judgment or order if "applying [the judgment] prospectively is no longer equitable"[2]

[1] United States v. Swift & Co., 286 U.S. 106, 114 (1932).
[2] Fed. R. Civ. P. 60(b)(5); *see* Rufo v. Inmates of Suffolk Cnty. Jail, 502 U.S. 367, 378 (1992) (noting application of Rule 60(b) to a consent decree).

Some important legal technicalities

7. Modifying consent decrees
   - Modification over the opposition of a party (con't)
     - *Scenario 2*: Conditions have changed since the entry of the consent decree, and the government concludes that the restrictions it negotiated in the consent decree are now inadequate to preserve competition and seeks modification to include new or enhanced restrictions. The private party opposes.
       - *WDC*: Most likely, courts will be reluctant to impose new obligations on the respondent over the respondent's opposition unless the consent agreement contemplates such changes in light of changed circumstances

Some important legal technicalities

7. Modifying consent decrees
   - Modification over the opposition of a party (con't)
     - *Scenario 3*: Conditions have *not* changed since the entry of the consent decree, but the government concludes it has negotiated inadequate relief to preserve competition and seeks to include new or enhanced restrictions. The private party opposes.
       - *WDC*: In the absence of changed circumstances, courts are likely to deny modifications to strengthen the consent order over the respondent's opposition, reasoning that the government must live with the relief it originally negotiated

An important aside: *Cleveland Firefighters*

- *Cleveland Firefighters*[1]
  - *Rule*: A court may enter a consent decree as a final judgment even if the consent decree contains relief that a court could not award in a fully litigated proceeding
    - *Corollary*: An agency may demand relief in a consent decree that a court could not award the agency in a litigated proceeding
  - *Qualifications*: The Court qualified this rule in two significant ways:
    1. The consent decree cannot conflict with or violate the law on which the complaint was based
    2. Inclusion of relief in a consent does not immunize the parties from a collateral attack that discharging their consent decree obligations—
       - Violates some other law, *or*
       - Breaches some contractual obligation to a third party

    Query: Would the court abuse its discretion if it entered a consent decree that it knew required the respondent to violate some law or breach some contract?

[1] Int'l Ass'n of Firefighters Local 93 v. City of Cleveland, 478 U.S. 501 (1986).

Agency Perspectives

Agency perspectives

- Consent settlements
  - The acceptance of a consent settlement is in the unfettered discretion of the investigating agency
  - The agency's willingness to accept a consent decree settlement depends largely on the confidence the agency has that the settlement will in fact negate the anticompetitive effect the agency believes the unrestructured transaction will create
    - Depending on administration, the requisite level of confidence can be anything from likely to a near-certainty that the consent settlement will negate all anticompetitive effects of the merger

Agency perspectives

- Consent settlements
  - To satisfy the agency, the consent settlement must—
    1. Give the agency sufficient confidence that the settlement will eliminate the agency's competitive concerns with the main acquisition
    2. Be workable in practice
    3. Must not involve the agency in continuous oversight or affirmative regulation
    4. Must not create its own antitrust concerns

The history

- Since at least 1982 until 2021, the DOJ/FTC has accepted divestiture consent decrees in most cases to resolve competitive concerns

Year	Consent Decree*	Abandoned	Litigation	Closing Statement	Total
2011	20	2	4	2	28
2012	18	1	3	6	28
2013	13	1	3	5	22
2014	22	2	3		27
2015	24	3	7	3	37
2016	26	1	6		33
2017	23	1	3		27
2018	16	1	3	3	23
2019	15	2	7	2	26
2020	22	2	8	1	33
2021	17	4	6		27
2022	8	2	10		20
2023	1	5	6		12
2024 H1	2	6	3		11

* Includes two "fix it first" resolutions in 2012

NB: 2023 and 2024H1 each contains one Section 8 interlocking directorate consent decree, and 2024H1 also contains one "fix-it-first." So, neither 2023 nor 2024H1 contained a traditional Section 7 consent decree.

Source: Dechert LLP, DAMITT Q2 2024: Abandonments Dominate the Podium in Merger Enforcement (Aug. 6, 2024); Dechert LLP, DAMITT 2018 Year in Review (Jan. 24, 2019). Dechert declines a "significant" investigation as one that involves a deal that is HSR reportable for which the result of the investigation is a consent order, a complaint challenging the transaction, an official closing statement by the reviewing antitrust agency, or the abandonment of the transaction with the antitrust agency issuing a press release. It does not include an in-depth second request investigation in which the investigating agency concludes there is no antitrust concern but issues no closing statement, resulting in the number of investigations in which the agency takes no enforcement action is undercounted. Dechert calculates the duration of an investigation from the date of announcement to the completion of the investigation (presumably including any time necessary to negotiate a consent decree).

The history

- 1982 through early Obama administration
  - The agencies believed that consent decrees provided the best way to resolve the agency concerns from society's perspective
    - *Social benefits*: The agencies presumed that there were likely significant efficiencies in the nonproblematic parts of the deal, and if the agency did not accept a consent decree and the deal collapsed, consumers would lose the benefits of the nonproblematic parts of the deal
    - *Compromise*: So even if the consent decree did not completely negate the transaction's anticompetitive effect, there was an offsetting social benefit from the efficiencies from the part of the transaction that was allowed to close

The history

- Late Obama/Trump administrations
  - Beginning late in the Obama administration and continuing to some degree in the Trump administration, the agencies began to become more skeptical that consent decrees would cure their perceived competitive problems
  - Two sources for this skepticism—
    1. The emergence of several studies purportedly finding anticompetitive price increases in the market in the wake of a divestiture consent decree, *and*
    2. An increasing view that the nonproblematic parts of a merger did not yield significant efficiencies

NB: Both results are subject to vigorous academic dispute

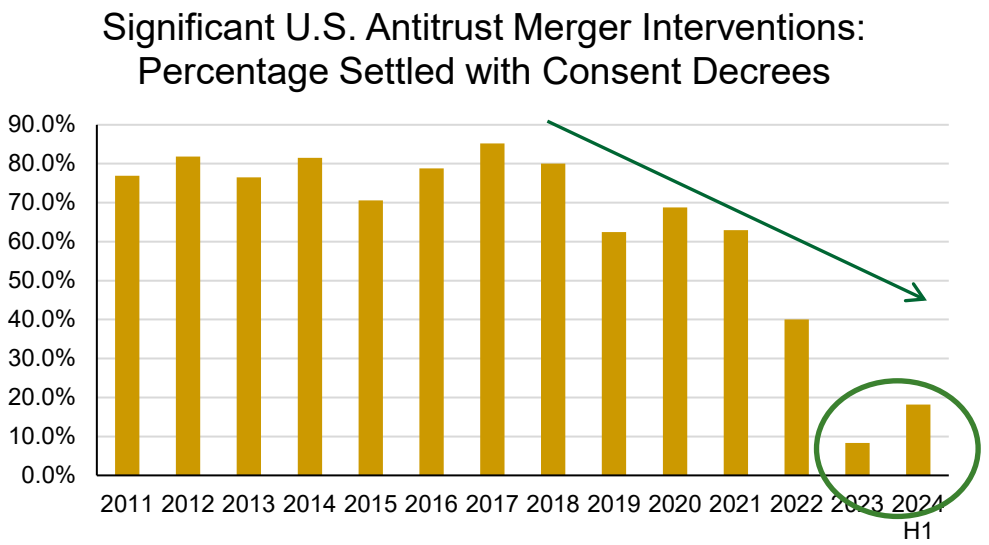
The history

- The Biden administration
  - DOJ
    - As a matter of principle, consent decrees are not usually an acceptable solution to a problematic merger[1]
      - Consent settlements fail frequently and unpredictably
      - The proper remedy for a problematic horizontal merger is a blocking permanent injunction
    - Since Jonathan Kanter was sworn in as AAG On November 16, 2021, the DOJ has not accepted a consent settlement in an investigation
      - The court essentially forced the DOJ to accept a consent decree in litigation
  - FTC
    - Since Lina Khan was sworn in as FTC Chair on June 15, 2021, the Commission has exhibited increasing resistance to accepting consent decrees to settle investigations
      - In 2022, the FTC accepted consent decrees in ten merger investigations
      - After 2022, the FTC has accepted no consent decrees to settle a Section 7 merger concern

[1] Jonathan Kanter, Ass't Att'y Gen., Antitrust Div., U.S. Dep't of Justice, Antitrust Enforcement: The Road to Recovery, Prepared Remarks at the University of Chicago Stigler Center, Chicago, IL (Apr. 21, 2022).

The history

- Consent decree settlements of investigation over time



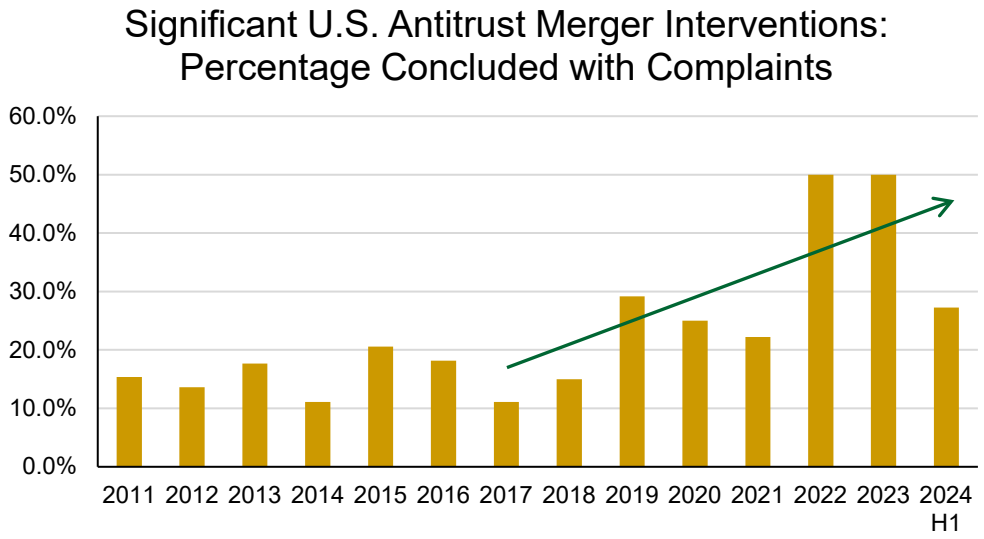
Observe the decline in the Trump administration and the Biden administration to date

These are not Section 7 consent decrees

Source: Dechert LLP, DAMITT Q2 2024: Abandonments Dominate the Podium in Merger Enforcement (Aug. 6, 2024); Dechert LLP, DAMITT 2018 Year in Review (Jan. 24, 2019). Interventions occur when the investigation concludes that the transaction violates Section 7, which is resolved either by consent decree, a complaint, or the parties voluntarily abandoning the transaction.

The history

- Nonsettlement complaints over time



- Agencies increasingly less willing to accept consent settlements at the end of an investigation
- Merging parties increasingly more willing to litigate

Source: Dechert LLP DAMITT Q2 2024: Abandonments Dominate the Podium in Merger Enforcement (Aug. 6, 2024); Dechert LLP, DAMITT 2018 Year in Review (Jan. 24, 2019).

The history

- The Biden administration: “Fix It First”
  - An emerging work-around:
    - In a “fix it first,” the parties restructure the transaction to eliminate the problematic horizontal overlap and file their HSR notifications only on the restructured, nonoverlapping transaction
    - The divestiture sale must be consummated *before* the main transaction closes because the HSR filings will not cover a transaction with the overlap
      - However, the divestiture closing of the divestiture sale may be delayed until the main (restructured) transaction “clears” the merger review
    - The antitrust concern presented by the original overlap must be entirely eliminated by the “fix it first” divestiture to the satisfaction of the investigating agency in—
      - in the business and assets to be divested
      - the manner of divestiture (including any ancillary transaction agreements), *and*
      - the identity of the divestiture buyer

      Otherwise, the agency will challenge the transaction as violating Section 7
    - The merging parties can "litigate the fix" if the investigating agency rejects the "fix it first" solution
    - *The idea*: Since the buyer never takes control of the two overlapping businesses, there is no need for a consent decree

Applies to the DOJ—the FTC will want a consent decree rather than a “fix it first”

Consent Remedies in Horizontal Cases: The Details

Mergers and acquisitions involving competitors are by far most common type of business combination challenged under the merger antitrust laws. We will examine relief in other types of transactions later in the course.

Agency requirements

1. Almost always require the sale of a complete “business”
2. Will permit “trade up” solutions
3. Typically will require a “buyer upfront”
4. Everything associated with the business to be divested must go
   a. Divest all physical assets
   b. Divest all IP
   c. Make designated “key” employees available for hire by divestiture buyer
   d. Assign/release customer contracts and revenues
   e. Transfer all business information
5. Merged firm must provide any necessary short-term transition services and support so that the divestiture can immediately compete
6. Often will require a “monitor” to oversee performance of obligations
7. No long-term entanglements between the merged firm and the divestiture buyer

Agency requirements

8. Agency will require the right of approval over divestiture buyer *and* the divestiture sales agreement
9. Agency will require a very tight deadline for closing the divestiture after final approval of the consent decree
   - 10 business days for buyers upfront
   - 3 months otherwise

   } Typical
10. If the consent decree has a divestiture obligation, it will contain a provision for the appointment of a "trustee" to sell the divestiture assets in the event the merged firm fails to divest in the time required by the decree
11. Agency can withdraw consent, in its discretion, any time before the entry of the final judgment

Agency requirements

12. New development: Prior approval provisions

- The idea
  - Prior approval provisions block the closing of a subsequent transaction within the scope of the provision until the responsible agency provides its written approval for the transaction
- The current practice
  - Employed by both the DOJ and FTC
  - Applies to all future acquisitions by the merged firm in the relevant market
    - When used in the past, applied only to acquisitions that were not HSR-reportable
  - Likely to be included to consent decrees for all types of mergers
  - The FTC has started including provisions in some consent decrees that purport to require the divestiture buyer to obtain the prior approval of the Commission before any sale of the divestiture assets during the term of the consent decree
    - *Query*: Are these provisions enforceable against the divestiture buyer that is not a party to the consent decree?
- Fears
  - The agencies could extend the scope of a prior approval provision beyond the relevant market
    - Could include nationwide wide coverage
    - Could include other products
  - There is no time limit for the responsible agency to act on an application
    - Could kill off a deal through a “pocket veto”

Consent Remedies: The Process

The basic idea

- The process
  1. The enforcement agency and parties agree on the antitrust concern to be resolved
  2. The parties negotiate a package of business operations, assets, and ancillary commitments that would permit a qualified third-party divestiture buyer to maintain the premerger level of competition
  3. The parties memorialize the divestiture package in a proposed consent decree and related documents
  4. The merging parties find a divestiture buyer
  5. The divestiture buyer applies for agency approval
  6. The agency approves the divestiture package and divestiture buyer
     - Assumes the agency requires a “buyer upfront”
     - In some cases, the agency will accept a consent agreement that provides for the identification of the divestiture buyer after the agency accepts the consent settlement
  7. DOJ files complaint and motion for entry of consent decree in federal district court/ FTC provisionally accepts consent order
  8. The agency publishes the proposed consent decree in the federal register and other venues inviting public comments
  9. The court/FTC considers public comments and agency response
  10. The court/FTC enters the consent decree as a final judgment

Consent settlement documents

DOJ (federal district court proceeding)	FTC (FTC administrative proceeding)
Complaint	Administrative complaint

Consent settlement documents

DOJ (federal district court proceeding)	FTC (FTC administrative proceeding)
Complaint	Administrative complaint
Proposed Hold Separate Stipulation and Order —Proposed Final Judgment —[Contained in body of stipulation]	Agreement Containing Consent Orders —Proposed Decision and Order —Order to Maintain Assets

Consent settlement documents

DOJ (federal district court proceeding)	FTC (FTC administrative proceeding)
Complaint	Administrative complaint
Proposed Hold Separate Stipulation and Order —Proposed Final Judgment —[Contained in body of stipulation]	Agreement Containing Consent Orders —Proposed Decision and Order —Order to Maintain Assets
Competitive Impact Statement	Analysis of Proposed Consent Order to Aid Public Comment

Consent settlement documents

DOJ (federal district court proceeding)	FTC (FTC administrative proceeding)
Complaint	Administrative complaint
Proposed Hold Separate Stipulation and Order —Proposed Final Judgment —[Contained in body of stipulation]	Agreement Containing Consent Orders —Proposed Decision and Order —Order to Maintain Assets
Competitive Impact Statement	Analysis of Proposed Consent Order to Aid Public Comment
Hold Separate Stipulation and Order (so ordered by the court)	Decision and Order (accepting consent settlement for public comment and entering Order to Maintain Assets)

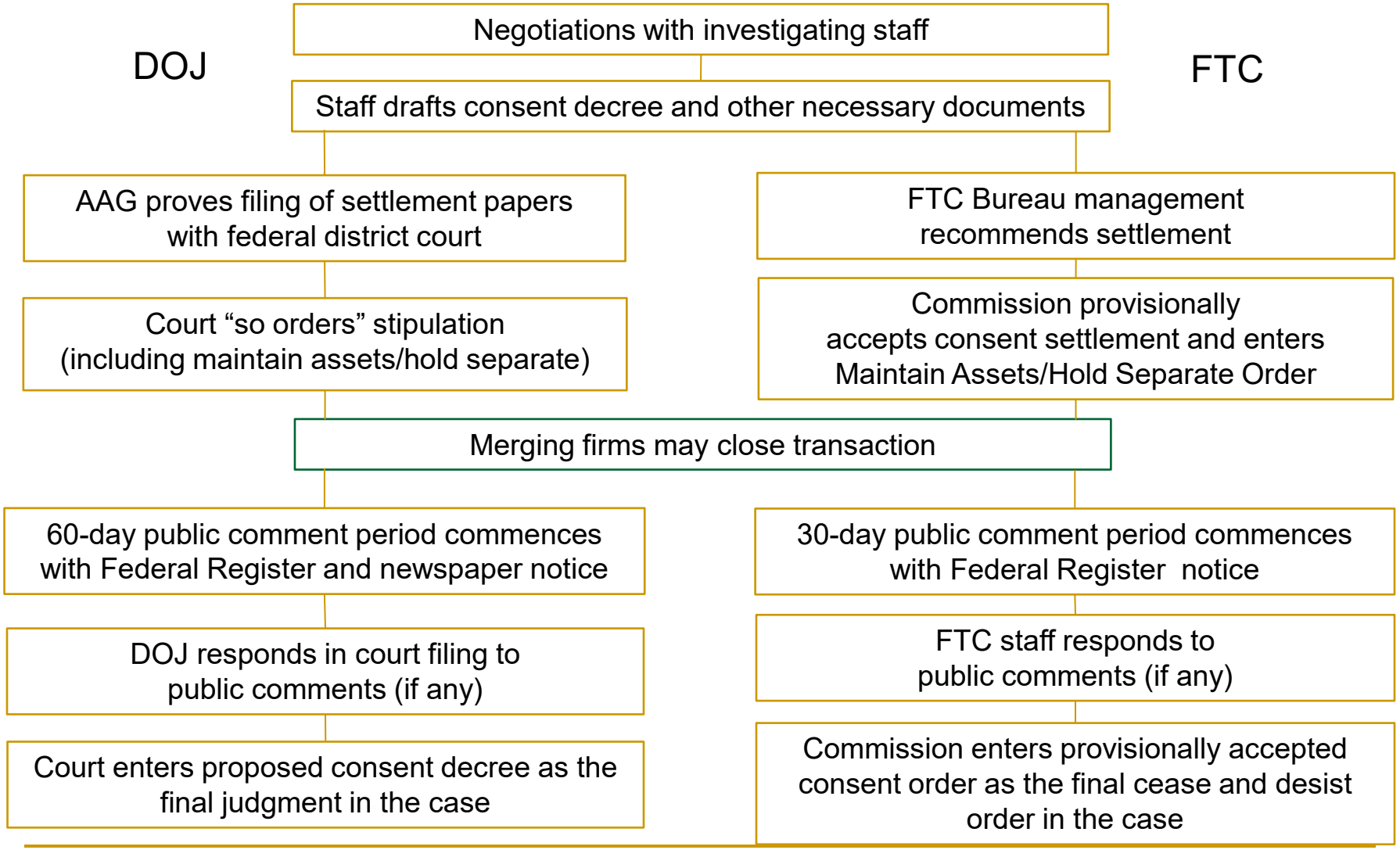
Consent settlement documents

DOJ (federal district court proceeding)	FTC (FTC administrative proceeding)
Complaint	Administrative complaint
Proposed Hold Separate Stipulation and Order —Proposed Final Judgment —[Contained in body of stipulation]	Agreement Containing Consent Orders —Proposed Decision and Order —Order to Maintain Assets
Competitive Impact Statement	Analysis of Proposed Consent Order to Aid Public Comment
Hold Separate Stipulation and Order (so ordered by the court)	Decision and Order (accepting consent settlement for public comment and entering Order to Maintain Assets)
Federal Register and newspaper notice [Public comment period: 60 days]	Federal Register notice [Public comment period: 30 days]

Consent settlement documents

DOJ (federal district court proceeding)	FTC (FTC administrative proceeding)
Complaint	Administrative complaint
Proposed Hold Separate Stipulation and Order —Proposed Final Judgment —[Contained in body of stipulation]	Agreement Containing Consent Orders —Proposed Decision and Order —Order to Maintain Assets
Competitive Impact Statement	Analysis of Proposed Consent Order to Aid Public Comment
Hold Separate Stipulation and Order (so ordered by the court)	Decision and Order (accepting consent settlement for public comment and entering Order to Maintain Assets)
Federal Register and newspaper notice [Public comment period: 60 days]	Federal Register notice [Public comment period: 30 days]
Final Judgment	Decision and Order (final)

Typical settlement process—Overview



Consent Decree Violations

Consent decree violations

- DOJ
  - DOJ consent decrees are technically injunctions ordered by a federal district court
  - Violations are punishable by civil or criminal contempt
  - Actionable contempt requires a showing by “clear and convincing evidence” that the defendant violated a “clear and unambiguous” prohibition in the consent decree
- FTC
  - FTC consent orders are technically cease and desist orders issued by the FTC
  - Violations are subject to civil penalties in federal district court
    - The maximum amount of the penalty today has been inflation-adjusted to $51,744 for 2024
    - If the district court enters an injunction in aid of a Commission order pursuant to FTC Act § 5(l), violations of that injunction are subject to civil and criminal contempt sanctions

Consent decree violations

- DOJ
  - A finding of contempt in the D.C. Circuit requires a showing by "clear and convincing evidence" that the defendant violated a "clear and unambiguous" prohibition in the consent decree[1]
  - New innovation in the Trump administration
    - Recent DOJ consent decrees contain language designed to lower the evidentiary standard for DOJ to prove civil contempt for a consent decree violation from clear and convincing evidence to a preponderance of the evidence:

> The United States retains and reserves all rights to enforce the provisions of this Final Judgment, including its right to seek an order of contempt from this Court. Defendants agree that in any civil contempt action, any motion to show cause, or any similar action brought by the United States regarding an alleged violation of this Final Judgment, the United States may establish a violation of the decree and the appropriateness of any remedy therefor by **a preponderance of the evidence**, and they waive any argument that a different standard of proof' should apply.[2]

[1] *See* United States v. Microsoft Corp., 980 F. Supp. 537, 541 (D.D.C. 1997). Other circuits have similar requirements, although the articulation may be different.
[2] *See* United States v. TransDigm Grp. Inc., No. 1:17-CV-02735-ABJ, 2018 WL 2382602, at *9 (D.D.C. Apr. 4, 2018).

Consent decree violations

- FTC
  - Violations of an FTC cease and desist order issued under FTC Act § 5 are subject to civil penalties and possible subsequent criminal contempt sanctions
  - Civil penalties: FTC Act § 5(l)

> Any person, partnership, or corporation who violates an order of the Commission after it has become final, and while such order is in effect, shall forfeit and pay to the United States a civil penalty of not more than $10,000 for each violation, which shall accrue to the United States and may be recovered in a civil action brought by the Attorney General of the United States. Each separate violation of such an order shall be a separate offense, except that in a case of a violation through continuing failure to obey or neglect to obey a final order of the Commission, each day of continuance of such failure or neglect shall be deemed a separate offense. In such actions, the United States district courts are empowered to grant mandatory injunctions and such other and further equitable relief as they deem appropriate in the enforcement of such final orders of the Commission.[1]

    - The maximum amount of the penalty today has been inflation-adjusted to $51,744 for 2024
    - Civil penalty actions are subject to the preponderance of the evidence standard
  - Enforcement injunctions
    - If the district court enters an injunction in aid of a Commission order pursuant to Section 5(l), violations of that injunction are subject to civil and criminal contempt sanctions

[1] 15 U.S.C. § 5(l).

“Litigating the Fix”

Options if the agency refuses to settle

- If the agency refuses to settle at the end of an investigation, the merging parties have three choices—
  1. They can preempt litigation by voluntarily terminating their merger agreement and withdrawing their HSR filings
  2. They can proceed to court and litigate the merits of the original deal
     - The agency will litigate to obtain what the agency believes is a suitable permanent injunction (almost always a blocking injunction in a preclosing challenge)
  3. They can "litigate the fix"
     - That is, they can contractually implement their proposed divestiture consent decree by agreeing to sell the proposed divestiture business and assets to a third party
     - The court will evaluate the merits of the transaction with the "fix" in place, that is, it will evaluate—
       - Whether the main transaction, without the business and assets subject to the fix, violates Section 7, *and*
       - Whether the fix—including the business and assets to be divested and the qualifications of the divestiture buyer—is sufficient to preserve competition in the alleged problematic market
         - If the fix will not preserve competition, then the main transaction violates Section 7

"Litigating the fix"

- Reasons the agency might reject a proffered fix—
  1. Does not cover all the relevant markets of concern to the agency,
  2. Fails to include all the assets the agency believes are necessary for the divestiture buyer to preserve the premerger level of competition, *or*
  3. Does not involve a divestiture buyer with the ability or resources the agency believes—
     a. Is financially viable, *or*
     b. Lacks the ability or incentive to preserve the premerger level of competition

"Litigating the fix"

- Burden of proof in litigating the fix
  - The burden is on the parties to show that the fix defeats the agency prima facie case against the original deal
  - Depending on the case, this may require the merging parties to—
    - Defeat the agency prima facie case in the relevant markets not addressed by the fix
    - Persuade the court that the necessary assets in the hands of a qualified divestiture buyer will eliminate any reasonable likelihood of an anticompetitive effect in the relevant market in which the fix operates
    - Persuade the court that the divestiture buyer has the incentive and ability with the divestiture assets to preserve the premerger level of competition in the relevant market in which the fix operates

In many if not most cases, the merging parties will have to do all three

If the "fix" does not defeat the government's prima facie case in some market, then the restructured transaction violates Section 7

"Litigating the fix"

- Collateral attack
  - Third parties can collaterally attack the sufficiency of a DOJ/FTC consent decree in their own Section 7 action
  - This is what a group of states did in the T-Mobile/Sprit deal after the DOJ accepted a consent decree[1]

[1] *See* New York v. Deutsche Telekom AG, 439 F. Supp. 3d 179 (S.D.N.Y. 2020). Unfortunately, the states did not prevail in their challenge. In retrospect, most observers now believe that the DOJ consent decree in fact failed to preserve competition. We will examine T-Mobile/Sprint later in the course.

CLASS 6 SLIDES

Unit 6. Merger Antitrust Litigation

Professor Dale Collins
Merger Antitrust Law
Georgetown University Law Center

September 12, 2024

Possible outcomes in DOJ/FTC reviews

Close investigation

- Waiting period terminates at the end of the investigation with the agency taking no enforcement action, or
- Agency grants early termination prior to normal expiration

Litigate

- DOJ: Seeks preliminary and permanent injunctive relief in federal district court
- FTC: Seeks preliminary injunctive relief in federal district court
  Seeks permanent injunctive relief in administrative trial

Settle w/consent decree

- Typical resolution for problematic mergers
- DOJ: Consent decree entered by federal district court
- FTC: Consent order entered by FTC in administrative proceeding

Parties terminate transaction

- Parties will not settle at the agency's ask and will not litigate, or
- Agency concludes that no settlement will resolve the agency's concerns and the parties will not litigate
  - Examples: AT&T/T-Mobile, NASDAQ/NYSE Euronext

"Fix it first"

- Merging parties restructure transaction to eliminate problematic overlap by narrowing assets to be purchased or selling assets to a third party
- Merging parties file new HSR notifications for the restructured transaction
  - HSR reports also may need to be filed for the restructured transaction
- When done to the agency's satisfaction, eliminates the need for a consent decree or other enforcement act

Plaintiffs and Forums

Antitrust merger litigation generally

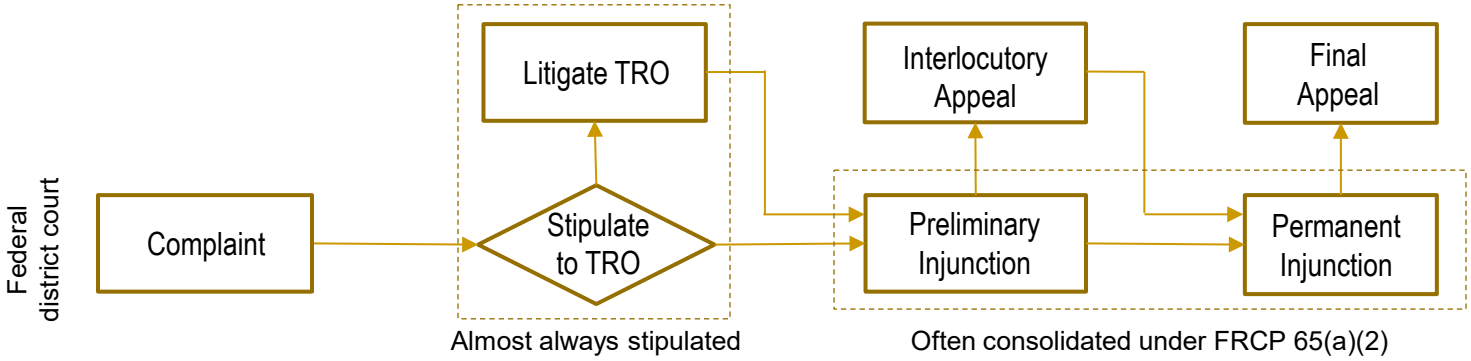
Plaintiff	Trial Forum	Appeal
DOJ	Federal district court	Court of appeals
FTC –Preliminary inj. –Permanent inj.	 Federal district court FTC administrative trial —Hearing before an ALJ —Commission decision	 Court of appeals Any court of appeals with venue
State AGs*	Federal district court	Court of appeals
Private parties*	Federal district court	Court of appeals

* May also bring state claims in state court or join state claims to federal claims in federal court

Typical Litigation Paradigms

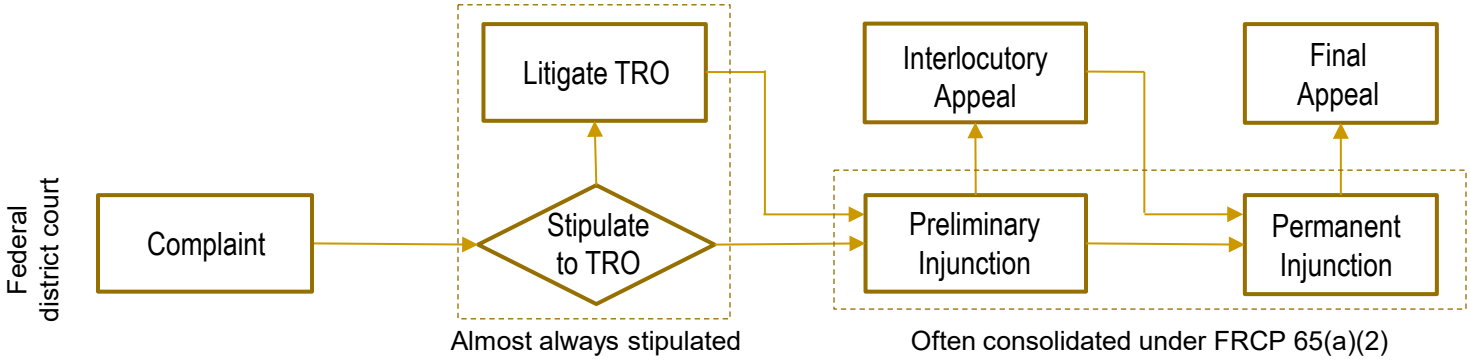
Typical litigation paradigms

DOJ preclosing challenge

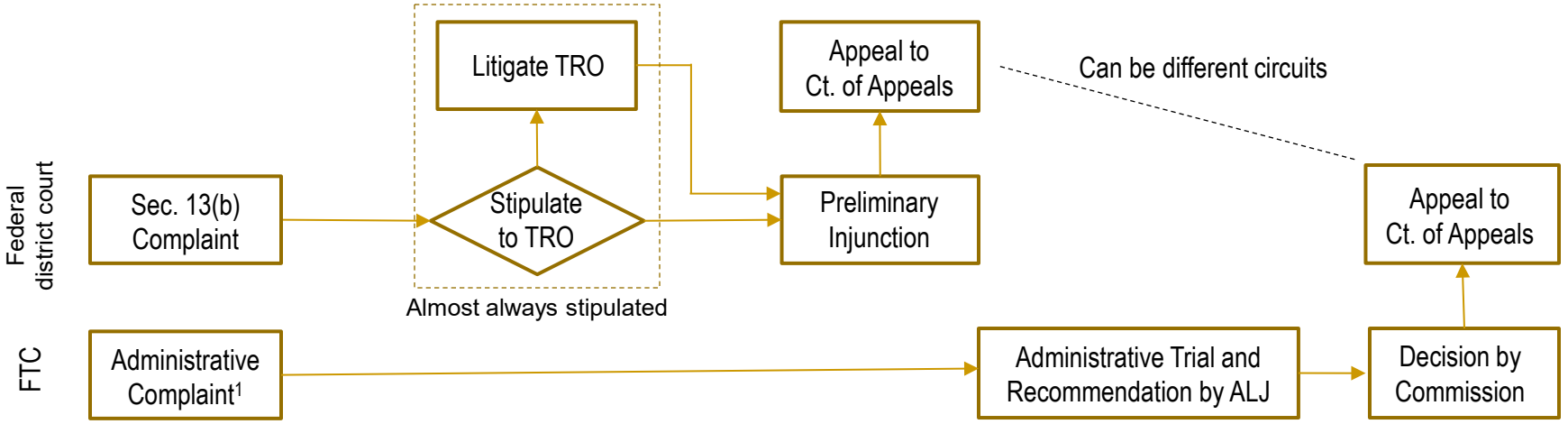


Typical litigation paradigms

DOJ preclosing challenge



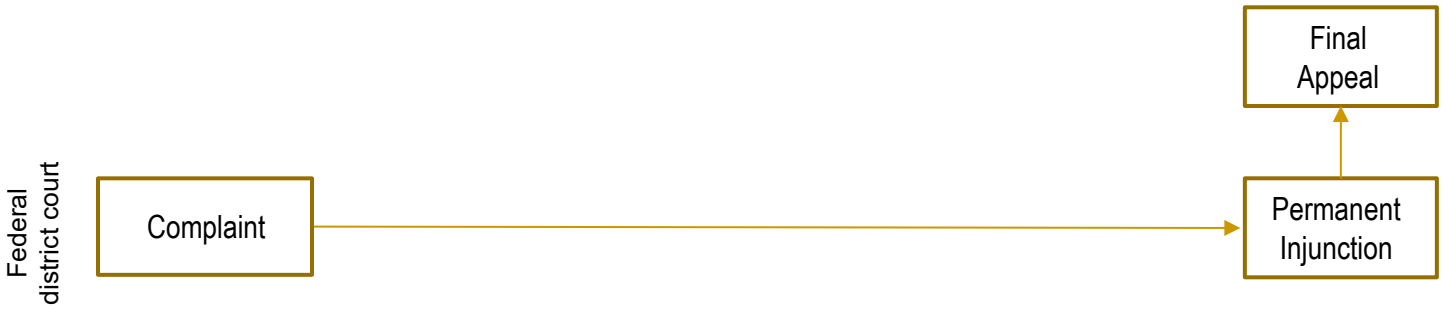
FTC preclosing challenge



[1] The FTC must issue its administrative complaint within 20 days of the entry of a preliminary injunction. FTC Act § 13(b). As a matter of practice, the FTC issues its administrative complaint before or on the date it seeks a preliminary injunction.

Typical litigation paradigms

DOJ postclosing challenge



FTC postclosing challenge

Litigation timing

- WDC views on timing for preclosing challenges

Proceeding	Plaintiff	Formum	Likely timing
Preliminary injunction	DOJ or FTC	Federal district court	6.5 months from filing of the complaint
Appeal from the grant or denial of a PI	DOJ or FTC	Federal court of appeals	Likely to be granted expedited treatment, in which case 6 months
Full trial on the merits	DOJ	Federal district court	Typically consolidated with PI hearing under Rule 65(a)(2): 6.5 months from filing of the complaint
"Recommended decision" by the ALJ[1]	FTC	FTC administrative law judge (ALJ)	Within 1 year from issuance of administrative complaint
Decision by the Commission	FTC	Full FTC	At the Commission's discretion
Appeal from an FTC decision on the merits	FTC	Federal court of appeal	One year or more

This timing is critical to know in the negotiation of the termination date in the merger agreement

Aside: Constitutional challenges to the FTC

- History
  - Prior to 2023
    - Constitutional challenges to the FTC's administrative adjudicative process could only be made in the course of the administrative adjudication
    - However, the administrative agency is not competent to decide the constitutionality of its own processes, so the resolution of the constitutional claims had to await an appeal to the court of appeals following a final administrative decision
  - *Axon* (2023)
    - In Axon Enterprise v. FTC,[1] the Supreme Court rejected this view and held that constitutional challenges to the structural aspects of an agency adjudicative process may be litigated collaterally in district court
    - Constitutional challenges related to the conduct of a particular administrative adjudication still must be litigated in the administrative proceeding
  - Upshot
    - Respondents in FTC administrative adjudications are raising raised constitutional challenges to the FTC's adjudicative process in—
      - FTC Act 13(b) preliminary injunction proceedings (raised as affirmative defenses and counterclaims), *and*
      - Collateral district court proceedings (raised as claims)
    - *Query*: Is it legal malpractice today not to raise a constitutional challenge to the FTC's administrative adjudicative process if the FTC commences administrative litigation against the deal?

[1] 142 S. Ct. 895 (2023).

Aside: Constitutional challenges to the FTC

- *Example*: Intercontinental Exchange/Black Knight[1]
  - Raised as defenses to the PI and independently as counterclaims for a declaratory judgment
    1. Constraints on removal of the Commissioners and the Administrative Law Judge violate Article II of the Constitution and the separation of powers
    2. Congress unconstitutionally delegated legislative power to the Commission by failing to provide an intelligible principle by which the Commission would exercise the delegated power
       - The idea here appears to be that the FTC's ability to assign matters to agency adjudication rather than federal court litigation without an intelligible principle violates the nondelegation doctrine
    3. Granting the relief sought would constitute a taking of Intercontinental Exchange's property in violation of the Fifth Amendment to the Constitution
    4. The adjudication of the Complaint against Intercontinental Exchange through the related administrative proceedings violates Intercontinental Exchange's Seventh Amendment right to a jury trial
    5. The adjudication of the complaint against Intercontinental Exchange through the related administrative proceedings adjudicates private rights and therefore violates Article III of the U.S. Constitution and the Seventh Amendment

[1] Defendant Intercontinental Exchange, Inc.'s Answer and Affirmative Defenses and Counterclaims, Defenses Fourth through Eight and Counterclaims ¶¶ 39-48, FTC v. Intercontinental Exchange, Inc., No. 3:23-cv-01710-AMO (N.D. Cal. filed Apr. 25, 2023). The case settled shortly before the PI hearing, so the constitutional issues were not decided. *See* Joint Stipulation For Dismissal Without Prejudice, FTC v. Intercontinental Exchange, Inc., No. 3:23-cv-01710-AMO (N.D. Cal. filed Aug. 7, 2023). *Query*: To what extent did the constitutional challenges put pressure on the FTC to settle?

Injunctive Relief

Types of injunctions in merger cases

Injunction type	Relief ordered	
TRO	Maintain status quo pending decision on a preliminary injunction	
Preliminary injunction	Premerger:	Blocking injunctions
	Postmerger:	Hold separate/preserve assets for divestiture
		Recission in rare cases
Permanent injunction	Premerger:	Blocking injunction
	Postmerger:	Divestiture (recission in one case)

NB: Since actions for injunctive relief sound in equity, they are tried to the court, not to a jury

Winter v. Natural Res. Def. Council, Inc.[1]

- Seminal Supreme Court case on preliminary injunctions
- "A preliminary injunction is an extraordinary remedy never awarded as of right."[2]
- *Winter* test

> A [private] plaintiff seeking a preliminary injunction must establish
> [1] that he is likely to succeed on the merits,
> [2] that he is likely to suffer irreparable harm in the absence of preliminary relief,
> [3] that the balance of equities tips in his favor, and
> [4] that an injunction is in the public interest.[3]

[1] 555 U.S. 7 (2008).
[2] *Id*. at 24.
[3] *Id* at 20.

Winter v. Natural Res. Def. Council, Inc.[1]

- Is there a "sliding scale" among the *Winter* factors?
  - Pre-*Winter*
    - Many courts held that the four factors could be balanced on a sliding scale, so that, for example, a weak showing of likelihood of success could be offset by a strong showing of irreparable harm or public interest considerations
  - Post-*Winter*
    - Some courts have continued using a sliding scale and weighing all four factors as a whole[1]
    - Other provide that the movant must show that all four factors independently weigh in favor of granting the pretrial injunction[2]
      - Most importantly, under this approach a likelihood of success on the merits is an independent, free-standing requirement for a preliminary injunction[3]

[1] *See, e.g.*, Boardman v. Pac. Seafood Grp., 822 F.3d 1011, 1022 (9th Cir. 2016); Davis v. Pension Benefit Guar. Corp., 571 F.3d 1288, 1292 (D.C. Cir. 2009); Navient Sols., LLC v. United States, 141 Fed. Cl. 181, 183–84 (Fed. Cl. 2018) (holding "[n]o single factor is determinative"); Hall v. Edgewood Partners Ins. Ctr., Inc., 878 F.3d 524, 527 (6th Cir. 2017) (holding "[a]s long as there is some likelihood of success on the merits, [the four preliminary injunction] factors are to be balanced, rather than tallied").

[2] *See, e.g.*, Jordan v. Fisher, 823 F.3d 805, 809 (5th Cir. 2016); O'Connor v. Kelley, 644 F. App'x 928, 932 (11th Cir. 2016) (unpublished); Ferring Pharm., Inc. v. Watson Pharm., Inc., 765 F.3d 205, 210 (3d Cir. 2014).

[3] *See, e.g.*, Butts v. Aultman, 953 F.3d 353, 361 (5th Cir. 2020); California v. Azar, 911 F.3d 558, 575 (9th Cir. 2018) ("Likelihood of success on the merits is the most important factor; if a movant fails to meet this threshold inquiry, we need not consider the other factors.") (internal quotation marks omitted); Arborjet, Inc. v. Rainbow Treecare Sci. Advancements, Inc., 794 F.3d 168, 173 (1st Cir. 2015); Aamer v. Obama, 742 F.3d 1023, 1038 (D.C. Cir. 2014); Home Instead, Inc. v. Florance, 721 F.3d 494, 497 (8th Cir. 2013); *see also* A.H. ex rel. Hester v. French, 985 F.3d 165, 176 (2d Cir. 2021) (likelihood of success is the "dominant, if not the dispositive, factor"); Doe v. Trs. of Bos. Coll., 942 F.3d 527, 533 (1st Cir. 2019) ("likelihood of success on the merits is the most important of the four preliminary injunction factors").

Winter v. Natural Res. Def. Council, Inc.

- DOJ/FTC challenges
  - Irreparable harm is presumed to result if the law is violated
    - Other cases hold that the element of irreparable harm is simply not part of the test when the government is the plaintiff and is seeking to prevent a violation of law
  - Balance of the equities
    - The public equities
      - The public interest in effectively enforcing the antitrust laws
      - The public interest in ensuring that effective relief may be ordered if the government succeeds at the trial on the merits (secondary)
    - Where there is a likelihood of success, the public equities have always outweighted the private equities, whatever they may be
      - I am not aware of any merger antitrust case where the court found the private equities outweighed the public equities if the agency demonstrated a likelihood of success on the merits

Therefore, the critical factor when the government seeks a preliminary injunction is the likelihood of success on the merits

Temporary restraining orders (TROs)

- Emergency interim relief a court may enter to maintain the status quo pending a fuller hearing on a motion for a preliminary injunction
- Can be entered ex parte when circumstances require[1]
- Duration[2]
  - Not to exceed 14 calendar days
  - May be extended for good cause by the court for an additional 14 calendar days
  - The parties may agree on a longer extension (stipulated TRO)
  - Short duration is the safeguard against the lack of higher standards
    - Absent consent, if of a longer duration, the TRO will be treated as a preliminary injunction and must conform to the more rigorous preliminary injunction standards
- Standard
  - The standard for issuing a temporary restraining order is the same as the standard for issuing a preliminary injunction
  - BUT the respective harms to the parties and the public interest will be assessed in light of the very limited duration of the TRO (as opposed through the end of the trial on the merits for a preliminary injunction)

[1] Fed. R. Civ. P. 65(b)(1).

[2] Fed. R. Civ. P. 65(b)(2).

Temporary restraining orders (TROs)

- Rarely employed in modern merger antitrust practice
  - Judges strongly dislike the timing pressures of an adjudicated TRO and believe that the litigating parties should be able to agree on a scheduling order that will—
    1. Permit the merging parties to take all necessary discovery on an expedited basis before the preliminary injunction hearing, *and*
    2. Include a stipulation not to close the transaction until the motion for a preliminary injunction is decided
  - Since the same judge will decide preliminary injunction, usually unwise to be the party responsible for *not* reaching an agreement on a stipulated TRO

Preliminary injunctions

- The enabling statutes

DOJ: Clayton Act § 15	FTC: FTC Act § 13(b)
"The several district courts of the United States are invested with jurisdiction to prevent and restrain violations of this Act, and it shall be the duty of the several United States attorneys, in their respective districts, under the direction of the Attorney General, to institute **proceedings in equity** to prevent and restrain such violations."	"Upon a proper showing that, [1] **weighing the equities** and [2] **considering the Commission's likelihood of ultimate success**, [3] such action would be in the **public interest**, and after notice to the defendant, a temporary restraining order or a preliminary injunction may be granted without bond"

Antitrust preliminary injunction standard

- FTC
  - Debate over the Section 13(b) likelihood standard
    - FTC:
      - Often urges that the agency need only show "a fair and reasonable chance of ultimate success on the merits"[1]
      - Another standard, more commonly cited by the courts, is the "serious question" standard (see next slide)

[1] *See* FTC v. Lancaster Colony Corp., 434 F. Supp. 1088, 1090 (S.D.N.Y. 1977); *urged in* FTC v. IQVIA Holdings Inc., No. 23 CIV. 06188 (ER), 2024 WL 81232, at *7 (S.D.N.Y. Jan. 8, 2024).

Antitrust preliminary injunction standard

- FTC: "Serious questions" test

> The issue is whether the Commission has demonstrated a likelihood of ultimate success. The Commission meets its burden if it "raise[s] questions going to the merits so serious, substantial, difficult and doubtful as to make them fair ground for thorough investigation, study, deliberation and determination by the FTC in the first instance and ultimately by the Court of Appeals."[1]

[1] FTC v. Warner Commc'ns, 742 F.2d 1156, 1162 (9th Cir. 1984) (collecting citations); *accord* FTC v. Whole Foods Mkt., Inc., 548 F.3d 1028, 1035 (D.C. Cir. 2008) (Brown, J.); *id*. at 1042 (Tatel, J.); FTC v. H.J. Heinz Co., 246 F.3d 708, 714-15 (D.C. Cir. 2001); FTC v. Meta Platforms Inc., No. 5:22-CV-04325-EJD, 2023 WL 2346238, at *8 (N.D. Cal. Feb. 3, 2023); FTC v. Peabody Energy Corp., 492 F. Supp. 3d 865, 883 (E.D. Mo. 2020); FTC v. RAG-Stiftung, 436 F. Supp. 3d 278, 290 (D.D.C. 2020); FTC v. Wilh. Wilhelmsen Holding ASA, 341 F. Supp. 3d 27, 44 (D.D.C. 2018); FTC v. Sanford Health, No. 1:17-CV-133, 2017 WL 10810016, at *24 (D.N.D. Dec. 15, 2017), *aff'd*, 926 F.3d 959 (8th Cir. 2019); FTC v. Advocate Health Care, No. 15 C 11473, 2016 WL 3387163, at *2 (N.D. Ill. June 20, 2016), *rev'd and remanded*, 841 F.3d 460 (7th Cir. 2016); FTC v. Staples, Inc., 190 F. Supp. 3d 100, 115 (D.D.C. 2016); FTC v. Steris Corp., 133 F. Supp. 3d 962, 966 (N.D. Ohio 2015); FTC v. Sysco Corp., 113 F. Supp. 3d 1, 22 (D.D.C. 2015); FTC v. OSF Healthcare Sys., 852 F. Supp. 2d 1069, 1074 (N.D. Ill. 2012); FTC v. ProMedica Health Sys., Inc., No. 3:11 CV 47, 2011 WL 1219281, at *53 (N.D. Ohio Mar. 29, 2011); FTC v. Lab. Corp. of Am., No. SACV 10-1873 AG MLGX, 2011 WL 3100372, at *16 (C.D. Cal. Feb. 22, 2011); FTC v. CCC Holdings, Inc., 605 F. Supp. 2d 26, 30 (D.D.C. 2009).

[2] *See* FTC v. University Health, 938 F.2d 1206, 1218 (11th Cir.1991); Fruehauf Corp. v. FTC, 603 F.2d 345, 351 (2d Cir. 1979); FTC v. Tronox Ltd., 332 F. Supp. 3d 187, 197 (D.D.C. 2018); FTC v. Staples, Inc., 970 F. Supp. 1066, 1072 (D.D.C. 1997).

Antitrust preliminary injunction standard

- FTC: "Serious questions" test
  - Notwithstanding this test (and some even while citing it), several courts have required the Commission to show a reasonable probability of success on the merits[1]
    - Example: *Tronox* (D.D.C. 2018):

> For relief under Section 13(b), the Commission must establish that "there is a reasonable probability that the challenged transaction will substantially impair competition." F.T.C. v. Staples Inc., 190 F. Supp.3d 100, 114 (D.D.C. 2016).[2]

    - Example*: Meta Platforms* (N.S. Cal. 2023):

> The FTC is therefore required to provide more than mere questions or speculations supporting its likelihood of success on the merits, and the district court must decide the motion based on "all the evidence before it, from the defendants as well as from the FTC." *Id.* (citations omitted); *see* United States v. Siemens Corp., 621 F.2d 499, 506 (2d Cir. 1980) (noting that "the Government must do far more than merely raise sufficiently serious questions with respect to the merits" in demonstrating a "reasonable probability" of a Section 7 violation.).[3]

[1] *See* FTC v. University Health, 938 F.2d 1206, 1218 (11th Cir.1991); Fruehauf Corp. v. FTC, 603 F.2d 345, 351 (2d Cir. 1979); FTC v. RAG-Stiftung, 436 F. Supp. 3d 278, 290 (D.D.C. 2020); FTC v. Tronox Ltd., 332 F. Supp. 3d 187, 197 (D.D.C. 2018); FTC v. Staples, Inc., 970 F. Supp. 1066, 1072 (D.D.C. 1997); *see also* FTC v. Meta Platforms Inc., No. 5:22-CV-04325-EJD, 2023 WL 2346238, at *8 (N.D. Cal. Feb. 3, 2023) (citing United States v. Siemens Corp., 621 F.2d 499, 506 (2d Cir. 1980) (noting in turn that "the Government must do far more than merely raise sufficiently serious questions with respect to the merits" in demonstrating a 'reasonable probability' of a Section 7 violation)).

[2] FTC v. Tronox Ltd., 332 F. Supp. 3d 187, 197 (D.D.C. 2018).

[3] FTC v. Meta Platforms Inc., No. 5:22-CV-04325-EJD, 2023 WL 2346238, at *8 (N.D. Cal. Feb. 3, 2023).

Antitrust preliminary injunction standard

- The FTC standard: "Real-life" treatment
  - *Application*: Regardless of what they say, Section13(b) opinions implicitly appear to apply the same standard as DOJ Section 15 decisions on the merits
    1. The preliminary injunction record in a Section 13(b) proceedings is essentially a fully developed trial record
       - The FTC had months to investigate the transaction and compile the evidence for complete trial record
       - The merging parties, although under severe time contracts for discovery and pretrial briefing, devote the resources necessary to compile the evidence for complete trial record (including expert evidence)
    2. Modern antitrust practice is for courts to write extensive opinions analyzing the likelihood of success on the merits
       - Over the last 10 years, courts have issued opinions in fourteen Section 13(b) petitions (not counting two decisions that were reversed)
         - The average length of these fourteen opinions was 70 pages in typescript
       - Section 13(b) opinions are indistinguishable from opinions issued in Section 7 cases brought by the Department of Justice under a traditional preliminary injunction standard and where the preliminary injunction hearing was consolidated with the trial on the merits under FRCP 65(d) in their analytical depth
    3. No difference in outcome
       - Although courts may articulate different standards for preliminary injunctions sought by the FTC under Section 13(b) and permanent injunctions sought by the DOJ under consolidated Section 15 proceedings, the findings of fact in each (non-reversed) Section 13(b) case would have produced the same results if the actions had been brought by the DOJ under Section 15 for a permanent injunction

Caution: The less experienced a judge in complex business litigation, the more likely the judge will see a Section 13(b) proceeding in a more traditional PI light

Antitrust preliminary injunction standard

- The FTC standard: "Real-life" treatment
  - *Application*: Regardless of what they say, Section13(b) opinions implicitly appear to apply the same standard as DOJ Section 15 decisions on the merits (con't)
    - There are probably two reasons why Section 13(b) and Section 15 opinions are indistinguishable
      1. The record in preliminary injunction cases under Section 13(b) are as fully developed as permanent injunction cases under Section 15 and the substantive antitrust outcome in a full administrative trial on the merits is unlikely to different from the result in the Section 13(b) proceeding

Antitrust preliminary injunction standard

- The FTC standard: "Real-life" treatment
  - *Application*: Regardless of what they say, Section13(b) opinions implicitly appear to apply the same standard as DOJ Section 15 decisions on the merits (con't)
    - There are probably two reasons why Section 13(b) and Section 15 opinions are indistinguishable (con't)
      2. Courts recognize that if a blocking preliminary injunction is entered, the parties will abandon their transaction
         - By the time a preliminary injunction decision is made, the transaction has been pending for between 18 to 24 months.
         - If a preliminary injunction entered, a Commission decision on the Section 7 legality for the merger will not be decided for another 18 to 24 months.
         - The Commission rarely decides against a complaint it has issued. Therefore, to prevail the parties must appeal the Commission's decision, which even if expedited will take another 6 to 8 months.
         - A transaction cannot survive in limbo for the length of time it would take for the parties to defend an administrative proceeding, so the parties will abandon their transaction if a preliminary injunction is entered rather than litigate on the merits.[1]

[1] *See, e.g.*, FTC v. Advocate Health Care Network, 841 F.3d 460 (7th Cir. 2016), *on remand*, 2017 WL 1022015 (N.D. Ill Mar. 16, 2017); FTC v. IQVIA, No. 1:23-cv-06188-ER (S.D.N.Y. Dec. 29, 2023; public version Jan. 8, 2024); FTC v. Hackensack Meridian Health, Inc., No. 20-cv-18140, 2021 WL 4145062 (D.N.J. Aug. 4, 2021) (unpublished), *aff'd*, 30 F.4th 160 (3d Cir. 2022); FTC v. v. Peabody Energy Corp., No. 4:20-CV-00317-SEP, 2020 WL 5893806 (E.D. Mo. Oct. 5, 2020); FTC v. Sanford Health/Sanford Bismarck, No. 1:17-CV-133, 2017 WL 10810016 (D.N.D. Dec. 15, 2017), *aff'd*, No. 17-3783, 2019 WL 2454218 (8th Cir. June 13, 2019); FTC v. Wilh. Wilhelmsen Holding AS, No. 18-cv-00414-TSC, 2018 WL 4705816 (D.D.C. Oct. 1, 2018); FTC v. Staples Inc., 190 F. Supp. 3d 100 (D.D.C. 2016); FTC v. Sysco Corp., 113 F. Supp. 3d 1 (D.D.C. 2015).

Antitrust preliminary injunction standard

- FTC
  - FTC strategic response
    - The FTC has tried to avoid courts judging Section 13(b) complaints for a preliminary injunction under something more akin to permanent injunction standard by significantly diversifying where it brings its cases
    - In particular, the FTC does not like to bring cases in the District of Columbia, where the judges are more familiar with antitrust law—and the Circuit has more antitrust precedent, especially in mergers—than other circuits.
      - Although there is nothing in the public record that confirms this, it is apparent that the FTC (and the DOJ) want to avoid the District of Columbia, its experienced judges, and the Circuit's precedent.
    - As the FTC brings cases in districts that have little or no experience with merger antitrust cases, the probability increases that the judges will take the "serious question" language seriously and significantly lower the threshold for entering a preliminary injunction

Interim injunctions—Appeals

- Appeal
  - The grant or denial of a motion for a preliminary injunction is immediately appealable as a matter of right under 28 U.S.C. § 1292(a)(1):

> [T]he courts of appeals shall have jurisdiction of appeals from: (1) Interlocutory orders of the district courts of the United States . . . or of the judges thereof, granting, continuing, modifying, refusing or dissolving injunctions, or refusing to dissolve or modify injunctions, except where a direct review may be had in the Supreme Court;

  - The standard of review is abuse of discretion
    - Review legal conclusions de novo
    - Review factual findings for clear error

Permanent injunctions

- Identical to usual federal court preliminary injunction standard
  - EXCEPT that a permanent injunction requires *actual* success on the merits[1]
  - Success on the merits requires proof by the preponderance of the evidence
  - Also, the record for a decision on a permanent injunction may be more developed if additional discovery and briefing have occurred since the preliminary injunction hearing
- Factual findings in the preliminary injunction hearing
  - Not binding in the permanent injunction trial (or even entitled to deference)
  - BUT unlikely to be overturned in the absence of new evidence

[1] Amoco Prod. Co. v. Vill. of Gambell, Alaska, 480 U.S. 531, 546 n.12 (1987).

Appeals

Appeals: Jurisdiction

- Statutorily prescribed
  - Courts of appeal must be assigned jurisdiction by statute to hear an appeal
- Jurisdiction in three types of appeal
  1. Appeals of final judgments (28 U.S.C. § 1291)
  2. Appeals of the grant or denial of injunctive relief (28 U.S.C. § 1292(a))
  3. Interlocutory appeals (28 U.S.C. § 1292(b))

Appeals: Jurisdiction

- Appeals of final judgments—28 U.S.C. § 1291
  - Courts of appeal have appellate jurisdiction over all “final decisions” of the district courts
  - Appeal may be taken as a matter of right

Appeals: Jurisdiction

- Certified interlocutory appeals—28 U.S.C. § 1292(b)
  - Appeals of interlocutory orders are not as of right
  - Certification: Two-tiered screening procedure—
    1. District court certification:
       1. the order involves a controlling question of law
       2. as to which there is substantial ground for difference of opinion, *and*
       3. that an immediate appeal from the order may materially advance the ultimate termination of the litigation[1]
    2. Court of appeals acceptance: Discretionary with the appellate court
  - Rarely successfully invoked

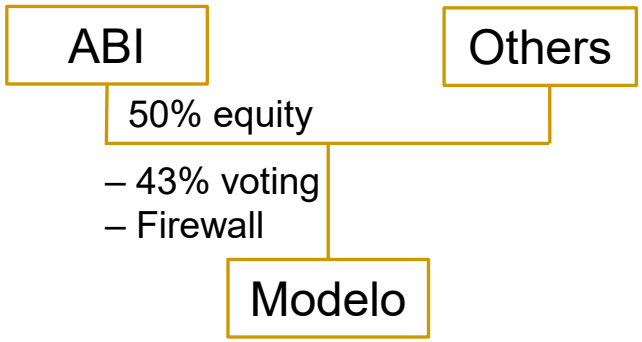
Appeals: Standards of review

- Interpretation of the law—De novo
  - *Query*: Is the FTC accorded *Chevron* deference?
- Finding of facts
  - In a bench trial—Clearly erroneous rule
  - By a jury—Substantial evidence rule
  - By the FTC—Substantial evidence rule
- Others matters
  - In federal court—Abuse of discretion
  - FTC—[No articulated rule? But in any event, very deferential]

ABI/Grupo Modelo case study

What was the deal?

- ABI owned 50% of the equity of Grupo Modelo
  - But only owned 43% of the voting securities
  - Also bounded by some firewalls, so Modelo operated independently of ABI
- ABI to buy the remaining 50% for $20.1 billion
  - Announced June 28, 2012
  - 30% premium (= $6.03 billion)



Some background

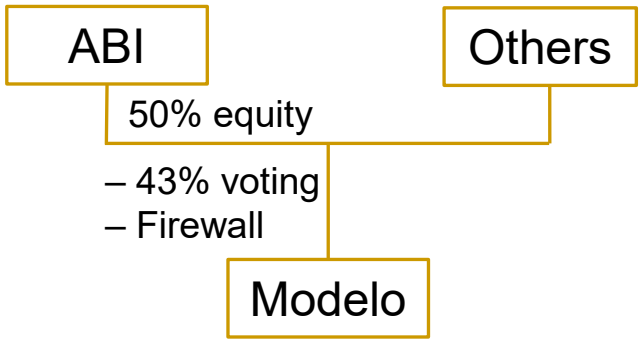
- ABInbev (ABI)
  - #1 firm in the U.S. beer market with a 39% share
  - Budweiser, Busch, Michelob, Natural Light, Stella Artois, Goose Island, Beck's, and 39 other brands of beer
- MillerCoors (joint venture between SAB Miller and MolsonCoors)
  - #2 firm with a 26% share
  - Coors, Coors Light, Miller Genuine Draft, Miller High Life, Miller Lite, Extra Gold Lager, Hamm's
- Grupo Modelo
  - #3 firm with a 7% share
  - Corona Extra, Corona Light, Modelo Especial, Pacifico, Negra Modelo and Victoria
- Other 28%
  - Heineken, Sam Adams, Yuengling, craft beers, others—all relatively small

Why did ABI want to buy Modelo?

- TO MAKE MONEY
  1. Could expand the business and earn more profits
  2. Wanted to secure the rights to sell Corona and Modelo's other Mexican brands worldwide, particularly in Europe and South America.
  3. Could reduce costs
     - Expected $600 million annually in cost savings and synergies
     - Later raised to $1 billion
  4. Was the elimination of competition also an unexpressed goal?

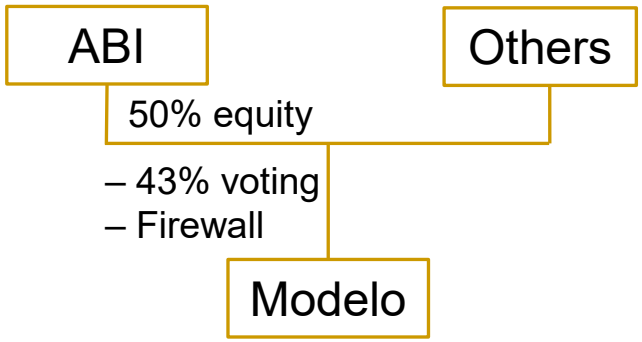
Why did Modelo want to sell?

- TO MAKE MONEY
  - Remember 30% premium (> $6 billion)



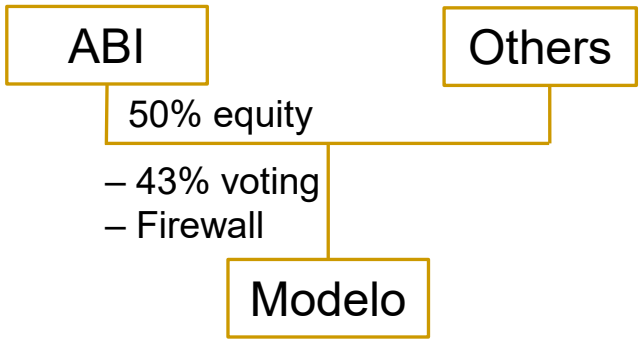
Why would ABI pay a 30% premium?

- Had to pay some premium if it wanted to buy the remaining 50% ("control premium")
- Sellers were bargaining for a portion of the synergies



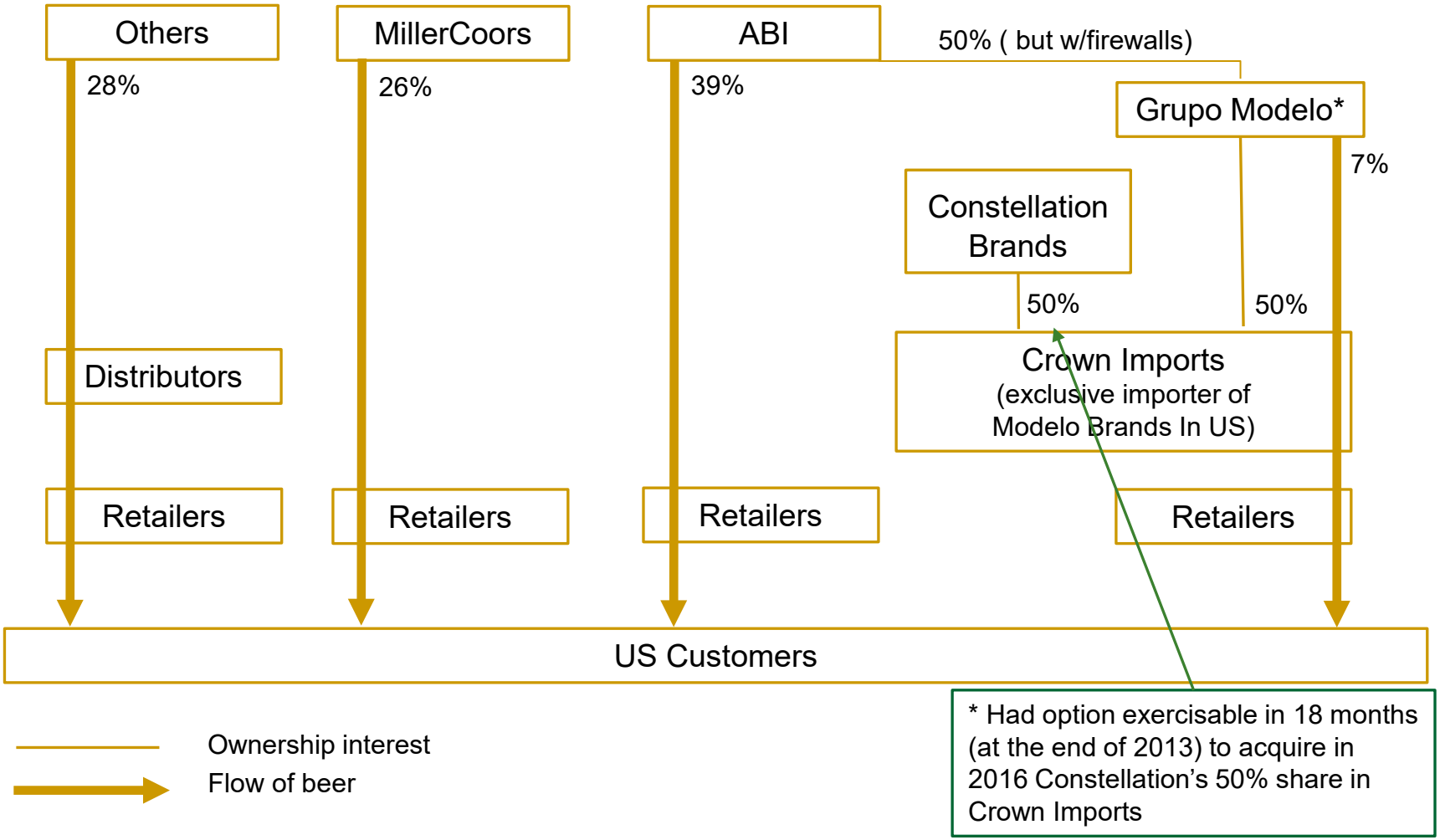
Would the deal still be profitable to ABI?

- Present discounted value of annually recurring synergies at 8%/year
  - $600 million/year in perpetuity → $7.5 billion
  - $600 million/year in 10 years → $4.03 billion
  - $1 billion/year in perpetuity → $12.5 billion
  - $1 billion in 10 years→$6.71 billion
- RECALL: Premium = $6 billion
  - With a time horizon of 10 years at 8%, ABI would—
    - Lose money on a PDV basis if synergies were $600 million/year
    - Make over $700 million in present value if synergies were $1 billion/year
  - *WDC*: ABI may have had a time horizon greater than 10 years and a discount rate of < 8%
    - At $600M/yr for 25 years at 8%, the PDV = $6.40B
    - At $600M/yr for 20 years at 7%, the PDV = $6.36B



Query: What is going on here?

U.S. beer landscape premerger



What was ABI's antitrust argument?

1. Acquisition was too small to make a competitive difference
   - Modelo was a "fringe" firm
   - ABI (39%) + Modelo (7%) = 46%
   - Not materially different than 39%
   - HHIs bad, but not that bad

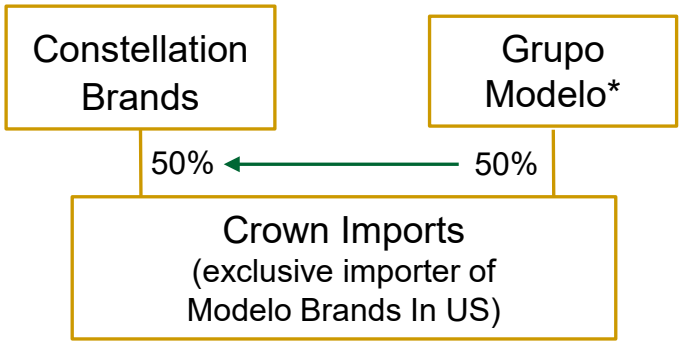
	Share	HHI	
ABI	39%	1521	
MC	26%	676	
Modelo	7%	49	
Heineken	6%	36	
Others	22%	69	Say 7 firms
	100%	2351	
Combined	46%		
Delta		546	
Post-HHI		2897	

2. *Coke/Pepsi model*: ABI and MillerCoors were in an intensely competitive duopoly—the acquisition will not change this competition

3. Two companies largely did not compete head-to-head in beer segments
   - *Subpremium*: Busch (ABI), Keystone (MC)—No Modelo
   - *Premium*: Bud Light, Coors Light, MillerLite—No Modelo
   - *Premium plus*: Bud Light Platinum, Michelob Ultra (ABI) —No Modelo
   - *High-end*: Corona (Modelo), Heineken, Stella Artois (ABI), other imports—No ABI

What was ABI's strategy to get the deal closed?

- Pre-HSR filing: The Constellation Brands deal
  - ABI agreed to sell Constellation the 50% of Crown Imports that Modelo owned
    - Crown Imports is the exclusive distributor of Modelo brands in the U.S.
      - Third largest beer distributor in the U.S. after ABI and MillerCoors
    - World's leader in premium wine (most notably Robert Mondavi)
  - ABI also agreed to extend the distributor agreement giving Crown exclusive rights to the U.S. for ten years
    - Constellation would have complete control over distribution, marketing and pricing for all Modelo brands in the U.S.
  - The deal
    - Purchase price: $1.85 billion (8.5x EBIT)
    - ABI has a buyback option at 10-year intervals at 13x EBIT



* ABI had an option exercisable in 18 months (at the end of 2013) to acquire in 2016 Constellation's 50% share in Crown Imports

What was ABI's strategy to get the deal closed?

- Pre-HSR filing: Why did ABI do the CB deal?
  - Did it arguably solve the likely DOJ concerns?
    - Probably not: "Fix" (if that is what it was) did not at all conform to DOJ historical remedies
    - Perhaps ABI did not anticipate a U.S. antitrust problem
  - If CB deal was not designed to solve the antitrust concerns, then why ABI do it?
    - Flip CB from a strong opponent of the transaction to a strong supporter
  - *QUERY*: Why would CB oppose the deal?
    - Modelo had no U.S. distribution system other than Crown
      - BUT ABI could easily distribute Modelo brands through ABI's own distribution system
      - If ABI acquired Modelo, Crown Imports would have been dead at the end of the term of its current Modelo supply agreement
  - Also, ABI had limited financial exposure (with 10-year buyback option)
    - *Query*: What else did the 10-year buyback option do?
      - Reduced CB's incentives to compete aggressively against ABI

What was ABI's strategy to get the deal closed?

- Pre-HSR filing: Why did CB do the deal?
  - TO MAKE MONEY
    - At risk if ABI acquired Modelo since ABI could use its own distribution system and did not need Crown Imports
    - PLUS: If Grupo Modelo stayed independent, Modelo had an option, exercisable at the end of 2013, to acquire in 2016 Crown's 50% interest in Crown Imports
  - *Must have been a really big concern*: The price of CB shares INCREASED 39.7% on the day of the announcement compared to the week before (despite missing revenue targets)

Constellation Brands

What was ABI's strategy to get the deal closed?

- Pre-HSR filing: Why did CB do the deal?
  - Constellation Brands Inc. (STZ) historical stock prices: 3/1/2012 to 7/30/2012

Was the DOJ satisfied?

- No
  - Filed complaint on January 31, 2013, to enjoin deal
  - Two counts
    1. Merger violates Section 7 in 26 local markets in the sale of beer
    2. Merger violates Section 7 in the national market for the sale of beer

Was the DOJ satisfied?

1. Unrestructured merger violates Section 7 in 26 local markets in the sale of beer:

   a. 20 markets: Postmerger HHI > 2500; delta $\geq$ 472

   b. 6 markets: Postmerger HHI $\geq$1822; delta $\geq$ 387

APPENDIX A

Relevant Geographic Markets and Concentration Data

Market	Combined Market Share	Post-Merger HHI	Delta HHI
Oklahoma City, OK	64	4886	1000
Salt Lake City, UT	57	3900	739
Tampa/St Petersburg, FL	56	3720	621
Houston, TX	55	3660	840
Jacksonville, FL	56	3544	531
Minneapolis/St Paul, MN	50	3525	733
Denver, CO	47	3510	486
Birmingham/Montgomery, AL	52	3408	503
Memphis, TN	52	3370	482
Las Vegas, NV	49	3332	832
Dallas/Ft Worth, TX	46	3277	643
Orlando, FL	51	3273	570
Los Angeles, CA	51	3265	1207
Phoenix/Tucson, AZ	48	3139	564
Raleigh/Greensboro, NC	50	3121	485
Miami/Ft Lauderdale, FL	48	3067	964
Hartford, CT/Springfield, MA	51	3053	663
Richmond/Norfolk, VA	48	3044	472
Chicago, IL	35	2919	542
New York, NY	43	2504	778
Atlanta, GA	41	2489	433
Sacramento, CA	40	2382	697
Boston, MA	43	2353	387
San Diego, CA	39	2242	651
Baltimore, MD/Washington, DC	36	1944	465
San Francisco/Oakland, CA	34	1822	563
United States	46	2866	566

Was the DOJ satisfied?

2. Unrestructed merger violates Section 7 in the national market for the sale of beer
   a. *PNB* presumption: Postmerger combined share 46%; HHI > 2800; delta = 566
   b. Maverick theory in the national market
      - ABI and MillerCoors, the mass beer producers, collectively had a 65% share—large enough to be able to affect market prices
      - ABI and MillerCoors are accommodating firms, with most other brewers were willing to follow ABI's price leadership
      - Grupo Modelo was a maverick—
        - Unwilling to follow ABI's price leadership
        - Has caused ABI to price lower than it would have otherwise
        - Remember, although Modelo was owned 50% by ABI, the firewall prevented ABI from influencing ABI's competitive strategy
      - ABI's acquisition would eliminate Grupo Modelo as a maverick and increase the likelihood and effectiveness of coordination between ABI and MillerCoors (and perhaps other brewers)
   c. Unilateral effects theory
      - Modelo's aggressive pricing for Corona had been a significant unilateral constraint on the pricing by ABI of its beers
      - Modelo had been an aggressive innovator, and its acquisition would reduce innovation competition with ABI

Was the DOJ satisfied?

3. The CB "fix" was insufficient
   - *Supply*: Crown completely reliant on ABI for the supply of Modelo brands
   - *Follow the leader*: CB consistently urged Modelo to follow ABI's price leadership
   - *Modelo distribution agreement*
     - ABI could terminate the distribution agreement at the end of the 10-year term—take away supply PLUS brand names
     - ABI would then have full control over U.S. distribution of Modelo-branded beer
   - *Buyback option* (on 10-year intervals)

   - *Query*: Why did the DOJ object to the limited term of the distribution agreement and the buyback option?
     1. If either was exercised, it would eliminate Modelo as an independent competitor in the U.S.
     2. The threat of exercise could discipline CB's competition with ABI
        - The less disruptive, the greater likelihood the option would not be exercised

Why did CB intervene in the DOJ action?

- CB sought to intervene as a party defendant. Why?
  - The “fix” was a great deal for CB and it wanted to do everything it could to see that the ABI/GM deal closed and was not enjoined
  - By being before the court, CB could argue first-hand that it would be an aggressive competitor—and so increase the chances the main deal *and the fix* would go through

What was ABI's second fix?

- ABI and CB announced a revised deal on February 14, 2013
  - Less than one month into the litigation
- Revised terms:
  - No buyback option
  - ABI to sell Modelo's new Piedras Negras brewery to CB
  - Rights in perpetuity to Modelo's U.S. brands distributed by Crown
  - Addition to purchase price: $2.9B (over original $1.85 billion) = $4.75B total

Did the second fix resolve the DOJ's concerns?

- No
- Why?
  - Piedras Negras would supply only 60% of current U.S., leaving Crown dependent on ABI for the rest and for additional growth

Did the second fix resolve the DOJ's concerns?

- Constellation Brands Inc. (STZ) historical stock prices: 3/1/2012 to 3/30/2013

What was ABI's third fix?

- Another revision to the CB deal was announced on April 19, 2013
- Terms
  - ABI added 3 Modelo brands not yet offered in the U.S.
    - In addition to 7 existing brands
  - CB committed by consent decree to expand Piedras Negras

Did the third fix resolve the DOJ's concerns?

- Yes: Filed consent settlement stipulation on April 19, 2013
- The ABI/Modelo and the Constellation deals closed on June 4, 2013
  - After the "so ordering" of the settlement stipulation by the court
- The final judgment was entered until October 24, 2013
  - Almost four months later

Did the settlement fix the competitive problems?

- At the time of the consent decree?
  - WDC: No. At least four problems

Did the settlement fix the competitive problems?

- Problem 1: Preservation of Modelo as a maverick
  - CB was said to be a follower
    - Modelo's 50% in Crown Imports + ABI firewall made Crown Imports more aggressive
  - Analysts expected price increases following the ABI/Modelo closing even with the Constellation Brands fix
- Problem 2: Ability of Constellation Brands to supply the U.S.
  - Expansion of the Piedras Negras plant—plans to double capacity in three years
    - BUT would the DOJ really sue CB for not investing as required?
  - Supply of inputs: Yeast, malt, hops, aluminum for cans, glass bottles
    - Sourced from ABI under 3-year transition services agreement
    - Then what?
- Problem 3: Can CB be a successful brewer?
  - How much of this is art and not IP?

Did the settlement fix the competitive problems?

- Problem 4: Can CB afford to spend the $4.75B purchase price + make additions to the Piedras Negras plant?
  - On April 26, 2013 (after the filing of the consent decree), CB had a market cap of only $9.8 billion
  - AND CB raised its estimate for the cost of upgrading the Piedras Negras plant to between $900 million and $1.1 billion
  - But CB did complete the expansion and its market cap has soared

Constellation Brands: The aftermath

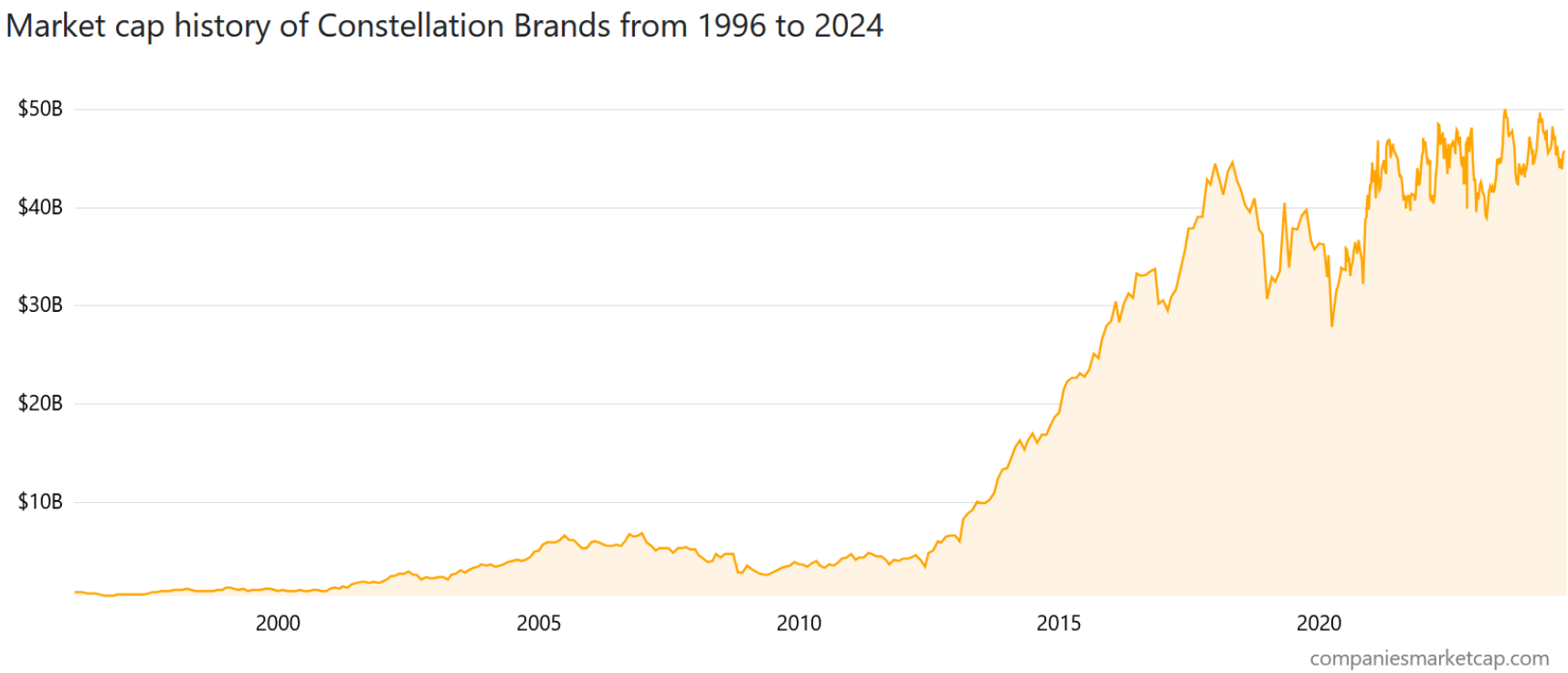
- Constellation Brands Inc. (STZ) historical stock prices: 4/1/2013 – 6/4/2014

Constellation Brands: The aftermath

- Constellation Brands Inc. (STZ) historical stock prices: 4/1/2013 – 9/4/2024

Constellation Brands: The aftermath

- Constellation Brands Inc. (STZ) historical market cap: 2005 to 2024



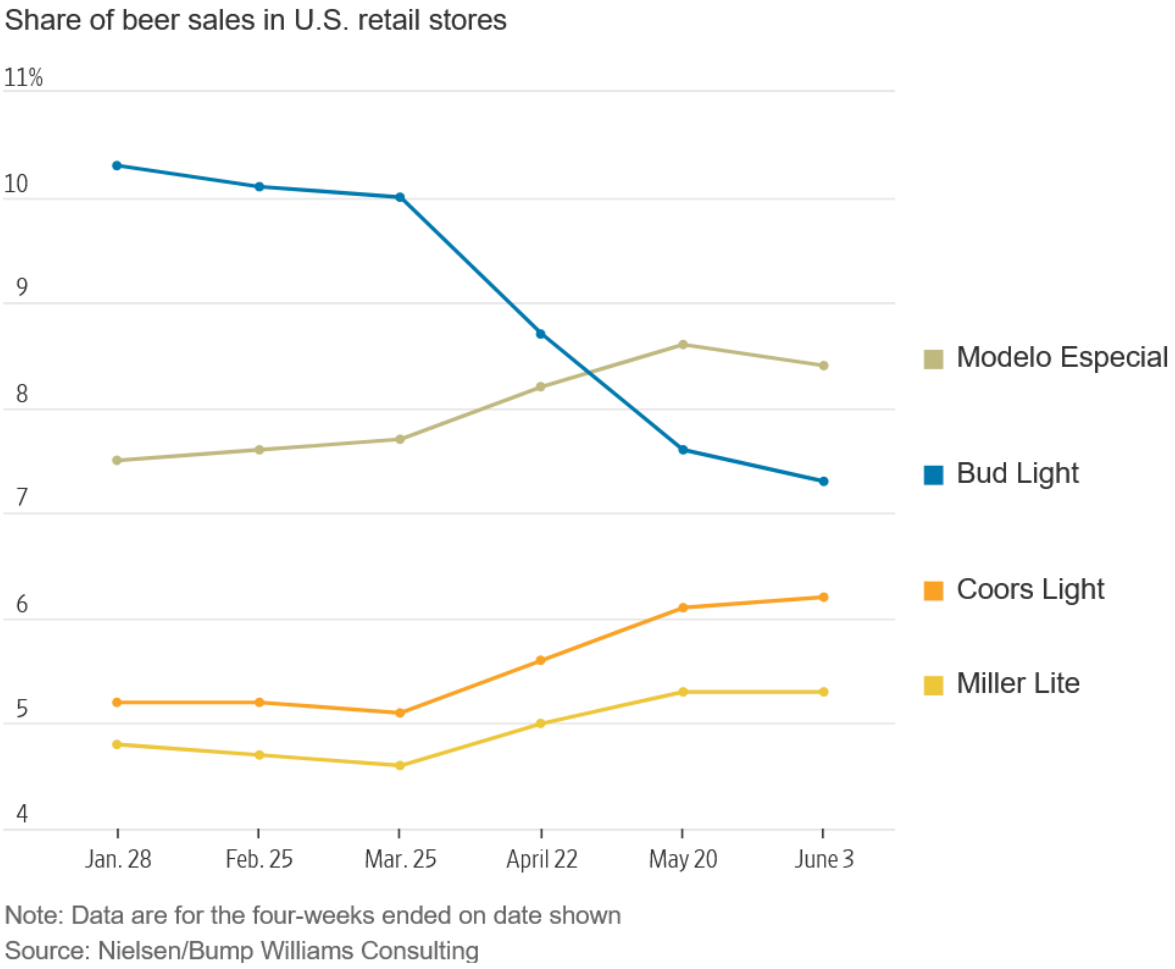
  - Market cap
    - June 1, 2012: $3.4 billion — Before announcement
    - April 26, 2013 : $9.8 billion — After filing of consent decree
    - September 12, 2024: $45.76 billion — Today

ABI

- Anheuser Busch Inbev SA NV (BUD)
  - New York Stock Exchange

Deal announced: June 28, 2012
Complaint filed: Jan. 31, 2013
Second fix: Feb. 14, 2013
Consent decree filed: Apr. 19, 2013

Top selling beer brands in the U.S. today



Source: Jennifer Maloney, *How Modelo Dethroned Bud Light as America's Top Beer*, Wall St. J., June 17, 2023.

CLASSES 7-8 SLIDES

Unit 7. Hertz/Avis Budget/Dollar Thrifty

Professor Dale Collins
Merger Antitrust Law
Georgetown University Law Center

September 19, 2024

Hertz/Avis Budget/Dollar Thrifty

Thrifty Car Rental

DOLLAR RENT A CAR

The 2010 Hertz/Dollar Thrifty Deal

2010 Hertz/Dollar Thrifty deal

- Hertz
  - $7.1 billion in revenues
  - Two brands: Hertz and Advantage
  - Hertz brand
    - 8200 rental locations worldwide
    - Premium global rental car brand
    - Focus on corporate and high-end leisure
    - #1 in U.S. airport rentals (78 major airports)

  - Advantage brand
    - 26 airports in the U.S.
    - "Flanker" brand to compete for price-conscious travelers at airports[1]
      - A flanker brand is a new brand introduced into the market by a company that already has an established brand in the same product category
      - Designed to compete in the category without damaging the existing item's market share by targeting a different group of consumers
    - Different counters/lower price proposition/fewer service attributes

[1] *See generaly* Nancy Giddens & Amanda Hofmann, *Building Your Brand with Flanker Brands* (June 2010),

2010 Hertz/Dollar Thrifty deal

- Dollar Thrifty
  - $1.5 billion in revenues
  - $1.9 global enterprise value
  - Dollar Rent A Car and Thrifty Car Rental brands
    - “Middle market” airport brands
  - 1558 corporate and franchise locations worldwide
    - 298 corporate-owned
    - 1260 franchisee locations

2010 Hertz/Dollar Thrifty deal

- 2010 merger agreement
  - Signed on April 26, 2010
  - Hertz to buy Dollar Thrifty for $41.00 per share (= $1.3B equity value)
    - $6.88 in special Dollar Thrifty dividend (= $200 million)[1]
    - $25.92 to be paid by Hertz in cash (= $756 million)
    - $12.88 in Hertz stock (valued at the closing price on April 23, 2010) (= $317 million)
      - As a result, DT shareholders will hold 5.5% of Hertz after closing
  - 19% deal premium to 30-day closing average on Dollar Thrifty stock
    - 81% above lowest closing price over last 3 months
  - Annual recurring synergies: $180 million
    - Primarily in fleet, IT systems, and procurement savings

[1] Compare the Albertsons special dividend of $6.85 per share (= $4 billion) in the pending Kroger/Albertsons merger to be paid in November 2022. Funded with $2.5B of 3.0B cash on hand and $1.5B by its line of credit. Actually paid in January 2023. The Kroger/Albertsons merger agreement was executed as of October 13, 2022.

2010 Hertz/Dollar Thrifty deal

- Two questions

Why did Hertz want to do this deal?

Why did Dollar Thrifty to do this deal?

Hertz business rationale

Significant Strategic & Financial Benefits

Strategic Rationale

- Gain instant scale in middle tier sector with established brand and airport infrastructure
- Allows Hertz to pursue aggressive value strategy without risking dilution to Hertz brand
- Provides Hertz with multiple strategic options to address leisure business and compete with multi-brand peers in all three tiers of the market

Significant Synergy Potential

- At least $180 million of annual run-rate synergies expected
- Key areas of cost reduction / operational improvement include
  - Procurement: significant portion of Dollar Thrifty's spend is decentralized
  - IT: overlapping systems and future capital spend
  - Fleet: benefit from fleet sharing and reduced cap. cost
  - Public company costs

All cost savings

Positive Financial Impact

- 20% equity used to maintain strong credit profile

($ in millions)

	As of December 31, 2009	
	Hertz Standalone	Hertz Pro Forma
Total Corp. Debt / Corp. EBITDA	**4.8x**	**4.4x**
Total Corp. Debt / Corp. EBITDA (w/ syn)		**3.7x**
Total Debt / Gross EBITDA	3.6x	3.4x
Total Debt / Gross EBITDA (w/ syn)		3.2x

- Earnings accretive

Hertz business rationale

Significant Strategic & Financial Benefits

Unquantified revenue synergies

Strategic Rationale

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  - Public company costs

All cost savings

Positive Financial Impact

- 20% equity used to maintain strong credit profile

($ in millions)

	As of December 31, 2009	
	Hertz Standalone	Hertz Pro Forma
Total Corp. Debt / Corp. EBITDA	**4.8x**	**4.4x**
Total Corp. Debt / Corp. EBITDA (w/ syn)		**3.7x**
Total Debt / Gross EBITDA	3.6x	3.4x
Total Debt / Gross EBITDA (w/ syn)		3.2x

- Earnings accretive

Hertz business rationale

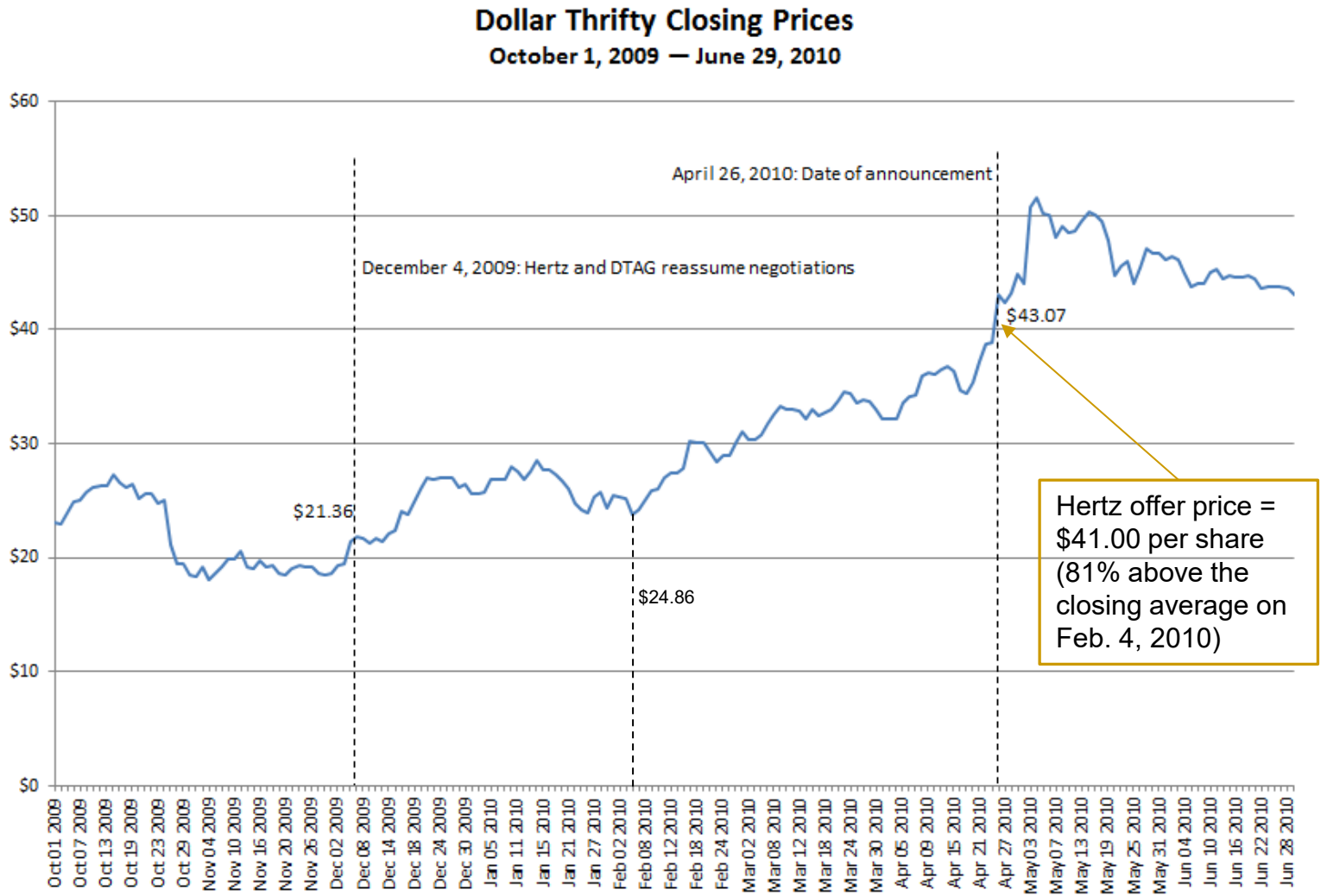
- Slide from Hertz investor presentation on the deal:

- Premium global brand competing with Avis, National
- Corporate, higher-end leisure, special occasions
- High service, higher-end fleet mix
- Making inroads in Off-Airport segment historically dominated by Enterprise

- Middle market airport brands competing with, but differentiated from Enterprise, Budget, Alamo
- Value proposition emphasizing lower price but consistently delivering essential services (speed, reliability)
- Consider dual brand operationally, but keep separate for marketing, positioning, e.g., separate websites

- Flanker airport brand to compete for economy leisure business against Payless, Fox, etc.
- Lower price proposition for price-focused leisure customers
- Reliable, clean cars, but fewer service attributes

Dollar Thrifty business rationale



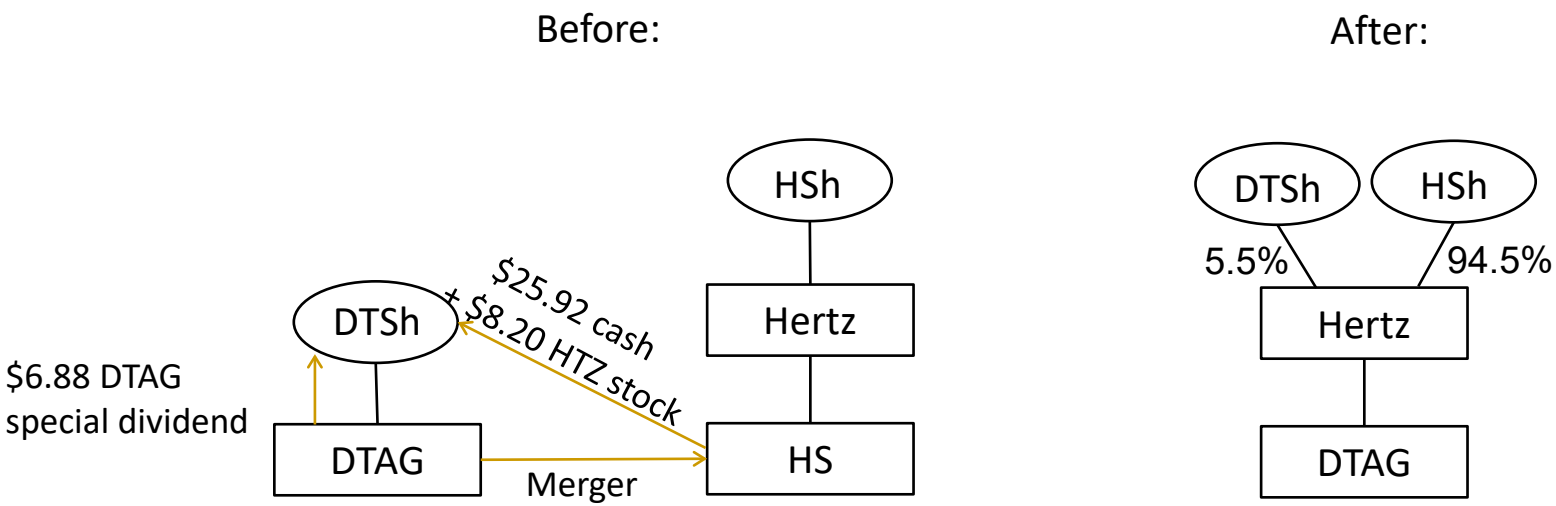
The deal price

- Payments to Dollar Thrifty shareholders (per DTAG share)

$6.88	Dollar Thrifty special cash dividend (paid by Dollar Thrifty)
$25.92	Cash (paid by Hertz)
$8.20	0.6366 Hertz shares, valued on the closing price on April 23, 2010 (the last business day before the announcement on April 26, 2010)
$41.00	Total consideration

- Some implications
  - Special DTAG cash dividend = $200 million →
    - DTAG shareholders would receive $953m in cash
    - But Hertz would only pay $753m in cash
    - For a total Hertz payment of $25.92 in cash and $8.20 in stock = $32.12 per share
      - BUT the $200 million in the DTAG special dividend is still real money to Hertz because DTAG will be worth $200 million less with the dividend payout

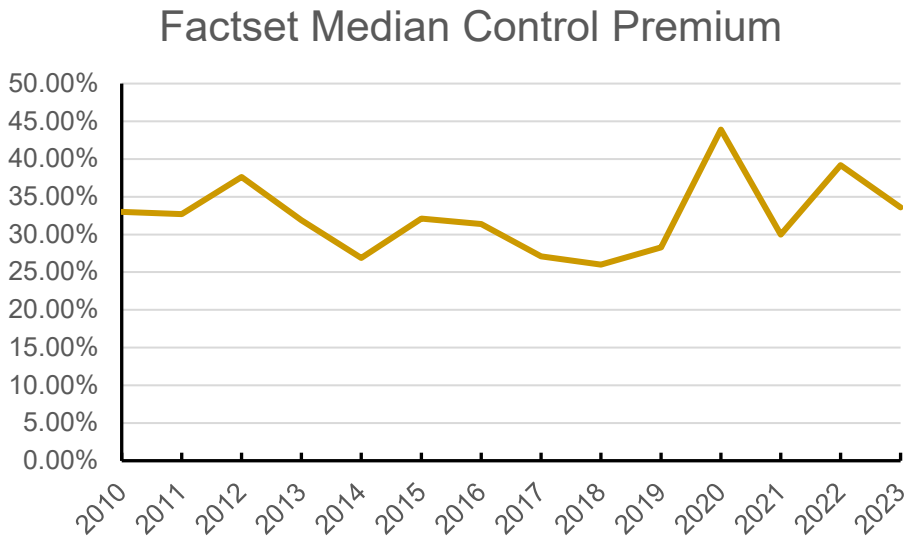
Hertz/DTAG Reverse Triangular Merger



where	DTAG	Dollar Thrifty Automotive Group (target firm)
	DTSh	DTAG's premerger shareholders
	Hertz	Acquiring firm
	HSh	Hertz premerger shareholders
	HS	Hertz acquisition subsidiary

Deal premium

- Why did Hertz pay a deal premium?
  - In almost all deals, the buyer pays a price significantly above the price of the target's stock in the period just before when the stock price is affected by the prospect of an acquisition
  - FactSet Control Premium Study updated for 2023:

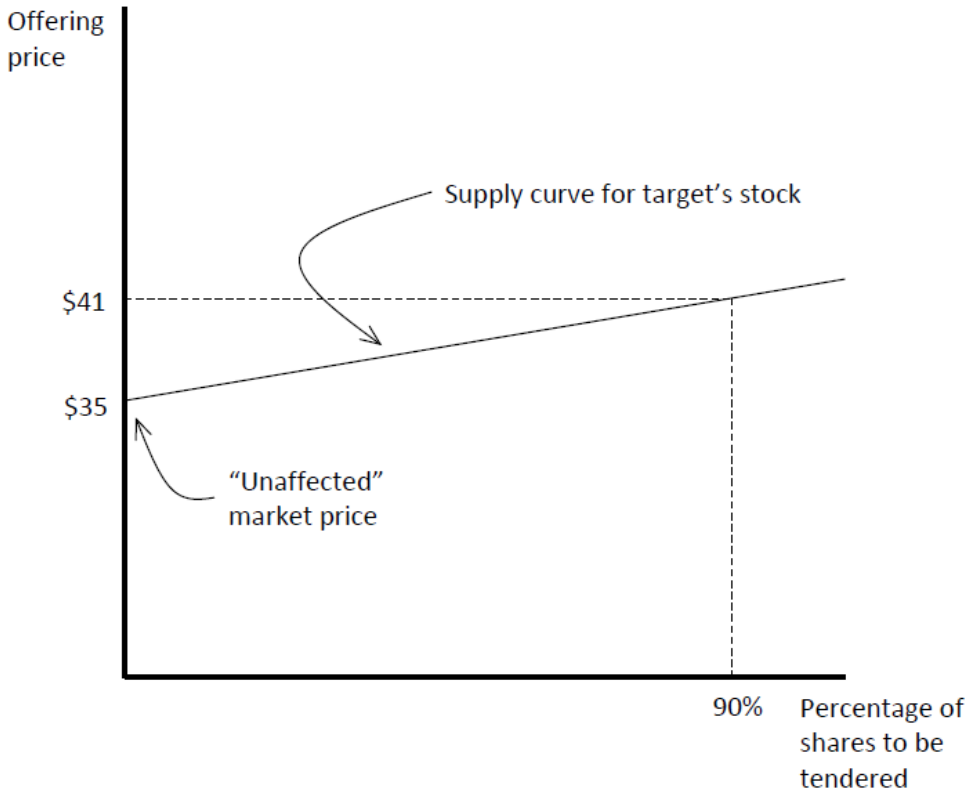


Deal premium

- Why did Hertz pay a deal premium?
  - Two reasons for a deal premium—
    1. Upward-sloping supply curve for DTAG stock
    2. Bargaining game over the synergies gain

Deal premium

- Why did Hertz pay a deal premium?
  - Upward-sloping supply curve for DTAG stock



Deal premium

- Why did Hertz pay a deal premium?
  - Upward-sloping supply curve for DTAG stock
    - Why is the supply curve of stock upward sloping?
      - *Ordinary course*: Different shareholders have different expectations about the value of the stock
        - Different expectations about future dividends
        - Different expectations about capital appreciation
      - *In a deal*: Different expectations of what the selling price will be

If we rank order the shareholders by their reservation sales price from lowest to highest, this traces out an upward-sloping supply curve for the target's stock

Deal premium

- Why did Hertz pay a deal premium?
  2. Bargaining game over the synergies gain—Three parts
     a. Hertz determines its reservation price (the maximum price it would be willing to pay for DTAG)
        - But does not tell DTAG
     b. DTAG determines its reservation price (the minimum price the DTAG board would recommend that the shareholders accept)
        - But does not tell Hertz

The difference is the "gain from trade"

     c. *Problem*: Parties must agree on a purchase price (which will allocate the gain from trade)
        - Think of the purchase price as the going concern value + deal premium
        - The allocation of the gains from trade will occur through the deal premium
          - *Seller*: Gets the deal premium
          - *Buyer*: Gets the total gains from trade minus the deal premium

Let's turn to the bargaining game to determine the deal premium

Deal premium

- Why did Hertz pay a deal premium?
  2. Bargaining game over the synergies gain—Hertz' reservation price
     - Total value Hertz (V_t) assigns to the DTAG merger equals the going concern value of DTAG (V_{DTAG}) plus all synergy gains (V_s) Hertz expects to result from the transaction:

$$V_t = V_{DTAG} + V_s$$

       - This is not what the Hertz shareholders necessarily receive, since they—
         - Will pay a deal premium to the DTAG shareholders, and
         - Will suffer some dilution since DTAG postmerger will own a portion of Hertz
     - Hertz sets the going concern value V_{DTAG} of DTAG at $932 million (after payment of the special dividend)

What is going concern value?

Deal premium

- Why did Hertz pay a deal premium?
  2. Bargaining game over the synergies gain—Hertz' reservation price
     - *Background*: Going concern value
       - *Definition*: The economic value of an entity as an operating unit
       - *Components*:
         1. The present discounted value (PDV) of the *free cash flow* during the valuation period
            - *Free cash flow*: The cash a company generates after accounting for cash outflows to support operations and maintain its capital assets
            - Effectively, the cash generated by the company that is available for investment and to pay dividends (does not count borrowing)
         2. The present discounted value of the residual value of the firm calculated at the end of the valuation period
         3. The value of the assets considered unnecessary to operate the entity
            - *Examples*: Excess working capital, non-operating assets, assets that can be liquidated

What is discounted present value?

Deal premium

- Why did Hertz pay a deal premium?
  2. Bargaining game over the synergies gain—Hertz' reservation price
     - *Background*: Discounted present value
       - *Problem 1*: Say someone was going to give you $1.00 a year from now. How much would you be willing to take today to sell this right to receive $1.00 a year from now?
         - *Answer*: Your reservation price should be that price p^* at which you could invest p^* today and will have $1.00 a year from now

This is equal to the amount you receive today (p^*) plus the earnings on that amount over the next year (p^*r):

$$p^* + p^* r = 1.00$$

where r is the percentage annual investment rate

NB: r is not necessarily an interest rate. Rather, it is the opportunity cost based on the best rate of return the firm can obtain from use of the money.

Simplifying: $$p^* \cdot (1 + r) = 1.00$$

Solving for p^*: $$p^* = \frac{1.00}{1 + r}$$

If r = 6%, then: $$p^* = \frac{1.00}{1.06} = 0.943396 \text{ (rounded)}^1$$

So you would require at least around $0.944 to sell your right to receive $1 a year from now

[1] MathPapa is a great algebraic calculator.

Deal premium

- Why did Hertz pay a deal premium?
  2. Bargaining game over the synergies gain—Hertz' reservation price
     - *Background*: Discounted present value
       - *Problem 2*: Same problem, only the $1.00 gets paid 2 years from now
         - *Answer*: p^* such that p^* invested for one year and then the resulting amount invested for another year yields $1.00:

Amount at end of year 1

$$\underbrace{\left(p^*\left(1+r\right)\right)}\left(1+r\right)=1.00 \quad \text{or} \quad p^*=\frac{1.00}{\left(1+r\right)^2}$$

Amount at end of year 2

If r = 6%, then:

$$p^*=\frac{1.00}{\left(1+r\right)^2}=\frac{1.00}{\left(1+0.06\right)^2}=0.889996 \text{ (rounded)}$$

So you would require at least $0.90 to sell your right

- General formula for n periods at a constant investment rate r per period:

$$p^*=\frac{F}{\left(1+r\right)^n}$$

Where F is the future value at the end of the n^{th} period ($1.00 in Problem 2)

Deal premium

- Why did Hertz pay a deal premium?
  2. Bargaining game over the synergies gain—Hertz' reservation price
     - *Background*: Discounted present value
       - *Problem 3*: Say someone was going to give you $1.00 a year from now and another $1.00 two years from now. How much would you be willing to take today to sell this right to receive $1.00 a year and another dollar two years from now?
         - *Answer*: Your reservation price p^* will be the sum of—
           - The PDV of $1.00 one year from now
           - PLUS the PDV of $1.00 two years from now

$$p^* = \frac{1.00}{1+r} + \frac{1.00}{(1+r)^2}$$

$$= 0.943396 + 0.889996 = 1.833392$$

       - General formula for a constant annuity A at a constant investment rate r:

$$p^* = \sum_{i=1}^{n} \frac{A}{(1+r)^i} = A\left[\frac{1-(1+r)^{-n}}{r}\right]$$

For a perpetual annuity:
$p^* = A/r$

Deal premium

- Why did Hertz pay a deal premium?
  2. Bargaining game over the synergies gain—Hertz' reservation price
     - Hertz claimed an expected annually recurring synergy gain of $180 million (*A*)
       - The present discounted value V_s of an annual recurring cash payment in perpetuity (that is, a *perpetual annuity*) discounted at rate *r* (say 7%) is:

$$V_s = \frac{A}{r} = \frac{\$180 \text{ million}}{0.07} = \$2.57 \text{ billion}$$

       - But say that Hertz values synergies only over a 10-year period. Then:

$$V_s^{10} = A\left[\frac{1-(1+r)^{-n}}{r}\right]$$

$$= [\$180 \text{ million}]\left[\frac{1-(1+0.07)^{-10}}{0.07}\right] = \$1.26 \text{ billion}$$

Deal premium

- Why did Hertz pay a deal premium?
  2. Bargaining game over the synergies gain—Hertz' reservation price
     - So Hertz expects that the total value V_t of Dollar Thrifty postmerger will be:

$$\begin{aligned} V_t &= V_c + V_s^{10} \\ &= \$932 \text{ million} + \$1.26 \text{ billion} \\ &= \$2.17 \text{ billion} \end{aligned}$$

     - But Hertz shareholders will own only 94.5% of the combined company
       - The original Hertz shareholders will not own the whole company because their interest is being diluted by the Hertz stock going to the DTAG shareholders
       - The original Hertz shareholders would hold only 94.5% of the Hertz stock postmerger, so they would get only that portion of V_t (= $2.075 billion)

So Hertz shareholders should be willing to pay a maximum of $2.075 billion for the deal (or about $71 per DTAG share)

Deal premium

- Why did Hertz pay a deal premium?
  2. Bargaining game over the synergies gain—DTAG's reservation price
     - No shareholder would sell for less than the "unaffected" current stock price
       - That is, the stock price in the complete absence of merger negotiations or rumors

> To study the negotiated division of the synergies gain separate from the upward-sloping supply curve, we will (unrealistically) assume that all DTAG shareholders have a reservation price equal to the unaffected stock price[1]

       - In fact, DTAG shareholders expectations about the ultimate division of the synergies gain will be reflected in the DTAG stock supply curve

Suppose that the unaffected stock price is $32

Deal premium

- Why did Hertz pay a deal premium?
  3. Bargaining game over the synergies gain—The purchase price
     - DTAG shareholders will not accept anything lower than their reservation price
     - BUT they can also bargain for some of the gain resulting from the deal, since unless they agree to the deal Hertz shareholders will receive no gain
     - At $41 per share under Hertz's terms, DTAG shareholders receive a significant deal premium over the "unaffected" price:

	Closing price	Deal premium
Mar. 23, 2010	34.60	18.5%
Feb. 23, 2010	28.37	44.5%
Jan. 22, 2010	24.29	68.8%

  - So $41 per share looks like a good deal to the DTAG shareholders
  - Also looks like a good deal to the Hertz shareholders
    - Willing to pay up to $71 per share, but paid only $41 per share

Deal premium

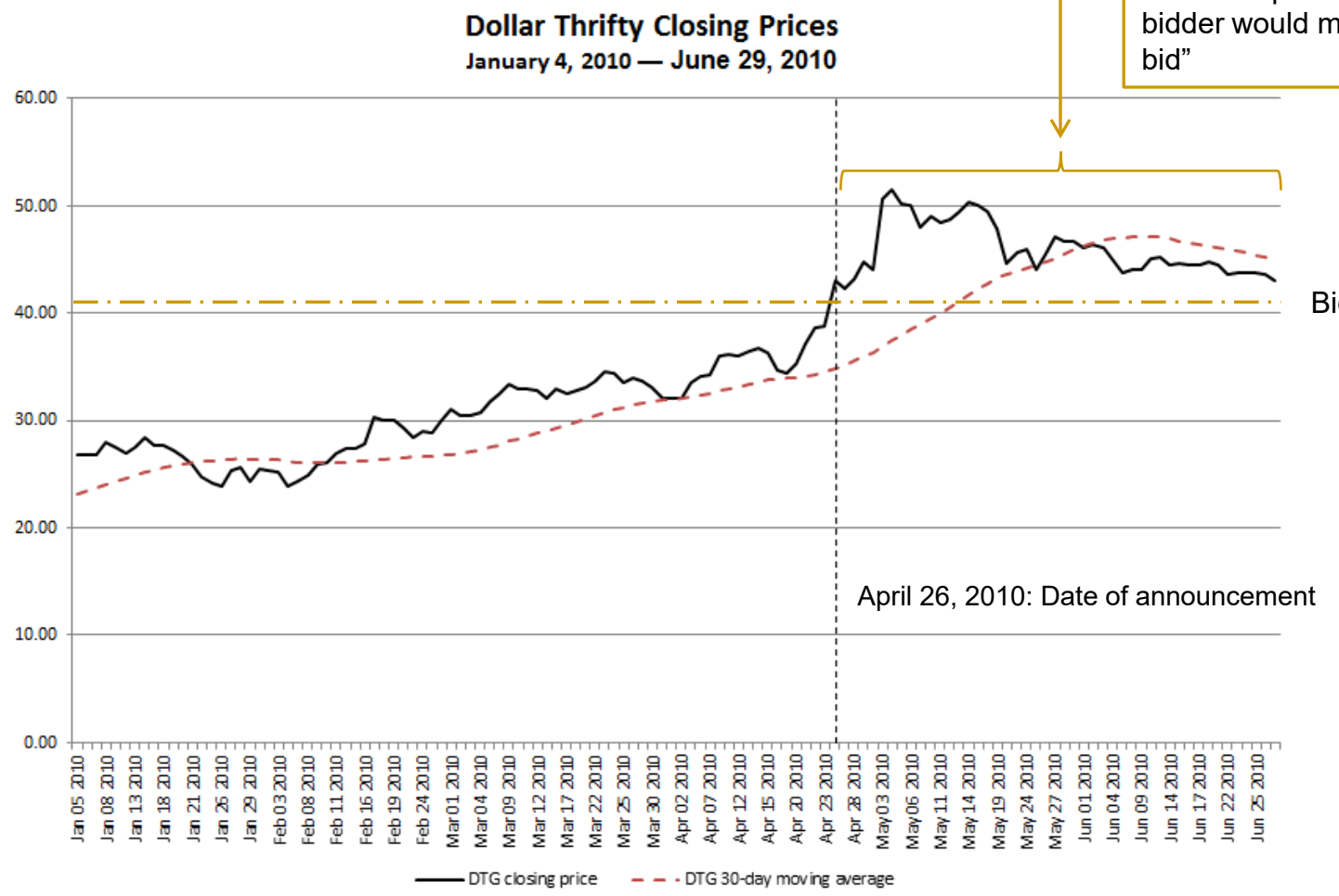
- Why did Hertz pay a deal premium?
  2. Bargaining game over the synergies gain
     - Division of the synergy gains

		Surplus gain
Hertz reservation price	$71	$30
Deal price	$41	
DTAG reservation price	$32	$9

- *Query*: Why did DTAG accept so low a share of the synergies gain?
  - Two most likely possibilities (not exclusive):
    - Hertz was better at playing the bargaining game
    - DTAG estimated the deal synergies significantly below Hertz' estimates

Market reaction

Post-announcement trading prices *above* the Hertz bid price of $41 indicates that the market expected a second bidder would make a "topping bid"



Class 8 Homework Assignment

Class 8 homework assignment

- The problem
  - Aon to acquire Willis Towers Watson Plc (WTW) for $30 billion in an all-stock deal
    - The combined company would be valued at $80 billion
    - WTW shareholders will own 37% of the combined company
  - On June 16, 2021, the DOJ sued to block the Aon/WTW deal
  - The trial court said it would likely deliver a decision in February 2022
  - The drop dead date in the merger agreement is September 9, 2021
  - If the deal does not close for antitrust reasons, Aon will pay WTW an antitrust reverse termination fee of $1 billion
  - Buyer Aon wants to litigate the merits

Should target WTW terminate the agreement on the September 9 drop dead date or extend it to February and litigate?

Class 8 homework assignment

- Strategy
  1. Identify WTW's options
  2. Identify the possible outcome(s) for each option
  3. Calculate WTW's expected payoff (in PDV) for each outcome
  4. Select the option with the highest expected payoff

Class 8 homework assignment

3. Identify the expected payoffs for each outcome

Option
1. Do not extend drop dead date
2. Extend drop dead date

Class 8 homework assignment

3. Identify the expected payoffs for each outcome

Option	Outcomes	Payoff
1. Do not extend drop dead date	Terminate agreement on drop dead date (September 9, 2021)	Receive antitrust reverse termination fee (ARTF = $1B)

To be sure we are comparing apples to apples, calculate the PDVs as of the drop dead date

Class 8 homework assignment

3. Identify the expected payoffs for each outcome

Option	Outcomes	Payoff
1. Do not extend drop dead date	Terminate agreement on drop dead date (September 9, 2021)	Receive antitrust reverse termination fee (ARTF = $1B)
2. Extend drop dead date	a. Litigate and lose	i. Loss of litigation costs
		ii. PDV of ARTF received in February 2022 rather than September 2021
		iii. Further loss of going concern value

To be sure we are comparing apples to apples, calculate the PDVs as of the drop dead date

Class 8 homework assignment

3. Identify the expected payoffs for each outcome

Option	Outcomes	Payoff
1. Do not extend drop dead date	Terminate agreement on drop dead date (September 9, 2021)	Receive antitrust reverse termination fee (ARTF = $1B)
2. Extend drop dead date	a. Litigate and lose	i. Loss of litigation costs
		ii. PDV of ARTF received in February 2022 rather than September 2021
		iii. Further loss of going concern value
	b. Litigate and win	i. Loss of litigation costs
		ii. Gain of deal premium on closing of the deal
		iii. Gain of pro rata share of synergies as Aon shareholders

To be sure we are comparing apples to apples, calculate the PDVs as of the drop dead date

Class 8 homework assignment

1. Do not extend drop dead date: Terminate agreement
   - Antitrust reverse termination fee = $1 billion

PDV payoff for Strategy 1: $1 billion

Class 8 homework assignment

2. Extend drop dead date and litigate
   a. Litigate and lose
      i. Additional litigation costs = −$10 million
      ii. Present discounted value of ARTF received in February 2022 as opposed to September 2021

$$PV = \frac{FV}{(1+r)^n},$$

where

PV is the discounted present value
FV is the future value (here $1 billion)
r is the discount rate (here 5.16% annually or 0.43% monthly)
n is the number of periods (here 5 months)

WTW's WACC

Applied:

$$PV = \frac{FV}{(1+r)^n} = \frac{\$1000 \text{ million}}{(1+0.0043)^5} = \$978.77 \text{ million}$$

So in the litigate and lose scenario, the present value of the delayed $1 billion ARTF is $978.77 million

Class 8 homework assignment

2. Extend drop dead date and litigate
   a. Litigate and lose
      iii. Further loss of going concern value
      - The signing occurred on March 9, 2020, and the drop dead date was 18 months later
      - Most of the damage to WTW's going concern value probably will occur during this 18-month period, with relatively little or no additional damage expected during the additional five months between the drop dead date and the end of the litigation
      - Loss associated with additional diminution in going concern value: $0

Total expected present value to WTW shareholders on the drop dead date if they litigate and lose:

$$\underbrace{-\$10 \text{ million}}_{\text{Litigation costs}} + \underbrace{\$978.77 \text{ million}}_{\text{Reverse breakup fee}} - \underbrace{\$\ 0 \text{ million}}_{\text{Lost going concern value}} = \$968.77 \text{ million}$$

For a loss of $31.23 million compared to terminating on the drop dead date

Class 8 homework assignment

2. Extend drop dead date and litigate
   b. Litigate and win
      i. Loss of litigation costs = −$10 million
      ii. Gain of deal premium on closing of the deal
         - The parties' investor presentation states that the WTW shareholders will receive Aon stock valued at $30 billion in exchange for their WTW shares, yielding a deal premium of 16.2%
         - Consequently, the deal premium is about $4.182 billion[1]
            - *Calculation*: Let x be the unaffected price. The 0.162x is the deal premium. The unaffected price plus the deal premium yields the purchase price. So—

$$x + 0.162x = 30 \rightarrow x = \frac{30}{1.162} = 25.82$$

            - So the deal premium is 0.162x or $4.182 billion
         - But the deal premium will not be received until February 2022, so it needs to be discounted to the present (i.e., September 2021):

$$PV = \frac{FV}{(1+r)^n} = \frac{\$4182}{(1+0.0043)^5} = \$4095.27 \text{ million}$$

[1] This is not quite right, but I did not give you the information necessary to do the correct calculation. See note 10 in the instructor's answer to the homework assignment for an explanation.

Class 8 homework assignment

2. Extend drop dead date and litigate
   b. Litigate and win
      iii. Gain of pro rata share of synergies as Aon shareholders
         - The parties anticipate total annual run-rate synergies of $800 million beginning in year 3
         - They also expect total gross synergies to be $267 million in the first year and $600 million in the second year
         - Attaining these synergies entail transitional costs of $1.62 billion split equally in the first two years
         - In addition, the companies expect transaction costs of approximately $200 million and retention costs of up to $400 million, all to be incurred in the first year
         - The WTW shareholders will hold 37% of the combined company and hence be entitled to 37% of the combined firm's net deal synergies

Class 8 homework assignment

2. Extend drop dead date and litigate
   b. Litigate and win
      iii. Gain of pro rata share of synergies as Aon shareholders:

WTW pro rata 37% share of 10 years of net synergies discounted at 8%[1]

= $1072.72 million

[1] I used 8% rather than WTW's WACC of 5.16% given that interest rates could be considerably higher in the future than today and the risk that the combined company will not achieve the anticipated $800 million in run-rate synergies and the risk that the nominal value of the synergies will decline over time with changes in products or the competitive landscape.

Combined Company Synergy NPV
(discounted at 8%)

Year	Synergies	Costs	Net CF	PV	NPV	37%
1	$267.00	$1,300.00	($1,033.00)	($956.48)	($956.48)	($353.90)
2	$600.00	$700.00	($100.00)	($85.73)	($1,042.22)	($385.62)
3	$800.00	$0.00	$800.00	$635.07	($407.15)	($150.65)
4	$800.00	$0.00	$800.00	$588.02	$180.87	$66.92
5	$800.00	$0.00	$800.00	$544.47	$725.34	$268.38
6	$800.00	$0.00	$800.00	$504.14	$1,229.48	$454.91
7	$800.00	$0.00	$800.00	$466.79	$1,696.27	$627.62
8	$800.00	$0.00	$800.00	$432.22	$2,128.48	$787.54
9	$800.00	$0.00	$800.00	$400.20	$2,528.68	$935.61
10	$800.00	$0.00	$800.00	$370.55	$2,899.24	$1,072.72
11	$800.00	$0.00	$800.00	$343.11	$3,242.34	$1,199.67
12	$800.00	$0.00	$800.00	$317.69	$3,560.04	$1,317.21
13	$800.00	$0.00	$800.00	$294.16	$3,854.19	$1,426.05
14	$800.00	$0.00	$800.00	$272.37	$4,126.56	$1,526.83
15	$800.00	$0.00	$800.00	$252.19	$4,378.76	$1,620.14
16	$800.00	$0.00	$800.00	$233.51	$4,612.27	$1,706.54
17	$800.00	$0.00	$800.00	$216.22	$4,828.48	$1,786.54
18	$800.00	$0.00	$800.00	$200.20	$5,028.68	$1,860.61
19	$800.00	$0.00	$800.00	$185.37	$5,214.05	$1,929.20
20	$800.00	$0.00	$800.00	$171.64	$5,385.69	$1,992.71

Class 8 homework assignment

2. Extend drop dead date and litigate
   b. Litigate and win

Total gain to WTW shareholders on the drop dead date if they litigate and win:

− *$10 million* + *$4085.27 million* + *$1072.72 million* = *$5147.99 million*

Litigation costs | Deal premium | PDV share of synergies

Class 8 homework assignment

4. Compare payoffs as of the drop dead date

Option	Outcomes	Payoff
1. Do not extend drop dead date	Terminate agreement on drop dead date (September 9, 2021)	+ $1000 million ARTF
2. Extend drop dead date	a. Litigate and lose	+ $969 million
	b. Litigate and win	+ $5147.99 million

- The difference in payoffs between taking the ARTF in September and losing the litigation in February is $31.32 million
- The difference in payoffs between taking the ARTF in September and wining the litigation and closing the deal in February is about $4.18 billion

So the question is whether the WTW shareholders would be willing to risk losing $31.32 million in order to gain about $4.18 billion

Class 8 homework assignment

- What is the tipping point?
  - Let *p* be WTW's (subjective) probability of winning the case and closing the deal
  - If WTW was risk neutral and maximized expected value, then the tipping probability *p** would equate the expected value of extending the drop dead date with the expected value of terminating on September 9:

E(extending)			= E(terminating)
(*p**)(extending and winning)	+ (1-*p**)(extending and losing)		= E(terminating)
(*p**)(5147.99)	+	(1-*p**)(969)	= 1000

  - Solving for *p**, the tipping point is 0.74%

Bottom line: WTW should terminate and take the $1 billion ARTF on September 9 only if it believes that the probability of winning is less than 0.74% → EXTEND THE DROP DEAD DATE

Class 8 homework assignment

- What actually happened?

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Aon and Willis Towers Watson Mutually Agree to Terminate Combination Agreement

07/26/2021

Download this Press Release (PDF)

DUBLIN, July 26, 2021 /PRNewswire/ -- Aon plc (NYSE: AON) and Willis Towers Watson (NASDAQ: WLTW) announced today that the firms have agreed to terminate their business combination agreement and end litigation with the U.S. Department of Justice (DOJ). The proposed combination was first announced on March 9, 2020.

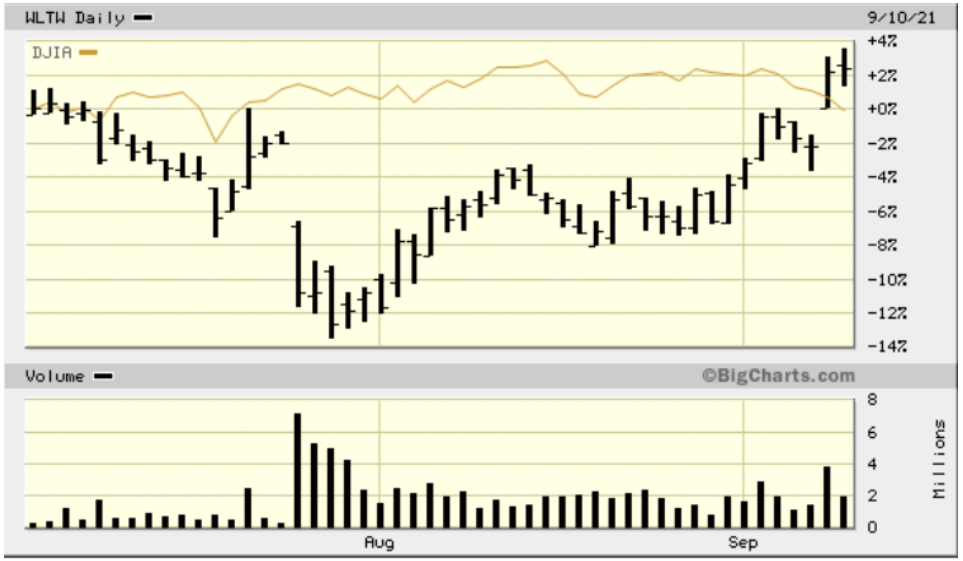
"Despite regulatory momentum around the world, including the recent approval of our combination by the European Commission, we reached an impasse with the U.S. Department of Justice," said Aon CEO Greg Case. "The DOJ position overlooks that our complementary businesses operate across broad, competitive areas of the economy. We are confident that the combination would have accelerated our shared ability to innovate on behalf of clients, but the inability to secure an expedited resolution of the litigation brought us to this point."

. . .

Class 8 homework assignment

- How did the market react?
  - WTW stock dropped 9.0% the day of the announcement

Percentage Change in WTW Closing Prices
July 1, 2021 – September 10, 2021



Arbs with WTW shares were betting on an extension to litigate!

Class 8 homework assignment: Bonus question

Should buyer Aon agree to extend the drop dead date in order to litigate, or should it terminate the deal on September 9 and pay WTW the $1 billion breakup fee?

- Assume:
  - Aon will pay $15 million in out-of-pocket expenses for its part in the litigation
  - On July 15, 2021, Aon's weighted average cost of capital (WACC) was 5.8% and its return on invested capital (ROIC) was 8.47%
- Analysis
  - Options
    - Terminate and pay WTW $1 billion ARTF
    - Extend and litigate
      - Litigate and lose
      - Litigate and win

Class 8 homework assignment: Bonus question

1. Do not extend drop dead date: Terminate agreement
   - Pay antitrust reverse termination fee = −$1 billion

Aon payoff for Strategy 1: −$1 billion

Class 8 homework assignment: Bonus question

2. Extend drop dead date and litigate
   a. Litigate and lose
      i. Loss of litigation costs = −$15 million
      ii. Present discounted value of ARTF paid in February 2022 as opposed to September 2021

$$PV = \frac{FV}{(1+r)^n} = \frac{-\$1000}{(1+0.0048)^5} = -\$976.34 \text{ million}$$

where

PV is the discounted present value
FV is the future value (here, $1 billion)
r is the discount rate (here, 5.8% annually or 0.48% monthly)
n is the number of periods (here, 5 months)

So the present value of the *gain* to Aon on the value of the ARTF for delay is:

FV – PV = $1000 million − $976.34 = $23.66 million

If the ARTF is big enough, it can pay for the buyer to litigate and lose!

Total loss to Aon shareholders on the drop dead date if they litigate and lose:

−$15 million − $976.34 million = −$991.34 million

For a *gain* of $8.66 million compared to terminating on the drop dead date

Class 8 homework assignment: Bonus question

2. Extend drop dead date and litigate
   b. Litigate and win
      i. Loss of litigation costs = −$15 million
      ii. Value of the deal premium: $ 4182 million delayed for five months at Aon's 5.8% WACC:

$$PV = \frac{FV}{(1+r)^n} = \frac{\$4182}{(1+0.0048)^5} = \$4083.1 \text{ million}$$

Class 8 homework assignment: Bonus question

2. Extend drop dead date and litigate
   b. Litigate and win
      iii. Gain of pro rata share of synergies as Aon shareholders:

Aon pro rata 63% share of 10 years of net synergies discounted at 8%[1]

= $1826.52 million

[1] I used 8% rather than Aon's WACC of 5.8% for the same reason I used 8% in calculating the PDV for WTW's share of synergies.

Combined Company Synergy NPV
(discounted at 8%)

Year	Synergies	Costs	Net CF	PV	NPV	63%
1	$267.00	$1,300.00	($1,033.00)	($956.48)	($956.48)	($602.58)
2	$600.00	$700.00	($100.00)	($85.73)	($1,042.22)	($656.60)
3	$800.00	$0.00	$800.00	$635.07	($407.15)	($256.50)
4	$800.00	$0.00	$800.00	$588.02	$180.87	$113.95
5	$800.00	$0.00	$800.00	$544.47	$725.34	$456.96
6	$800.00	$0.00	$800.00	$504.14	$1,229.48	$774.57
7	$800.00	$0.00	$800.00	$466.79	$1,696.27	$1,068.65
8	$800.00	$0.00	$800.00	$432.22	$2,128.48	$1,340.94
9	$800.00	$0.00	$800.00	$400.20	$2,528.68	$1,593.07
10	$800.00	$0.00	$800.00	$370.55	$2,899.24	$1,826.52
11	$800.00	$0.00	$800.00	$343.11	$3,242.34	$2,042.68
12	$800.00	$0.00	$800.00	$317.69	$3,560.04	$2,242.82
13	$800.00	$0.00	$800.00	$294.16	$3,854.19	$2,428.14
14	$800.00	$0.00	$800.00	$272.37	$4,126.56	$2,599.73
15	$800.00	$0.00	$800.00	$252.19	$4,378.76	$2,758.62
16	$800.00	$0.00	$800.00	$233.51	$4,612.27	$2,905.73
17	$800.00	$0.00	$800.00	$216.22	$4,828.48	$3,041.94
18	$800.00	$0.00	$800.00	$200.20	$5,028.68	$3,168.07
19	$800.00	$0.00	$800.00	$185.37	$5,214.05	$3,284.85
20	$800.00	$0.00	$800.00	$171.64	$5,385.69	$3,392.99

Class 8 homework assignment: Bonus question

2. Extend drop dead date and litigate
   b. Litigate and win

Total gain to Aon shareholders on the drop dead date if they litigate and win:

$$-\underbrace{\$15 \text{ million}}_{\text{Litigation costs}} - \underbrace{\$4083.1 \text{ million}}_{\text{Deal premium (paid to WTW)}} + \underbrace{\$1826.52 \text{ million}}_{\text{PDV share of synergies}} = -\$2271.58 \text{ million}$$

What is happening here?

Aon is paying too high a deal premium given its share of the synergies

Class 8 homework assignment: Bonus question

- Compare payoffs as of the drop dead date

Option	Outcomes	Payoff
1. Do not extend drop dead date	Terminate agreement on drop dead date (September 9, 2021)	− $1000 million ARTF
2. Extend drop dead date	a. Litigate and lose	− $991.34 million
	b. Litigate and win	− $2271.58 million

  - The difference in payoffs between paying ARTF in September and losing the litigation in February is $8.66 million
  - The difference in payoffs between taking the ARTF in September and wining the litigation and closing the deal in February is -$1.271.58 billion

So unless Aon is essentially certain it will lose the litigation, it should terminate the deal and pay the $1 billion ARTF to WTW

Class 8 homework assignment: Bonus question

- What is the tipping point?
  - Let *p* be Aon's (subjective) probability of winning the case and closing the deal
  - If Aon was risk neutral and maximized expected value, then the tipping probability *p** would equate the expected value of extending the drop dead date with the expected value of terminating on September 9:

E(extending)			= E(terminating)
(*p**)(extending and winning)	+ (1-*p**)(extending and losing)		= E(terminating)
(*p**)(-2271.58)	+	(1-*p**)(-991.34)	= -1000

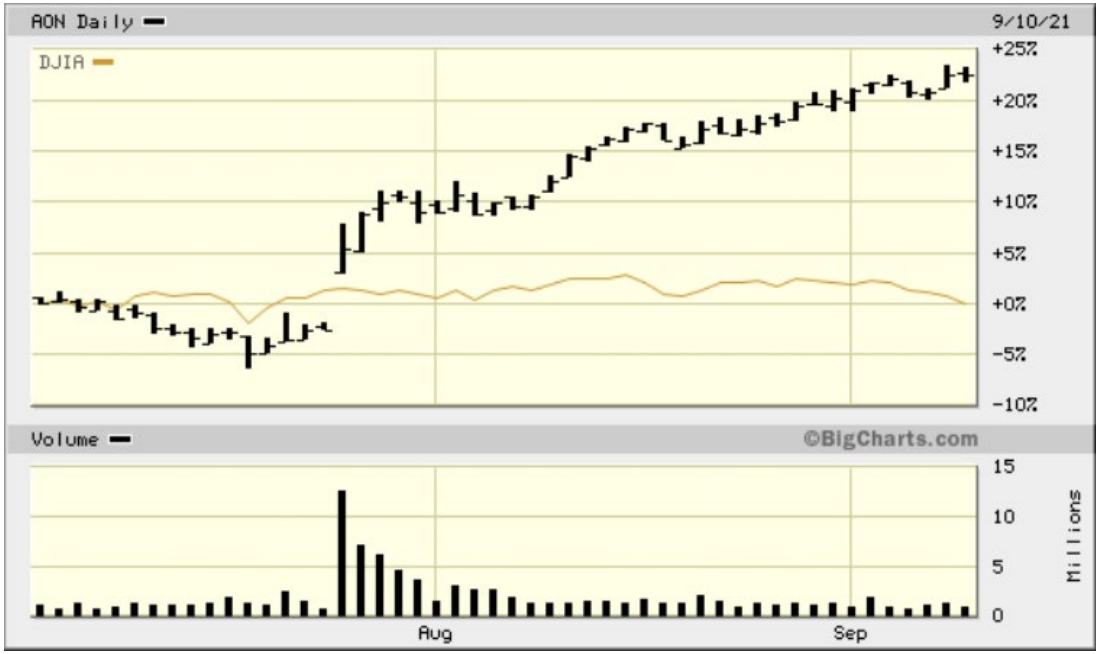
  - Solving for *p**, the tipping point is 0.68%

Bottom line: Buyer Aon should terminate and pay the $1 billion ARTF on September 9 if it believes that the probability of winning is greater than 0.68%

Class 8 homework assignment: Bonus question

- How did the market react to the deal termination?
  - Aon stock increased 8.2% the day of the announcement and continued to increase in the following days

Percentage Change in Aon Closing Prices
July 1, 2021 – September 10, 2021



Arbs with Aon stock expected an extension for litigation but were delighted that the deal terminated

Class 8 homework assignment: Bonus question

- What is going on here? Why did Aon do the deal at all?
  - The Aon investor presentation anticipates—

> "**over $10 billion** of expected shareholder value, from the capitalized value of expected pre-tax synergies and net of expected one time transaction, retention and integration costs."

  - A NPV of $10 billion for the combined company yields a NPV benefit to the Aon shareholders of $6.3 billion *at the time of announcement* given Aon's 63% ownership of the combined company
  - The net present value of the deal to the Aon shareholders is then:

$$\underbrace{\$6{,}300 \text{ million}}_{\text{PDV synergies}} - \underbrace{\$4{,}182 \text{ million}}_{\text{PDV deal premium}} - \underbrace{\$15 \text{ million}}_{\text{Litigation costs}} = +\$1{,}485 \text{ million}$$

Net expected PDV gain to Aon shareholders from litigating and winning

Class 8 homework assignment: Bonus question

- What is going on here? Why did Aon do the deal at all?
  - *Query*: Does the $10 billion in the present value of synergy gains net of costs make sense?
    - Implies a PDV synergies gross gain of $12 billion before $2 billion in transition costs
    - At $800 million/year
      - At a 0% discount rate, would take 15 years to earn $12 billion
      - At an 8% discount rate, would take over 100 years to cover the deal premium
  - How did Aon get $10 billion in net PDV?
    - Consider a perpetual annuity of $800 million/year. What discount rate would produce a PDF of $12 billion (before costs)?

$$PV = \frac{A}{r}$$

$$12000 = \frac{800}{r} \rightarrow r = 6.7\%$$

    - A discount rate of 6.7% is—
      - 87 basis points greater than Aon's WACC of 5.8%
      - 1800 basis points lower than Aon's ROIC of 8.47%
    - Suggests that a NPV synergy gain of $10 billion for the combined company is unrealistically high and that, when properly evaluated, the deal did not make sense from the beginning for Aon

Class 8 homework assignment: Bonus question

- The market agreed the deal was a loser from the beginning:

Aon stock dropped 16.7% on the day of announcement

Class 8 homework assignment: Bonus question

- Moreover, Aon stock did not recover over time when compared to the Dow Jones Industrial Average:

  - Between of the announcement (March 9, 2020) and the date before termination (July 24, 2021)—
    - Aon stock rose 17.1%
    - The DJIA rose 35.9%

Hertz/Avis Budget/Dollar Thrifty

Thrifty Car Rental

DOLLAR RENT A CAR

Antitrust Risk

What was the antitrust risk in this deal?

1. How serious is the inquiry risk?
   - Deal was HSR reportable
   - Highly visible companies—Likely to receive considerable press
   - *Query*: Any likely interest from state AGs?
   - *Query*: Would any customers likely complain to the DOJ/FTC?
   - *Query*: Would any competitors likely complain to the DOJ/FTC?

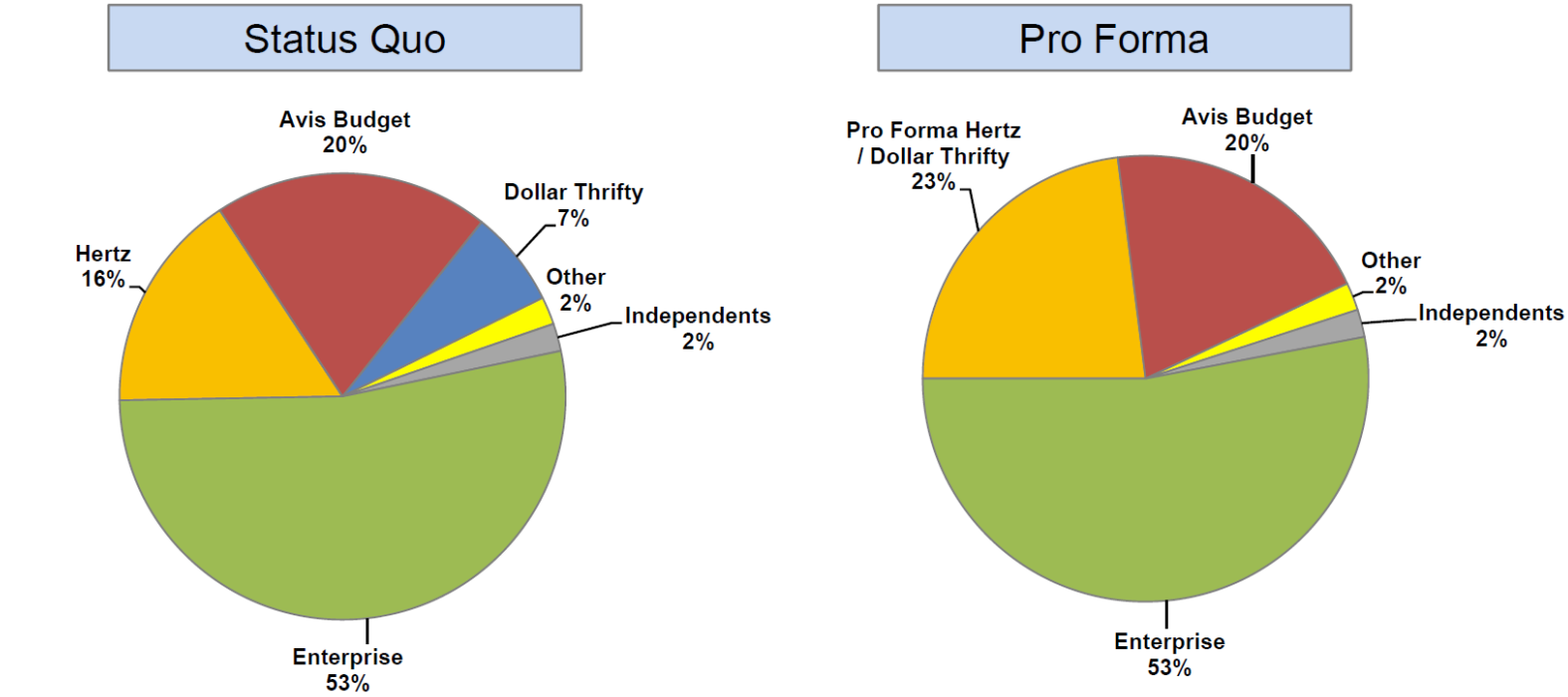
Bottom line:

- *The DOJ/FTC is almost certain to investigate the transaction*
- *Other significant challengers are unlikely and, in any event, insignificant compared to the DOJ/FTC*

What was the antitrust risk in this deal?

2. How serious is the substantive risk?

Total U.S. Rental Car Market Revenue Share 2009

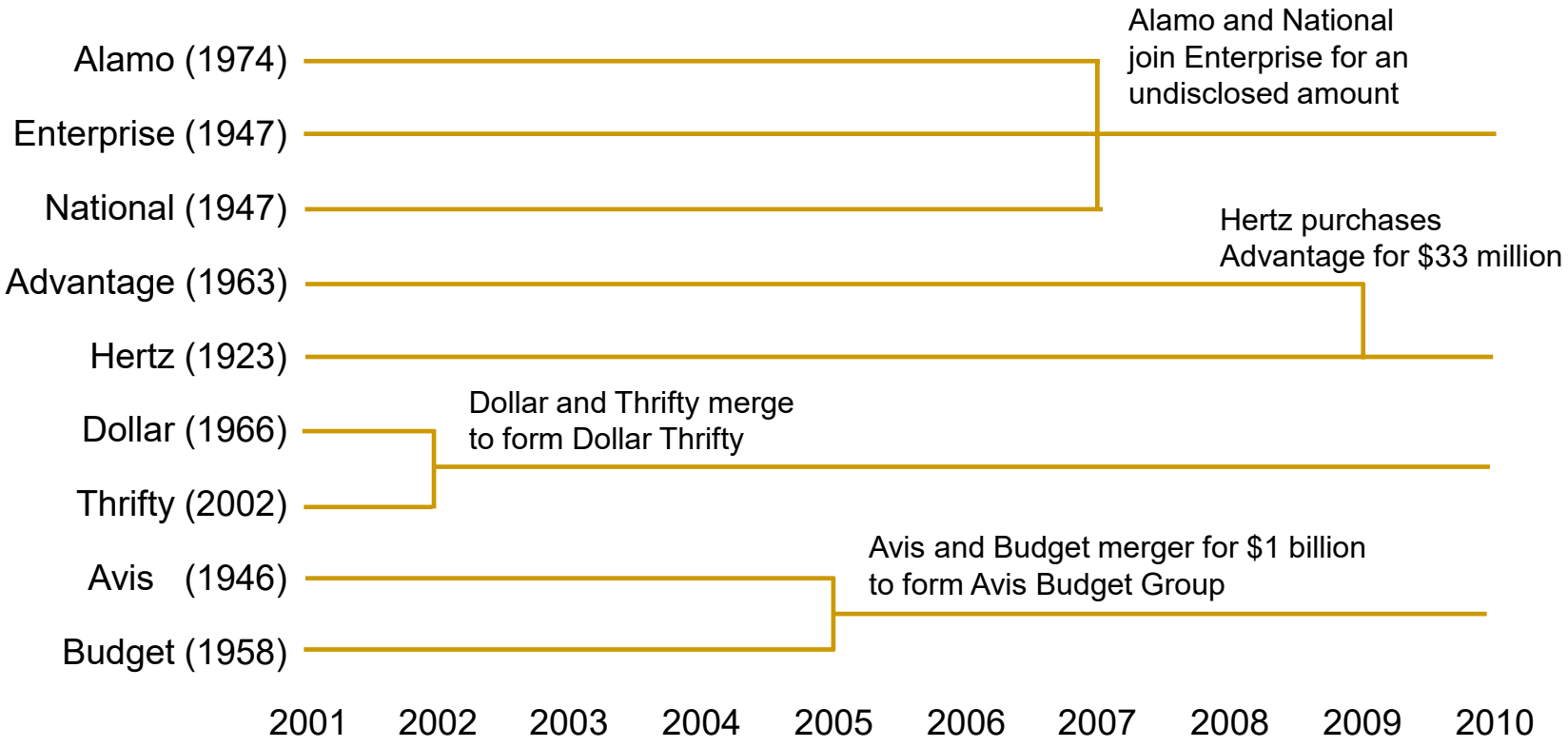


Source: Auto Rental News, 2010 Fact Book

Does not look like much changes with the acquisition

What was the antitrust risk in this deal?

2. How serious is the substantive risk?
   - But extensive consolidation in the rental car industry



What was the antitrust risk in this deal?

2. How serious is the substantive risk?
   - And the market could be further segmented by location
     - Individual airport markets
     - Some in-town markets
     - National accounts

What was the antitrust risk in this deal?

2. How serious is the substantive risk?

U.S. Rental Car Market 2011

Company	Cars	Locations	%Cars
Enterprise Holdings (Alamo, Enterprise, National)	920,861	6,187	52.3%
Hertz (includes Advantage)	320,000	2,500	18.2%
Avis Budget Group	285,000	2,300	16.2%
Dollar Thrifty Automotive Group	118,000	445	6.7%
U-Save Auto Rental System	11,500	325	0.7%
Fox Rent A Car	11,000	13	0.6%
Payless Car Rental System	10,000	32	0.6%
ACE Rent A Car	9,000	90	0.5%
Zipcar	7,400	128	0.4%
Rent-A-Wreck of America	5,500	181	0.3%
Triangle Rent-A-Car	4,200	28	0.2%
Affordable/Sensible	3,300	179	0.2%
Independents	55,000	5,350	3.1%
	1,760,761		100.0%

Combined national share = 24.9%

What was the antitrust risk in this deal?

2. How serious is the substantive risk?

U.S. Rental Car Market 2011

Combined national airport share = 37.0%

Company	Cars	Overall Locations	%Cars	Airport
Enterprise Holdings (Alamo, Enterprise, National)	920,861	6,187	52.3%	34.0%
Hertz (includes Advantage)	320,000	2,500	18.2%	25.0%
Avis Budget Group	285,000	2,300	16.2%	26.0%
Dollar Thrifty Automotive Group	118,000	445	6.7%	12.0%
U-Save Auto Rental System	11,500	325	0.7%	
Fox Rent A Car	11,000	13	0.6%	
Payless Car Rental System	10,000	32	0.6%	
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Affordable/Sensible	3,300	179	0.2%	
Independents	55,000	5,350	3.1%	
	1,760,761		100.0%	

What was the antitrust risk in this deal?

2. How serious is the substantive risk?
   - Overlaps at some individual airports have even higher combined market shares

Significant Individual Airport Market Overlaps

1	Albuquerque, New Mexico (Albuquerque International Sunport Airport)
2	Atlanta, Georgia (Hartsfield-Jackson International Airport)
3	Austin, Texas (Austin-Bergstrom International Airport)
4	Baltimore, Maryland (Baltimore/Washington International Thurgood Marshall Airport)
5	Boston, Massachusetts (Logan International Airport)
6	Burbank, California (Burbank Bob Hope Airport)
7	Burlington, Vermont (Burlington International Airport)
8	Charleston, South Carolina (Charleston International Airport)
9	Charlotte, North Carolina (Charlotte Douglas International Airport)
10	Chicago, Illinois (Chicago Midway International Airport)
11	Chicago, Illinois (Chicago O'Hare International Airport)
12	Cincinnati, Ohio (Cincinnati/Northern Kentucky International Airport)
13	Cleveland, Ohio (Cleveland Hopkins International Airport)
14	Colorado Springs, Colorado (Colorado Springs Airport)
15	Dallas, Texas (Dallas Love Field Airport)
16	Dallas, Texas (Dallas/Fort Worth International Airport)
17	Detroit, Michigan (Detroit Metro Airport)
18	Denver, Colorado (Denver International Airport)

What was the antitrust risk in this deal?

2. How serious is the substantive risk?

Significant Individual Airport Market Overlaps

19	Des Moines, Iowa (Des Moines Airport)
20	El Paso, Texas (El Paso Airport)
21	Fort Lauderdale, Florida (Fort Lauderdale-Hollywood Airport)
22	Fort Myers, Florida (Southwest Florida International Airport)
23	Fort Walton Beach, Florida (Fort Walton Beach Regional Airport)
24	Harlingen, Texas (Valley International Airport)
25	Hartford, Connecticut (Bradley International Airport)
26	Hilo, Hawaii (Hilo International Airport)
27	Honolulu, Hawaii (Honolulu International Airport)
28	Houston, Texas (George Bush Intercontinental Airport)
29	Houston, Texas (William P. Hobby Airport)
30	Jacksonville, Florida (Jacksonville International Airport)
31	Kahului, Hawaii (Kahului Airport)
32	Las Vegas, Nevada (McCarran International Airport)
33	Lihue, Hawaii (Lihue Airport)
34	Los Angeles, California (Los Angeles International Airport)
35	Louisville, Kentucky (Louisville International Airport)
36	Manchester, New Hampshire (Manchester-Boston Regional Airport)
37	Miami, Florida (Miami International Airport)
38	Milwaukee, Wisconsin (Milwaukee International Airport)
39	Minneapolis-St. Paul, Minnesota (Minneapolis-St. Paul International Airport)

What was the antitrust risk in this deal?

2. How serious is the substantive risk?

Significant Individual Airport Market Overlaps

40	Nashville, Tennessee (Nashville International Airport)
41	New York, New York (LaGuardia Airport)
42	New York, New York (John F. Kennedy International Airport)
43	Newark, New Jersey (Newark Liberty International Airport)
44	Norfolk, Virginia (Norfolk International Airport)
45	Oakland, California (Oakland International Airport)
46	Oklahoma City, Oklahoma (Will Rogers World Airport)
47	Omaha, Nebraska (Omaha Airport)
48	Los Angeles, California (Ontario International Airport)
49	Orange County, California (John Wayne Airport)
50	Orlando, Florida (Orlando International Airport)
51	Pensacola, Florida (Pensacola International Airport)
52	Phoenix, Arizona (Sky Harbor Airport)
53	Pittsburgh, Pennsylvania (Pittsburgh International Airport)
54	Portland, Oregon (Portland International Airport)
55	Providence, Rhode Island (T.F. Green Airport)
56	Raleigh-Durham, North Carolina (Raleigh-Durham International Airport)
57	Reno, Nevada (Reno-Tahoe International Airport)
58	Richmond, Virginia (Richmond International Airport)
59	Sacramento, California (Sacramento International Airport)

What was the antitrust risk in this deal?

2. How serious is the substantive risk?

Significant Individual Airport Market Overlaps

60 Salt Lake City, Utah (Salt Lake City International Airport)
61 San Antonio, Texas (San Antonio International Airport)
62 San Diego, California (San Diego International Airport)
63 Sanford, Florida (Orlando-Sanford International Airport)
64 San Francisco, California (San Francisco International Airport)
65 San Jose, California (Norman Y. Mineta San Jose International Airport)
66 Sarasota, Florida (Sarasota Bradenton International Airport)
67 Seattle, Washington (Seattle-Tacoma International Airport)
68 Tampa, Florida (Tampa International Airport)
69 Tulsa, Oklahoma (Tulsa International Airport)
70 Washington, District of Columbia (Ronald Reagan National Airport)
71 Washington, District of Columbia (Washington Dulles International Airport)
72 West Palm Beach, Florida (Palm Beach International Airport)

Source: Complaint ¶ 5, FTC v. Hertz Global Holdings, Inc., No. C-4376 (F.T.C. Nov. 15, 2012)

What was the antitrust risk in this deal?

2. How serious is the substantive risk?
   - *Query*: Who are the customers who might be adversely affected in each market?
     - All customers?
     - Only business customers?
     - Only “value” customers?

What was the antitrust risk in this deal?

3. How serious is the remedies risk?
   - Possibilities
     1. Entire deal is blocked
        - Likely relief the FTC will seek in a fully litigated proceeding
        - Merging parties could "litigate the fix," BUT—
          1. What would be the scope of an acceptable fix to the court in the face of DOJ opposition?
          2. Can the merging parties find and sign a buyer in time?
          3. Would the buyer be acceptable to the court in the face of DOJ opposition?
     2. In each problematic market, either entire Hertz or entire DTAG business must be divested
        - Likely FTC demand unless FTC segments customers into business/value
        - Probably would eliminate most if not all value from the deal
        - Likely would create negative value in the absence of a purchase price adjustment
     3. In each problematic market, either entire Hertz "value" or entire DTAG "value" business must be divested
        - Hertz could divest Advantage (the Hertz value business)

Advice to Hertz

1. Inquiry risk
   - Almost certain second request investigation by the FTC
2. Substantive risk
   - Almost certain antitrust violations in some airport markets
     - Especially in “value” business overlap
   - Possible violations in other airport markets
   - And perhaps non-airport markets as well
3. Remedies risk
   - Deal could be blocked in litigation
     - Litigating the fix is risky since the scope of a fix acceptable to the court is uncertain
   - If the deal is to close, must settle with a consent decree
     - Consent decree must be limited to preserve deal value
     - Preferably limited to the Hertz Advantage business
     - + Maybe a limited number of DTAG airport locations that the FTC may conclude overlap with Hertz-branded location

Critical business considerations

Advice to Hertz

- Bottom line

Hertz should sign a purchase agreement only if—

Advice to Hertz

- Bottom line

Hertz should sign a purchase agreement only if—

1. *The deal provides Hertz with significant expected value at the time of signing*

Advice to Hertz

- Bottom line

Hertz should sign a purchase agreement only if—

1. *The deal provides Hertz with significant expected value at the time of signing*
2. *Any divestitures Hertz might have to make in order to overcome any antitrust objections would still preserve significant expected value, and*

Advice to Hertz

- Bottom line

Hertz should sign a purchase agreement only if—

1. *The deal provides Hertz with significant expected value at the time of signing*
2. *Any divestitures Hertz might have to make in order to overcome any antitrust objections would still preserve significant expected value, and*
3. *Hertz has the right to terminate the merger agreement and walk away from the deal in the event it cannot settle for the divestiture of not much more than the Advantage business*

Advice to DTAG

1. Inquiry risk
   - Almost certain second request investigation by the FTC
2. Substantive risk
   - Almost certain antitrust violations in some airport markets
   - Possible violations in other airport markets
   - And perhaps non-airport markets as well
3. Remedies risk
   - Deal could be blocked in litigation
     - Litigating the fix is very risky given the number of potentially problematic markets
   - If the deal is to close, must settle with a consent decree
     - Hertz is likely to want to limit any consent decree to the Hertz Advantage business in order to preserve value
     - BUT is this enough for DTAG to go forward or can it negotiate to require Hertz in the merger agreement to make additional divestitures if necessary to secure a consent decree?

Advice to DTAG

- Bottom line:

  This deal has significant antitrust risk. DTAG needs to negotiate not only a good price but also provisions that maximize certainty of closing recognizing:

Advice to DTAG

- Bottom line:

This deal has significant antitrust risk. DTAG needs to negotiate not only a good price but also provisions that maximize certainty of closing recognizing:

1. *Hertz will require a deal that provides it with significant expected value at the time of signing,*

Advice to DTAG

- Bottom line:

This deal has significant antitrust risk. DTAG needs to negotiate not only a good price but also provisions that maximize certainty of closing recognizing:

1. *Hertz will require a deal that provides it with significant expected value at the time of signing,*
2. *Hertz's expected value will be a function of the gains from trade it expects and the level of divestitures to which it will be exposed as a result of the antitrust risk, and*

Advice to DTAG

- Bottom line:

This deal has significant antitrust risk. DTAG needs to negotiate not only a good price but also provisions that maximize certainty of closing recognizing:

1. *Hertz will require a deal that provides it with significant expected value at the time of signing,*
2. *Hertz's expected value will be a function of the gains from trade it expects and the level of divestitures to which it will be exposed as a result of the antitrust risk, and*
3. *Hertz will want to be able to terminate the merger agreement if the divestitures required to close the deal will not provide it with an adequate return given the purchase price*

Contractual Risk Allocation

Party objectives in M&A agreements

- Sellers
  - Three goals
    1. Obtain the highest purchase price possible
       - Ideally, extract in the purchase price all the gains from trade that the buyer expects the deal to generate
    2. Close the transaction prior to the *termination date*
       - The termination date is the date on which either party can terminate the merger agreement without cause—usually one year from signing
       - Called *certainty of closing*—Sellers do deals in order to get paid
       - Sellers tend to lose value during pendency of the transaction
         - The "damaged goods" problem
           - Target often lacks strategic direction and focus during pendency of transaction
           - Key employees often leave company for jobs in other companies
           - Customers may leave given uncertainty of what will happen with the target
         - Purchase price in a second auction after a failed transaction is typically at significant discount even after accounting for damaged goods problem
    3. Minimize the delay between signing and closing
       - Usually a minor concern compared to the purchase price and certainty of closing

Party objectives in M&A agreements

- Buyers
  - Three goals
    1. Obtain the lowest purchase price possible
       - Ideally, retain in the purchase price all of the gains from trade that the buyer the deal to generate
    2. Close the transaction provided the deal generates sufficient value; otherwise, walk away from transaction without loss of value
       a. The DOJ/FTC might require divestitures that would reduce the benefits of the deal and perhaps even make them negative
       b. The market/regulatory environment might change in ways that make the deal a bad deal
       c. The target might suffer a material adverse change in its business
       d. The buyer might suffer a material adverse change in its business
    3. Minimize the delay between signing and closing
       - Usually a much more important consideration to buyers than to sellers

Negotiating the contract

1. Need an "out" if the deal is illegal
   - Neither party wants to be contractually obligated to close a deal that would be illegal and subject the party to sanctions
2. Need an "out" if the deal no longer provides positive value
   - Each party wants a right to terminate the purchase agreement if the party no longer finds the deal in its interest
3. Each party wants to maximize the probability that the deal *will* close IF AND ONLY IF the party *wants* the deal to close
   - Objectives for each party:
     a. Include provisions in the contract that will obligate the counterparty to—
        i. Take all necessary steps to proceed to the closing before the *termination date*, and
        ii. Minimize its ability to terminate the contract before the termination date
     b. Maximize the ability of the party to terminate the contract if and when it concludes that the deal is no longer in its interests

Negotiating the contract

- Valuing the deal/weighing the trade-offs
  - The buyer and the seller are likely to view the deal as a *gamble with risk*
  - If so, each party will value the deal on its own (risk-adjusted) *expected value* of signing the contract
    - That is, each party will consider:
      1. The net benefits of closing the deal (which will be positive) :

Respective gains from trade before deal costs

$$B_{Buyer} = V_c + V_s - P - D_{Buyer}$$
$$B_{Seller} = P - V_c - D_{Seller}$$

where V_c is the target's going concern value, V_s is the expected total synergies, D is the deal costs, and P is the purchase price

      2. The net benefits of not closing the deal (which may be negative):

$$B_{Buyer} = P - D_{Buyer}$$
$$B_{Seller} = (V_c - L_c) - D_{Seller}$$

where L_c is the loss of going concern value

      3. The subjective probability that the deal will close to discount these benefits
         - The buyer and the seller may be significantly different probabilities

Negotiating the contract

- Valuing the deal/weighing the trade-offs
  - The probability of the deal closing (or not closing) will be a function of the risk-shifting provisions in the contract
    - The stronger the provisions forcing the buyer to take steps to eliminate the antitrust concerns, the higher the probability of closing
  - BUT the net benefits of the deal closing to the buyer also will be a function of the risk-shifting provisions in the contract
    - Typically, the stronger the provisions forcing the buyer to accept a consent decree and close, the less the synergy gain for the buyer
      - In many deals, the bulk of the synergies gain will come in the overlap areas
    - If stronger provisions are likely to reduce deal synergies, the buyer will reduce the maximum purchase price it is willing to pay
  - Similarly, the net benefits of the deal closing to the seller also will be a function of the risk-shifting provisions in the contract
    - The stronger the provisions, the greater the probability of closing
    - BUT stronger provisions are likely to reduce deal synergies, which will lower the maximum purchase price the buyer is willing to pay

The structure of a merger agreement

- The antitrust-related provisions:
  1. Closing conditions (conditions precedent)
     - Protect a party from the obligation to close unless and until the closing conditions are satisfied
  2. Termination provisions
     - Especially the *"drop-dead" date*: The date on which either party is free to unilaterally terminate the merger agreement without cause
     - Merger agreement can provide for early termination or extensions in specified contingencies
  3. Affirmative covenants
     - Negotiated to increase the probability that the conditions precedent will be satisfied for the drop-dead date
     - NB: The obligations under affirmative covenants usually expire upon the termination of the agreement

The structure of a merger agreement

- Three questions
  1. What does each party want in these provisions to best achieve its objectives?
  2. Where will the parties agree or disagree on the content of a provision?
  3. How will the disagreements be resolved?

1. Protection against an unlawful closing

- Conditions precedent

	Conditions Precedent	Affirmative Covenant
Waiting period	HSR waiting period has expired or been terminated	Efforts to satisfy condition precedent

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1. Protection against an unlawful closing

- Conditions precedent

	Conditions Precedent	Affirmative Covenant
Waiting period	HSR waiting period has expired or been terminated	Efforts to satisfy condition precedent
Injunctions and other legal restraints	No injunction or legal restraint making the closing unlawful	Efforts to avoid entry of injunction or other legal obstacle to closing
Litigation	[Sometimes] No threatened or pending litigation that seeks to enjoin the transaction	[No obligation]
	-or-	
	[No condition precedent]	Efforts to defend litigation to remove legal obstacles to closing

2. Protection against unwanted closing

- Termination

Event	Termination right
By mutual agreement	At any time by mutual consent

2. Protection against unwanted closing

- Termination

Event	Termination right
By mutual agreement	At any time by mutual consent
Termination date	By either party after the Termination Date ("drop-dead date") —Usually 12 months —Termination right not available to any party whose breach of any provision of the agreement resulted in the failure of the merger to be consummated on or before such date

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Extensions to finish antitrust investigation and, if desirable, litigate	Usually 6 months

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By mutual agreement	At any time by mutual consent
Termination date	By either party after the Termination Date ("drop-dead date") —Usually 12 months —Termination right not available to any party whose breach of any provision of the agreement resulted in the failure of the merger to be consummated on or before such date
Extensions to finish antitrust investigation and, if desirable, litigate	Usually 6 months
Unlawful transaction	By either party if a law or court order (having exhausted all appeals) makes the closing unlawful

3. Getting the deal to closing

- Other affirmative covenants

Stage	Objective	Affirmative Covenants
Prefiling period	Finalize defense Customer roll-out Prepare DOJ/FTC presentation	General “efforts” covenant Share information Cooperate in defense (may provide that Buyer takes lead)

3. Getting the deal to closing

- Other affirmative covenants

Stage	Objective	Affirmative Covenants
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HSR filing	File HSR forms	Obligation to file HSR forms (usually 10 business days after signing)

3. Getting the deal to closing

- Other affirmative covenants

Stage	Objective	Affirmative Covenants
Prefiling period	Finalize defense Customer roll-out Prepare DOJ/FTC presentation	General "efforts" covenant Share information Cooperate in defense (may provide that Buyer takes lead)
HSR filing	File HSR forms	Obligation to file HSR forms (usually 10 business days after signing)
Initial waiting period	Make initial presentation Answer staff questions Follow-up with customers	
Second request period	Comply with second request Defend depositions Answer staff questions Respond to staff theories	
Final waiting period	Make final arguments	

3. Getting the deal to closing

- Other affirmative covenants

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Prefiling period	Finalize defense Customer roll-out Prepare DOJ/FTC presentation	General "efforts" covenant Share information Cooperate in defense (may provide that Buyer takes lead)
HSR filing	File HSR forms	Obligation to file HSR forms (usually 10 business days after signing)
Initial waiting period	Make initial presentation Answer staff questions Follow-up with customers	Efforts to obtain government consents and clearances Obligations to respond to government requests Obligations to consult in prosecuting defense Right to attend each other's meetings
Second request period	Comply with second request Defend depositions Answer staff questions Respond to staff theories	
Final waiting period	Make final arguments	

3. Getting the deal to closing

- Investigation outcome affirmative covenants

Investigation outcome	Covenant
Close investigation	Proceed to closing if all conditions precedent satisfied

3. Getting the deal to closing

- Investigation outcome affirmative covenants

Investigation outcome	Covenant
Close investigation	Proceed to closing if all conditions precedent satisfied
Settle investigation	No obligation -or- "High-or-high water" provision -or- Qualified HOHW provision

3. Getting the deal to closing

- Investigation outcome affirmative covenants

Investigation outcome	Covenant
Close investigation	Proceed to closing if all conditions precedent satisfied
Settle investigation	No obligation -or- "High-or-high water" provision -or- Qualified HOHW provision -or- Antitrust reverse termination fee -or- Ticking fee -or- "Take or pay" provision Seller uses these, not so much to get paid, but rather to incentivize the buyer to resolve the antitrust problems

3. Getting the deal to closing

- Investigation outcome affirmative covenants

Investigation outcome	Covenant
Close investigation	Proceed to closing if all conditions precedent satisfied
Settle investigation	No obligation -or- "High-or-high water" provision -or- Qualified HOHW provision -or- Antitrust reverse termination fee -or- Ticking fee -or- "Take or pay" provision Seller uses these, not so much to get paid, but rather to incentivize the buyer to resolve the antitrust problems
Litigate	No obligation -or- Obligation to litigate (will be subject to termination provisions)

3. Getting the deal to closing

- Investigation outcome affirmative covenants

Investigation outcome	Covenant
Close investigation	Proceed to closing if all conditions precedent satisfied
Settle investigation	No obligation -or- "High-or-high water" provision -or- Qualified HOHW provision -or- Antitrust reverse termination fee -or- Ticking fee -or- "Take or pay" provision
Litigate	No obligation -or- Obligation to litigate (will be subject to termination provisions)
Voluntarily terminate agreement	Usually not covered in merger agreement

Risk-shifting summary

	Buyer-friendly ⟷		Seller-friendly
Level of efforts	Commercially reasonable efforts	Reasonable best efforts	Best efforts
Obligation to make divestitures	Silent/expressly excluded	Divestitures up to cap – measured in asset or revenue terms or MAC applying to part or all of acquired or merged business	Obligation to make any and all divestitures necessary to gain clearance no matter how much or what impact is (HOHW)
Timing for other aspects of regulatory review	Silent/may be deadline for submission of HSR filing	Silent/may be deadline for submission of HSR filing	Express timing for submission of filing, Second Request compliance and other milestones
Timing for offering divestitures	Silent	Silent	Express timing for offering remedies to obtain clearance
Control of regulatory process	Buyer controls; require cooperation from Seller and may give access and information	Buyer leads; Seller entitled to be present at meetings, calls; obligation on Buyer to communicate certain matters to Seller	Full involvement of Buyer in negotiations with regulators; Seller prohibited from communicating without Buyer (except as required by law)
Obligation to litigate	Silent/expressly exclude/litigate at buyer's option	Silent/expressly exclude	Obligation to litigate if regulators block exercisable at seller's option; does not relieve buyer of obligations to make divestitures
Termination provisions	Open-ended, extendable at buyer's option	Tolling at either party's option	Tolling at seller's option
Reverse break-up fee	None	Possible	Substantial fee; provision for interim payments and interest
Time to termination date	As long as buyer anticipates needing to fully defend transaction on merits, plus ability to extend at buyer's option	Tolling at either party's option	Tolling at seller's option at specified inflection points (e.g., second request compliance, commencement of litigation)
"Take or pay" provision	None	None	Requires payment of full purchase price by termination date even if transaction cannot close

Avis Budget Enters the Bidding

2012 Hertz/Dollar Thrifty deal

Contested Takeover Dance

April 26, 2010	Hertz to buy at $1.2 billion
May 3, 2010	Avis sends letter to DT saying it will make a "superior offer"
May 13, 2010	Avis files HSR form for an open market purchase
May 14, 2010	Hertz files HSR form for April 26 deal
June 15, 2010	Avis receives a second request
June 16, 2010	Hertz receives a second request
July 28, 2010	Avis offers $1.33 billion ($46.50 per share 80/20 cash/stock)
Aug. 3, 2010	DT rejects offer as "superior" because of —Lack of deal certainty (no JDA → no exchange of AT analysis) —No antitrust reverse breakup fee
Aug. 31, 2010	Hertz releases comparative AT analysis —Avis is 3 → 2 in mid-tier value brands —Avis closer in average rental price than Hertz to DT —Avis would require a much larger brand divestiture —Avis deal provides less contractual protection on AT risk ($250m v. $335m in U.S. HOHW revenue cap; no ARTF v. $44.6m)

2012 Hertz/Dollar Thrifty deal

Contested Takeover Dance

Sept. 2, 2010	Avis raises bid to $1.36 billion —Rejects significance of ARTF —Hertz has higher leisure revenue than Avis Budget (AAA)
Sept. 12, 2010	Hertz to $1.43 billion ($50/share)
Sept. 23, 2010	Avis raises bid to $1.5 billion ($52.71/share v. $50.25/share)
Sept. 24, 2010	Hertz affirms bid is “best and final”
Sept. 27, 2010	DT rejects Avis bid and affirms recommendation for Hertz merger
Sept. 27, 2010	Avis announces it will launch a (hostile) exchange offer for DT —Asks that DT shareholder vote be delayed from 9/30 until 12/30
Sept. 29, 2010	Hertz announces it will terminate merger agreement if DT shareholders reject merger agreement
Sept. 30, 2010	DT shareholders rejects Hertz merger agreement
Sept. 30, 2010	Hertz announces it will terminate 2010 merger agreement
Sept. 30, 2010	Avis reaffirms commitment to acquire DT and pursue exchange offer

2012 Hertz/Dollar Thrifty deal

Contested Takeover Dance

Oct. 5, 2010	Avis and DT agree to cooperate in seeking regulatory approval
Jan. 11, 2011	FTC update—review continuing
May 9, 2011	Hertz offers $2.1 billion ($72/share 80/20) [ARTF ?]
May 12, 2011	Hertz and DT to cooperate in seeking regulatory approval
May 24, 2011	Hertz commences exchange offer for DT
June 6, 2011	DT recommends that shareholders take no action on either deal
July 14, 2011	Hertz files HSR form for exchange offer
Aug. 15, 2011	Hertz receives second request
Aug. 21, 2011	DT wants best and final offers by Oct. 10
Sept. 14, 2011	Avis pulls out of bidding
Oct. 10, 2011	No new proposals submitted by Hertz or Avis DT formally terminates solicitation process
Oct. 27, 2011	Hertz withdraws bid
Aug. 23, 2012	DT major shareholders say they would accept a $2.4 billion bid
Aug. 27, 2012	Sign deal at $2.3 billion

2012 Hertz/Dollar Thrifty deal

- Comparison with 2010 deal

	2010 Deal	2012 Deal
Total price	$1.3 billion	$2.3 billion
Price per share	$41.00 (80/20)	$87.50 cash
Deal structure	Rev. triangular	Tender offer*
Annual synergies	$180 million	$160 million
Termination date	12 months	4 months
HOHW cap	Advantage + ≤ $175 m rev.	Advantage presold + undisclosed "Proposed Consent Agreement"
ARTF	$44.6 million	None
Reimbursement of expenses	Up to $5 million	Up to $5 million

* Pursuant to Agreement and Plan of Merger between Hertz and Dollar Thrifty.

2012 deal premium

- Analysis
  - Hertz' estimate of the going concern value V_c of DTAG appears to be $1.64 billion
    - Hertz set the corporate enterprise of DTAG postmerger at $2.3 billion, which equals 7.8x the midpoint of DTAG's EBITDA guidance for 2012 ($298 million)
    - Hertz said the DTAG enterprise value represented a 40% premium over DTAG's premerger multiple
    - Discounting for the 40% premium gives a V_c of $1.64 billion
    - Compare to $932 million (after dividend) in 2010
  - Hertz claimed an expected annually recurring synergy gain of $160 million
    - Value as a 10-year annuity:

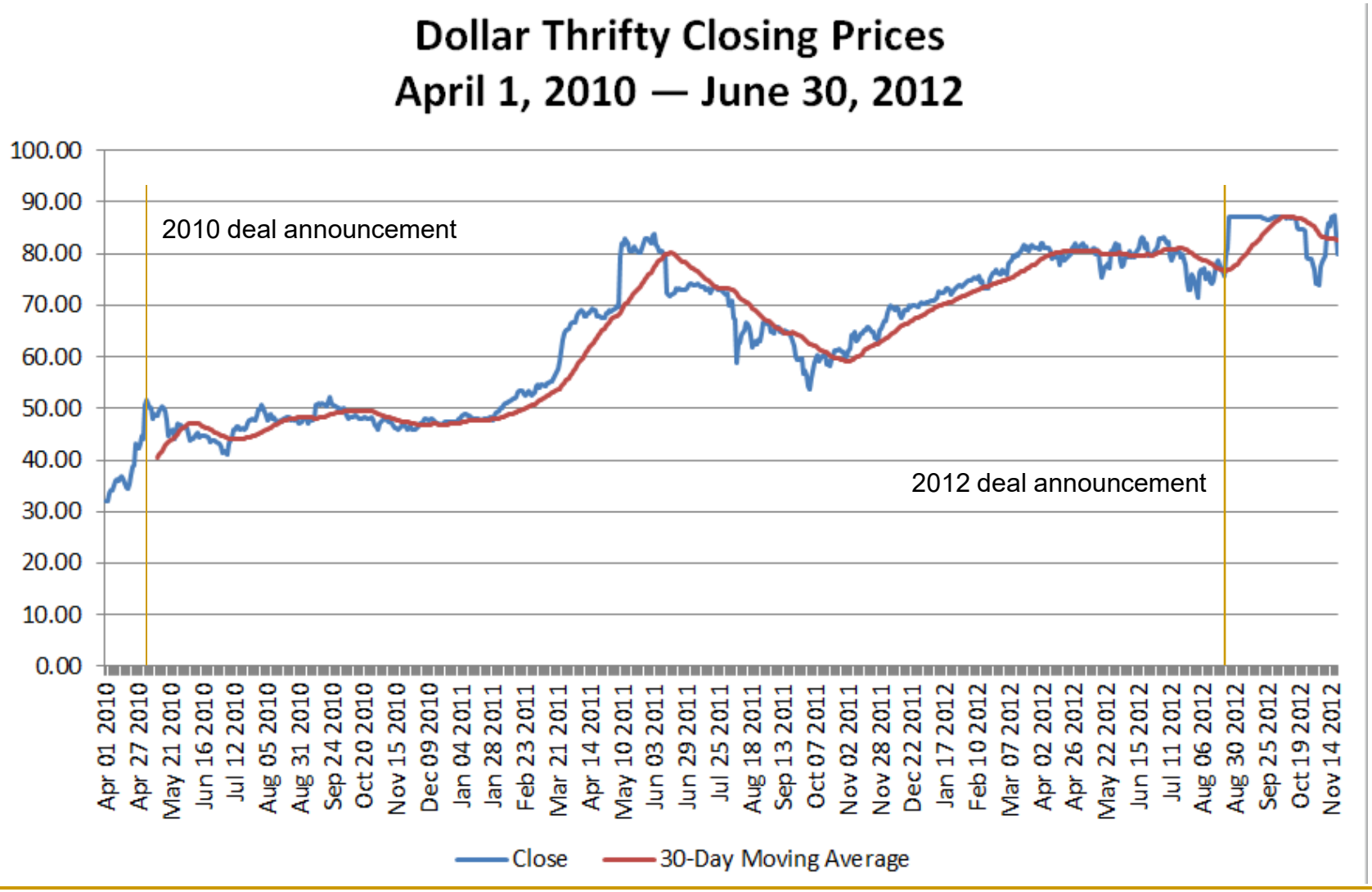
$$V_g = A\left[\frac{1-(1+r)^{-n}}{r}\right] = \$160 \text{ million}\left[\frac{1-(1+0.07)^{-10}}{0.07}\right] = \$1.12 \text{ billion}$$

  - So Hertz expects that the total value V_t of Dollar Thrifty postmerger will be:

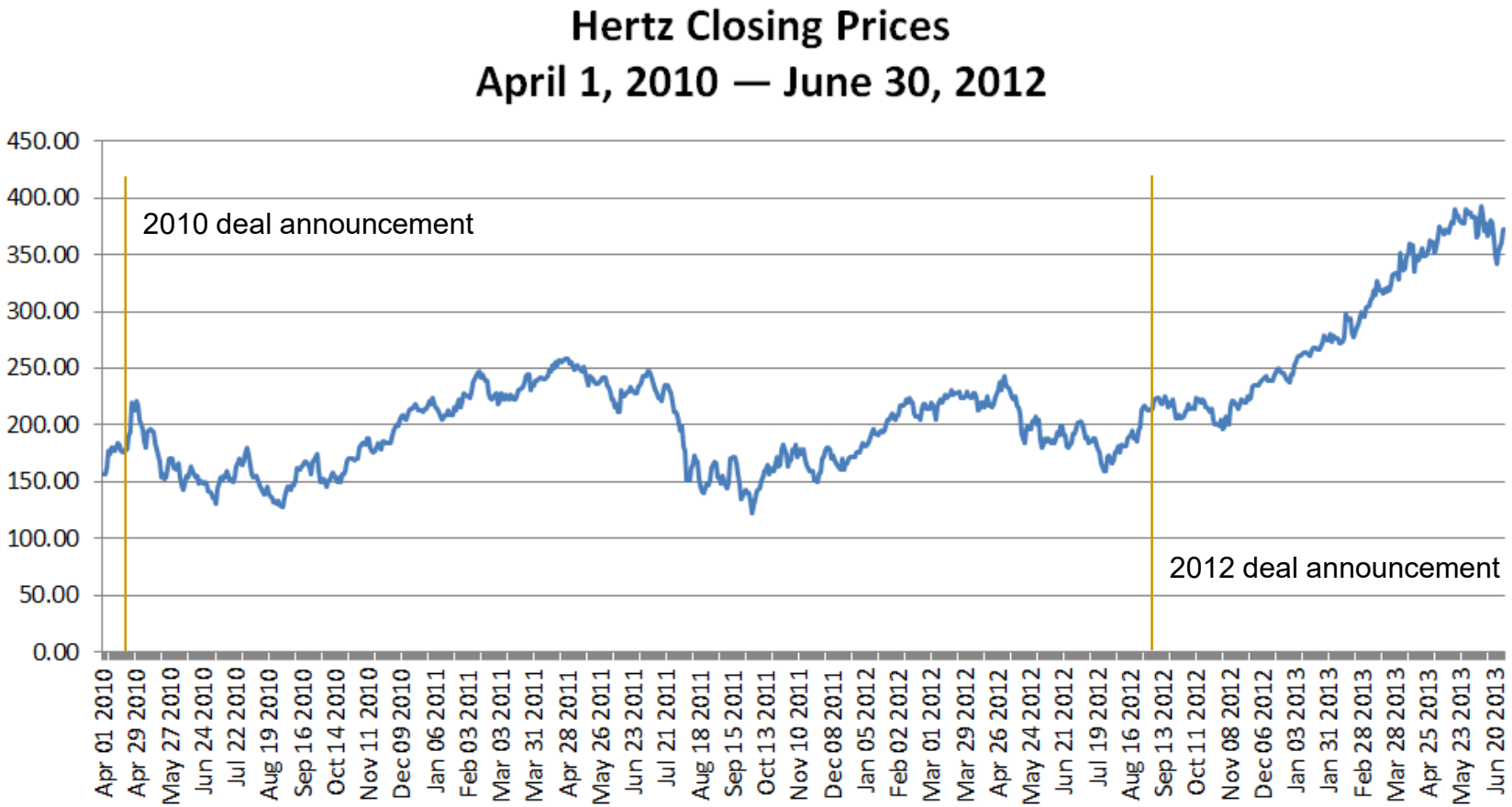
$$V_t = V_c + V_g = \$1.64 \text{ billion} + \$1.12 \text{ billion}$$
$$= \$2.76 \text{ billion}$$

The purchase price of $2.3 billion implies that Hertz gave up most of the synergies to DTAG shareholders *under our assumptions*

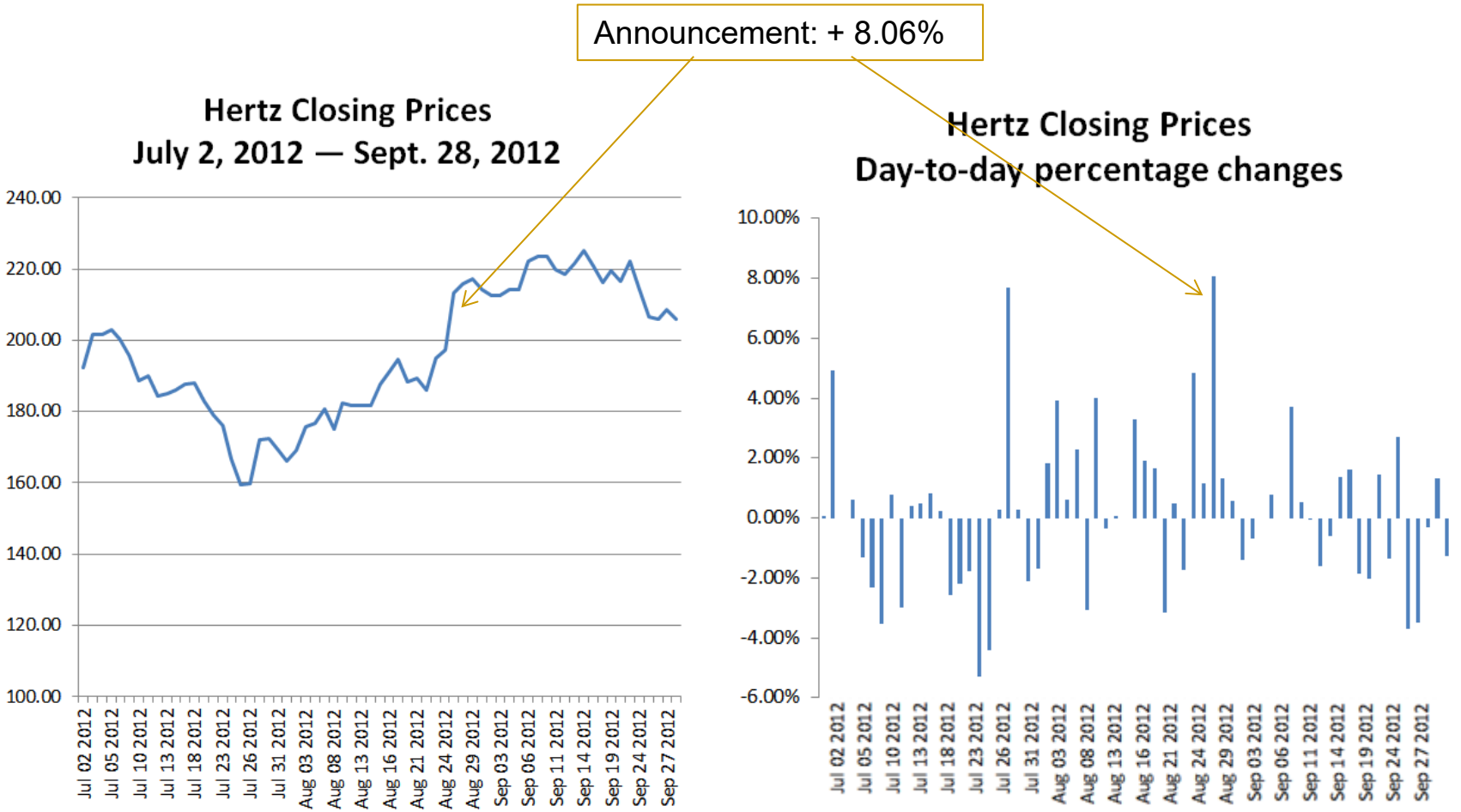
Dollar Thrifty stock prices



Hertz stock prices



Hertz stock prices



The FTC Consent Order

FTC Complaint

- Issued November 15, 2012
  - Eight-month investigation
- Relevant markets
  - Product market: Airport car rentals
    - Alternative: Non-contracted airport car rentals (excludes rentals made at prenegotiated rates and terms)
  - Geographic markets: 72 individual airport locations
- Competitive effects
  - Eliminates direct competition between parties (all markets)
  - Eliminates future competition between parties (several markets)
  - Increases likelihood of unilateral exercise of market power by Hertz
  - Increases likelihood of coordinated interaction
  - Increases likelihood that customers will pay higher prices

FTC Complaint

- Violations
  - Acquisition, if consummated, would violate Clayton Act § 7 and FTC Act § 5
  - Acquisition agreement violates FTC Act § 5
- Allegations regarding barriers to entry:
  - On-airport concession locations
  - Recognized brand
  - Relationships with online travel agencies and other distribution channels
  - Sufficient size to achieve economies of scale

FTC Consent Order

- Agreement containing consent order(s)
  - Negotiated and signed by parties prior to Commission vote
  - Parties to the FTC agreement
    - Hertz Global Holdings, Inc.—merging party
    - Franchise Services of North America Inc. (FSNA) (operates U-Save rental business)—divestiture buyer
    - Macquarie—providing financing for divestiture buyer

FTC Consent Order

- Proposed consent order: Hertz to divest—
  1. Its Advantage Rent-a-Car business (consisting of 62 locations, including 35 on-airport locations)[1] + 16 Dollar Thrifty on-airport locations where Advantage does not yet operate to FNSA/Macquarie jv
     - Advantage: 15 days after the Effective Date or December 12, 2012, whichever is later
     - DT assets: 90 days after the Effective Date
     - Purchase price: $16 million—1/2 of what Hertz paid to acquire Advantage out of bankruptcy in 2009[2]
  2. 13 Dollar Thrifty on-airport locations to FNSA/Macquarie jv or another Commission-approved buyer (post-acquisition)
     - 60 days after signing of Agreement to submit signed divestiture agreement
     - 6 months after the Effective Date to divest
- Maintain assets order
  - Contrast with Hold Separate Order

[1] Hertz Global Holdings, Inc., Form 10-K for the fiscal year ended December 31, 2012, at 6.
[2] Hertz reported a loss of $31.4 million on the Advantage divestiture. *See id.* at 54. This implies that Hertz received on 33.8% of the value of Advantage as carried on Hertz' books.

FTC Consent Order

- Commission vote to provisionally accept consent order
  - 4-1, with Rosch dissenting from acceptance of consent order (insufficient as relief at several dozen airports)
- Subsequent events
  - November 26, 2012: Federal Register notice published to begin comment period
    - 30 days for the FTC under Commission rules
    - 60 days for the DOJ under the Tunney Act
  - December 17, 2012: Comment period ends
    - Six comments received
  - July 11, 2013: Commission final acceptance of consent order
    - 3-0-1, with Rosch dissenting and Wright not participating

Aftermath

- Divestiture arrangement and leasing risk
  - JV buyer to lease 24,000 vehicles from Hertz and bear the residual value risk
  - When JV began to turn over fleet, experienced significant losses
  - October 25, 2013: JV had lost $8.6 million
- Divestiture solution falls apart
  - October 2, 2013: JV missed scheduled payment to Hertz
  - November 2, 2013
    - Refinancing negotiations fail
    - Hertz terminates Master Lease Agreement and seeks return of all leased vehicles
  - November 5, 2013: JV seeks bankruptcy protection

Aftermath

- Subsequent transactions
  - January 30, 2014: FTC grants FSNA's petition FTC to sell Advantage to Catalyst Capital Group (winning bidder in bankruptcy auction—40 locations, excluded 28)
  - May 29, 2014: FTC grants FNSA's petition to sell 22 former Advantage locations to Hertz (10) and Avis (12)
  - September 5, 2014: FTC grants FNSA's petition to sell Portland location to Avis and San Jose locations to Sixt Rent-A-Car

Class 9 slides

Unit 8. Competition Economics

Part 1. Demand, Costs, and Profits

Professor Dale Collins
Merger Antitrust Law
Georgetown University Law Center

September 24, 2024

0. Opening Thoughts

Economics is common sense made difficult

To hide the fact that their discipline is no more than common sense, economists have created a thicket of esoteric mumbo-jumbo.
—Mail & Guardian (Mar. 13, 1998)

Economic science is but the working of common sense aided by appliances of organized analysis and general reasoning, which facilitate the task of collecting, arranging, and drawing inferences from particular facts.
—Alfred Marshall, Principles of Economics (1890)

Antitrust and economics

- The role of economics in antitrust
  - In per se violations, no need to prove actual or likely anticompetitive effect
    - So only the role for economics is proof of damages
  - In rule of reason violations, need to prove actual or likely anticompetitive effect
    - Economics is critical to predicting competitive effects
    - But very few rule of reason cases are investigated or litigated
    - Challenges are to practices that are already in place and can observe competitive effects
      - But still need economics for assessing the "but for" world
  - In monopolization or attempted monopolization cases, need to prove anticompetitive exclusionary conduct
    - Some role for economics in identifying anticompetitive exclusionary conduct
    - But relatively few Section 2 cases are investigated or litigated
    - Challenges are to practices that are already in place and can observe competitive effects
      - But still need economics for assessing the "but for" world
  - In merger cases, need to prove actual or likely anticompetitive effect
    - Economics is essential (under current law)
    - Many mergers are investigated and challenged
    - With the HSR Act, almost all are investigated prior to closing when likely effects cannot be observed and must be predicted
    - Economics provides the principal tool for predicting likely future competitive effects both with and without the merger

More on motivation

- The purpose of merger antitrust law
  - Section 7 of the Clayton Act prohibits mergers and acquisitions that "may be substantially to lessen competition, or to tend to create a monopoly"[1]
  - In modern terms, a transaction may substantially lessen competition when it threatens, with a reasonable probability, to create or facilitate the exercise of market power to the harm of consumers
  - Operationally, a transaction harms consumer when it result in—
    - Higher prices
    - Reduced market output
    - Reduced product or service quality in the market as a whole, *or*
    - Reduced rate of technological innovation or product improvement in the market

    Merger antitrust analysis typically focuses on price effects (see Unit 2)

    compared to what would have been the case in the absence of the transaction (the "but for" world) and without any offsetting consumer benefits

Consequently, a central focus in merger antitrust law is the effect a merger is likely to have on the profit-maximizing incentives and ability of the merged firm to raise price in the wake of the transaction. In the first instance, this requires us to know how a profit-maximizing firm operates. The basic tools to enable us to do this analysis is the subject of this unit. These same tools are also fundamental to an understanding of merger antitrust law defenses.

[1] 15 U.S.C. § 18.

Antitrust economics

- Two starting points
  1. The *law of demand*: Demand curves are downward sloping
  2. *Profit maximization*: Firms act to maximize their profits
- With these starting points, economics enables us to—
  1. Analyze the incentives and abilities of a profit-maximizing firm given the demand curve facing the firm (the *residual demand curve*)
  2. Analyze how the firm's residual demand curve might change with a merger
  3. Predict how the merged firm might act differently postmerger from the two merging firms premerger
  4. Predict how other firms inside and outside the market may react to the merger
  5. Predict the consumer welfare consequences of this change in behavior

Profit maximization

To begin the analysis, we must understand how a firm makes its choices of price, production level, and other operating variables to maximize its profits

To keep things simple, we will look at a firm that produces only a single undifferentiated product

Profit maximization

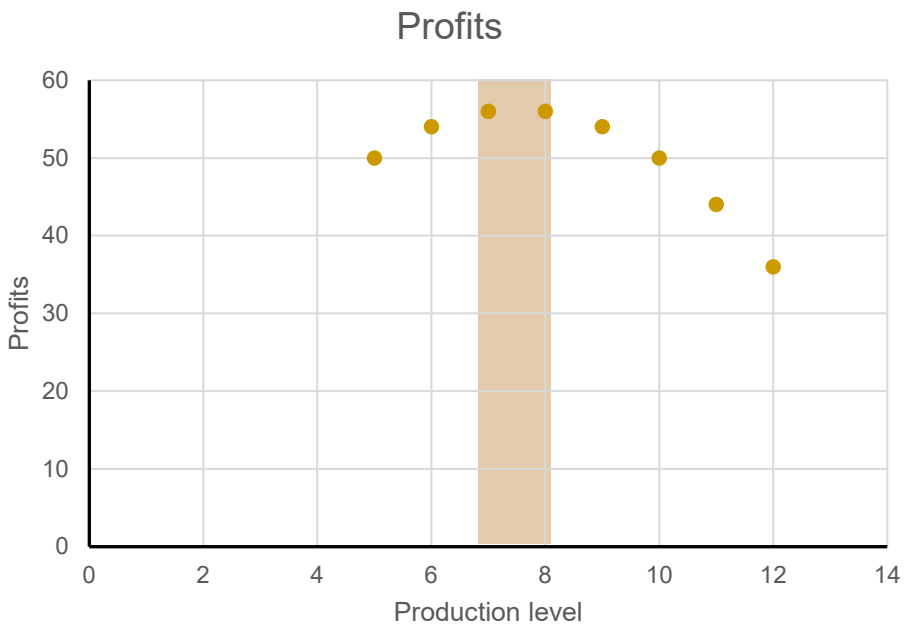
- Consider a very simple problem:
  - Avco makes widgets at a (constant) cost of $5 each
    - When Avco makes 5 widgets, it can sell out at a price of $15 per widget. Since Avco makes $10 on each widget, Avco makes profits of $50
  - Avco is thinking of increasing its production—it will do so only if this will increase its profits
    - If Avco makes 6 widgets, it must drop its price to $14 to sell out. Since Avco makes $9 on each widget, Avco would now make profits of $54. Avco should increase its production
  - Should Avco increase its production even more?
    - If Avco makes 7 widgets, it must drop its price to $13 to sell out. Since Avco makes $8 on each widget, Avco would now make profits of $56
    - If Avco makes 8 widgets, it must drop its price to $12 to sell out. Since Avco makes $7 on each widget, Avco would now make profits of $56
    - If Avco makes 9 widgets, it must drop its price to $11 to sell out. Since Avco makes $6 on each widget, Avco would now make profits of $54
    - If Avco makes 10 widgets, it must drop its price to $10 to sell out. Since Avco makes $5 on each widget, Avco would now make profits of $50
    - If Avco makes 11 widgets, it must drop its price to $9 to sell out. Since Avco makes $4 on each widget, Avco would now make profits of $44

So Avco should increase its production to 7 (or 8) widgets in order to maximize its profits

Profit maximization

- We can see this on a graph:

Quantity	Price	Revenues	Cost	Profits
5	15	75	25	50
6	14	84	30	54
7	13	91	35	56
8	12	96	40	56
9	11	99	45	54
10	10	100	50	50
11	9	99	55	44
12	8	96	60	36



Profit maximization

- Let's look at this in another way that better illustrates the underlying economics
  - *Example 1*. If Avco were to increase its production from 5 units to 6 units and drop its price from $15 to $14, two things would happen:
    1. Avco would gain an additional sale, *and*
    2. Avco would have to lower its price on all the units it would sell to clear the market

The result of the firm's downward-sloping residual demand curve

  - These two effects would have two consequences for Avco's profits:
    1. On the one customer Avco gained, Avco would make an additional profit of $9
       - Additional sale of 1 unit times the profit margin of $9 (at a sales price of $14 and a unit cost of $5)
    2. On its original sales of 5 units, Avco would have to lower its price by $1 and so reduce its profits on those sales by $5 (since each unit still costs $5 to make)
       - Original sale price of $15 minus the new sales price of $14 equals a $1 loss on each original sale
       - Five original sales times a $1 loss on each sale equals a $5 profit loss
  - The change in Avco's profits is then:
    - The gain in profits from the additional sales at the new price ($9)
    - *Minus* the loss in profits from lowering the price on the original sales ($5)
    - For a net profit gain of $4 (this is called the *incremental profit*)

Rule: Avco should increase its production whenever the incremental profit gain is positive

Profit maximization

- Let's look at this in another way that better illustrates the underlying economics
  - *Example 2*. Now if Avco were to increase its production from 10 units to 11 units and drop its price from $10 to $9, the same two things would happen:
    1. Avco would gain an additional sale
    2. Avco would have to lower its price on all the units it would sell
  - As before, these two effects would have two consequences for Avco's profits:
    1. On the customer Avco gained, Avco would make an additional profit of $4
       - Additional sale of 1 unit times the profit margin of $4 (at a sales price of $9 and a unit cost of $5) equals $4 profit gain
    2. On its original sale, it would have to lower the price by $1 and so reduce profits on those sales by $10
       - Original sale price of $10 minus the new sales price of $9 equals $1 loss on each original sale
       - Ten original sales times $1 loss on each sale equals a $10 profit loss
  - The change in Avco's profits is then:
    - The gain in profits from the additional sales at the new price ($4)
    - Minus the loss in profits from lowering the price on the original sales ($10)
    - For a net profit loss of $6
  - Indeed, running the same analysis on a decrease in production from 10 units to 9 units would show that Avco would increase its profits

Rule: Avco should decrease its production whenever the incremental profit gain is negative

Profit maximization

- Bottom line:

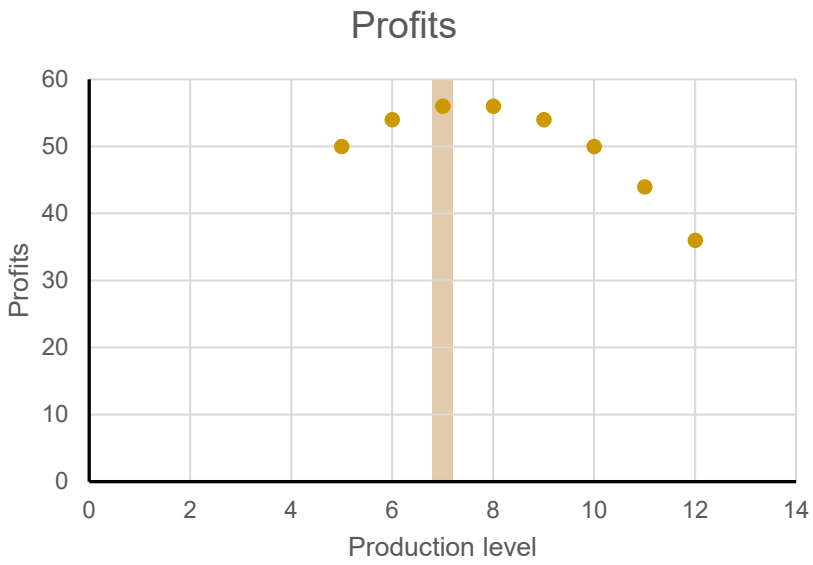
Avco maximizes its profit when its incremental profit is zero

  - *Incremental profit* is the profit earned on selling the *next* unit

This is important: Incremental profit looks to the *next* sale, not the *last* sale

- We can see this on the chart:

Quantity	Price	Revenues	Cost	Profits	Incremental Profit
5	15	75	25	50	4
6	14	84	30	54	2
7	13	91	35	56	0
8	12	96	40	56	-2
9	11	99	45	54	-4
10	10	100	50	50	-6
11	9	99	55	44	-8
12	8	96	60	36	



Profit maximization

- Some definitions
  - *Marginal sales*: Sales that are lost with an increase of one unit of output
    - *Marginal customers* are the customers connected with marginal sales
  - *Inframarginal sales*: Original sales that are retained when the price increases
    - *Inframarginal customers* are the customers connected with inframarginal sales
  - *Marginal profit*: The net profits a firm would make by increasing its production by one unit
    - May be positive or negative
    - *Incremental profits* are the net profits a firm would make increasing its production by some specified amount (which may be more than one unit)
  - *Marginal revenue*: The net revenue a firm would earn by increasing its production by one unit
    - May be positive or negative
    - *Incremental revenue* are the net revenues a firm would earn increasing its production by some specified amount (which may be more than one unit)
  - *Marginal cost*: The net cost to the firm of increasing its production by one unit
    - Always positive
    - *Incremental costs* are the costs a firm would incur by increasing its production by some specified amount (which may be more than one unit)

Profit maximization

- Some important relationships
  1. At a profit maximum, marginal profits are zero
  2. Marginal profit is equal to marginal revenue minus marginal cost
  3. Therefore, to maximize profits, a firm operates so as to set its

marginal revenue equal to its marginal cost

$$mr = mc$$

  4. For a linear inverse demand curve of the form $p = a + bq$, the marginal revenue curve is $mr = a + 2bq$
     - The parameter b will always be negative (since the demand curve is downward sloping)
  5. Marginal revenue can be decomposed into two parts:
     a. The gross gain in profits from the sale of an additional unit at the new price (called the *gain on the marginal sale*)
     b. The gross loss in the profit margin from the sale of the inframarginal units at the new lower price (called the *loss on the inframarginal sales*)

What you should be able to do after Part 1

For a firm—

- Facing a downward sloping residual (inverse) demand curve $p = a + bq$
- With fixed costs f and constant marginal costs c

1. Determine and graph the profit-maximizing levels of—
   - Output q^*
   - Price p^*
   - Profits π^*

"*" (star) indicates that the variable is at its profit-maximizing level

"Δ" (delta) indicates the change in the variable (read this term as "delta q")

2. Determine and graph the net incremental revenue for a firm increasing output by some amount Δq, including—
   - The gross gain in revenues from the increase in output, and
   - The gross loss in revenues from the reduction of price for sales at the original price
3. Derive and graph an inverse demand curve given a demand curve

1. Profit Maximization

An observation by Dave Berry

Later on, Newton also invented calculus, which is defined as "the branch of mathematics that is so scary it causes everybody to stop studying mathematics." That's the whole point of calculus. At colleges and universities, on the first day of calculus, professors go to the board and write huge, incomprehensible "equations" that they make up right on the spot, knowing that this will cause all the students to drop the course and never return to the mathematics building. This frees the professors to spend the rest of the semester playing cards and regaling one another with stories about the "mathematical symbols" they've invented over the years. ("Remember the time Professor Hinkwattle drew a 'cosine derivative' that was actually a picture of a squid?" "Yes! Students were diving out the windows! From the fourth floor!")[1]

[1] Dave Berry, *Up in the Air on the Question of Gravity,* Baltimore Sun, Mar. 16, 1997, at 3J.

Profits

1. When the firm produces output q, its profits $\pi(q)$ are equal to its revenues $r(q)$ minus its total costs $t(q)$:

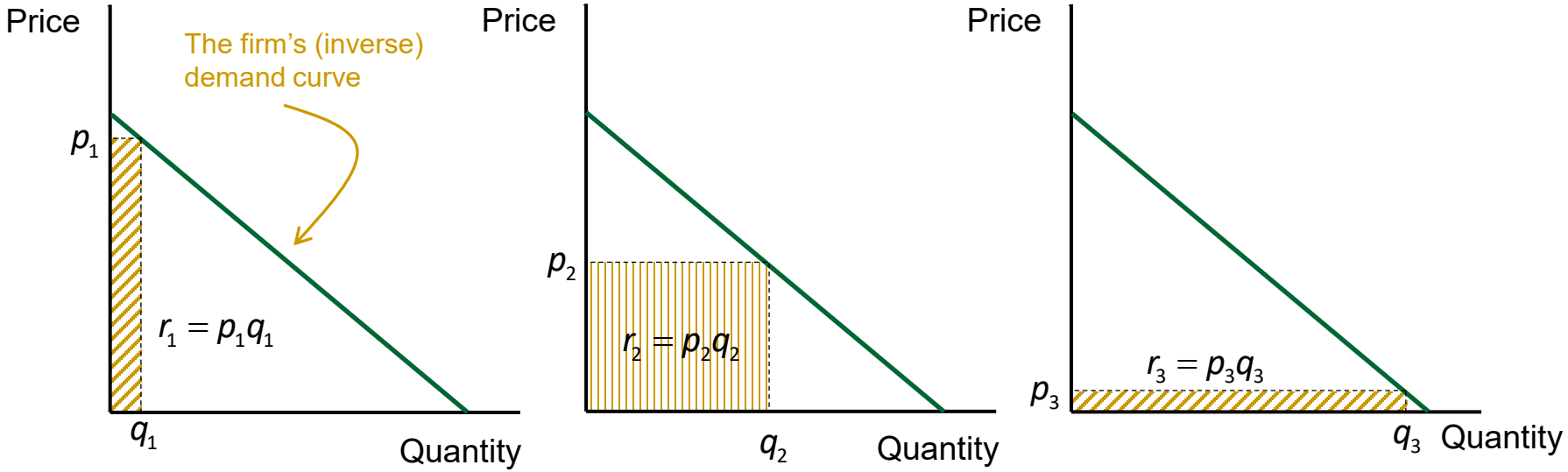
$$\pi(q) = r(q) - t(q)$$

We write $\pi(q)$ rather than just π to remind us that profit is a function of the quantity the firm sells

2. Revenues $r(q)$ are equal to price p times output q:

$$r(q) = pq$$

3. Revenues can be shown as a rectangle in a price-quantity chart:



Profits

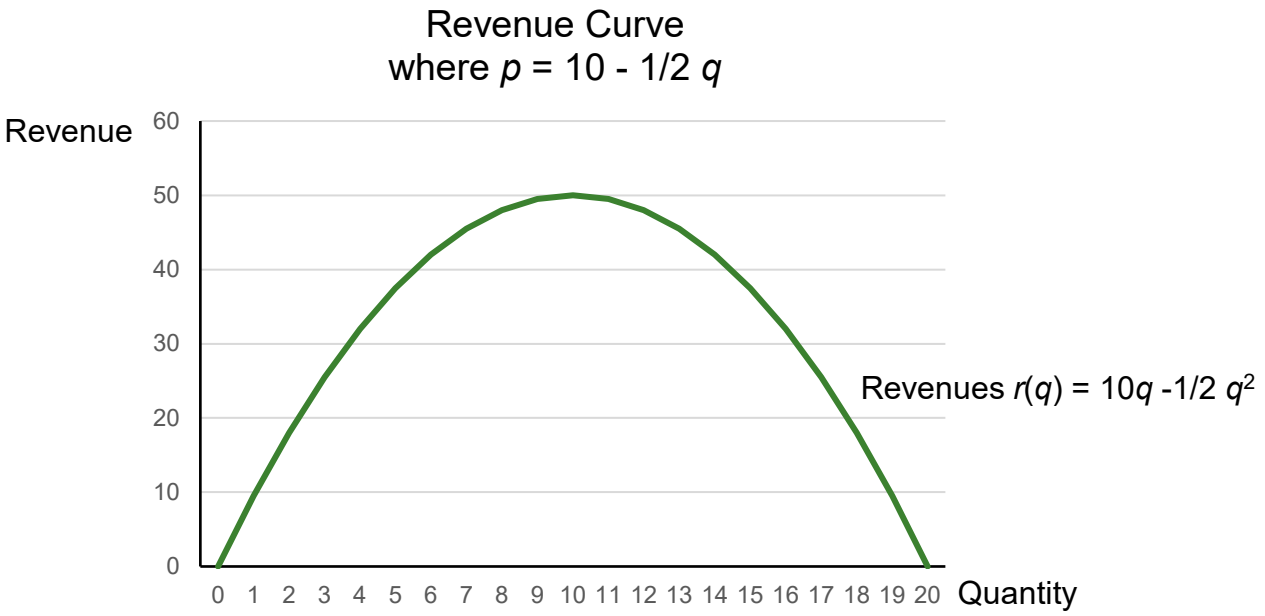
4. When the firm faces a linear downward-sloping residual (inverse) demand curve $p = a + bq$:

The parameter b will be negative since the inverse demand curve is downward sloping

$$r(q) = pq$$
$$= (a + bq)q$$
$$= aq + bq^2$$

Since this is a second-order polynomial, its graph is a parabola

- The graph of the firm's revenues as a function of q is a parabola:



Profits

5. At output q, total costs $t(q)$ are equal to fixed costs f plus variable costs $v(q)$:

$$t(q) = f + v(q)$$

Note that fixed costs f are NOT a function of production quantity q

- With *constant marginal costs* c, variable costs $v(q)$ are equal to marginal cost c times output q:

$$v(q) = cq$$

- Then total costs $t(q)$ may be expressed as:

$$t(q) = f + v(q) \quad \text{generally}$$
$$= f + cq \quad \text{in the case of constant variable costs}$$

Profits

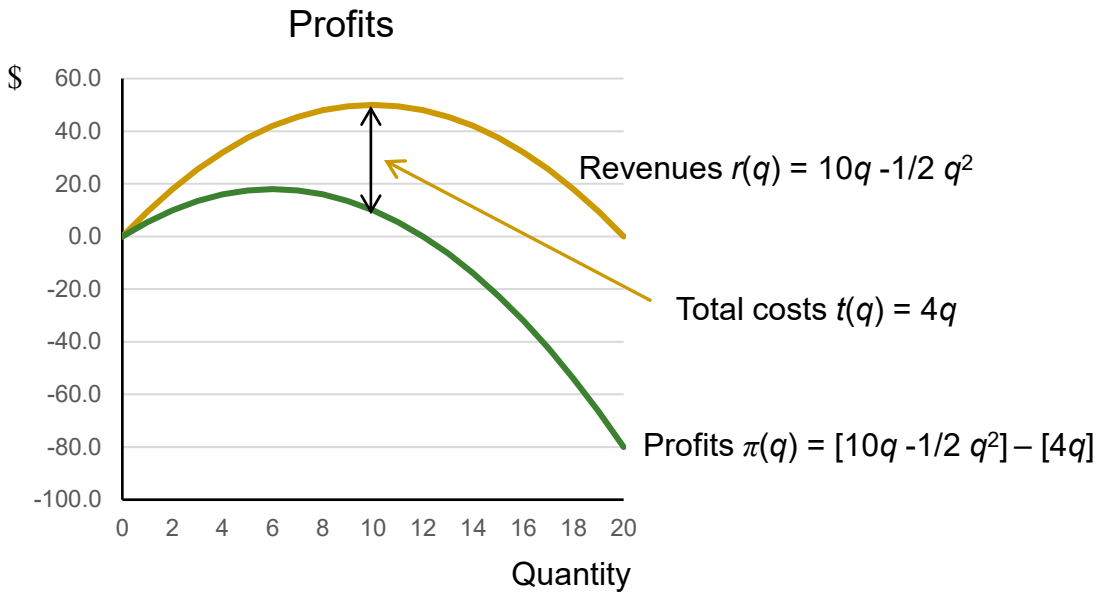
6. Now we can express total profits $\pi(q)$ as:

$$\pi(p) = r(q) - t(q)$$
$$= (a + bq)q - [f + cq]$$
$$= [aq + bq^2] - [f + cq]$$

Since this is a second-order polynomial, its graph is a parabola

- Graphically:

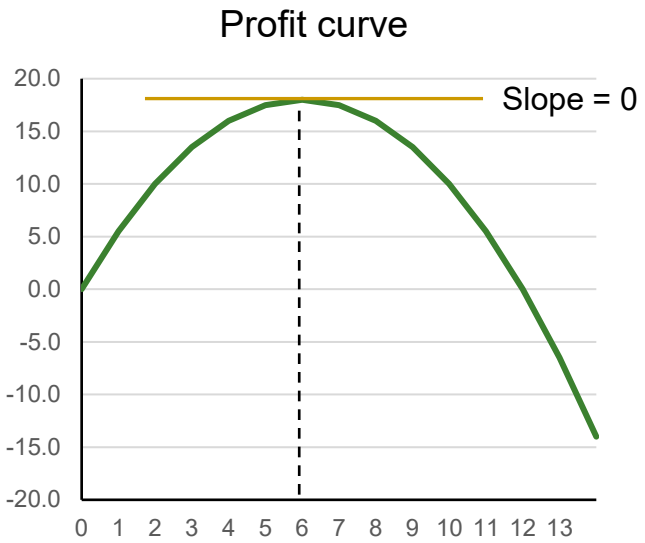
where
$p = 10 - \frac{1}{2} q$
$f = 0$
$c = 4$



Profit maximization

7. The slope at the top of the profit "hill" is zero (a horizontal line):

where
$p = 10 - \frac{1}{2} q$
$f = 0$
$c = 4$



- Definition
  - The *slope of a line* is the change in the *y-values* (Δy) divided by the change in the *x-values* (Δx):

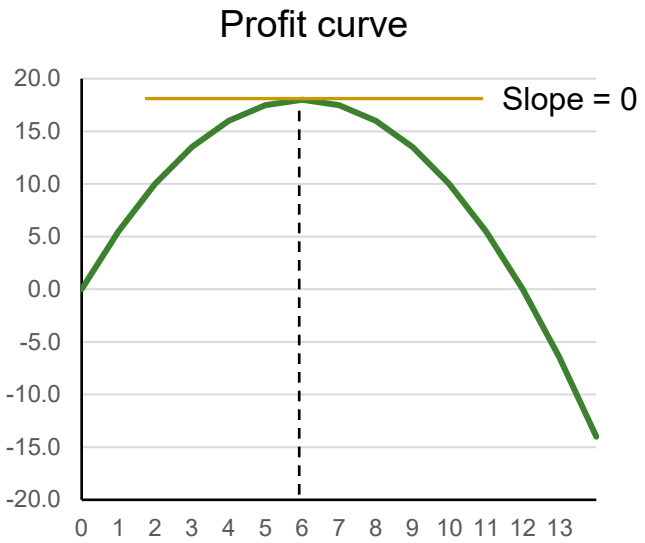
$$\text{Slope} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

  - The *slope of a curve* at a point is the slope of the tangent line at that point (as shown above)
    - *For calculus geeks*: The slope of a curve at a point is the *derivative* of the function at that point

Profit maximization

8. The slope at the top of the profit "hill" is zero (a horizontal line):

where
$p = 10 - \frac{1}{2} q$
$f = 0$
$c = 4$



Solve the problem:

- From the chart, we see that the profit-maximizing output q^* is 6
- From the inverse demand curve, we can calculate $p^* = p(6) = 10 - (1/2)(6) = 7$
- $r^* = r(6) = p^*q^* = (7)(6) = 42$
- $f = 0$ (from the hypothetical)
- $v^* = v(6) = cq^* = (4)(6) = 24$
- $t^* = t(q^*) = f + v(q^*) = 0 + 24 = 24$
- $\pi^* = \pi(q^*) = r^* - t^* = 42 - 24 = 18$

Profit maximization

- Marginal analysis—Some definitions
  - The slope of the revenue curve at an output q is called the *marginal revenue* $mr(q)$
    - Think of marginal revenue as the revenue the firm would earn if it produced one *additional* unit
    - You can also think of the marginal revenue as the *rate of change* in revenue for an increase in output
    - If $r(q) = aq + bq^2$ (the revenue function for a linear inverse demand curve), then:

$$mr(q) = a + 2bq$$

In the continuous case—think of this as the *instantaneous rate of change* of revenue with respect to output

  - The slope of the total cost curve at an output q is called the *marginal cost* $mc(q)$
    - Think of marginal cost as the cost the firm would earn if it produced one *additional* unit
    - If $t(q) = f + cq$ (total costs with constant marginal costs), then:

$$mc(q) = c$$

  - The slope of the profit curve at an output q is called the *marginal profit* $m\pi(q)$
    - Think of marginal profit as the profit the firm would earn if it produced one additional unit
    - Marginal profit is marginal revenue minus marginal cost:

$$m\pi(q) = mr(q) - mc(q)$$

For calculus geeks: The marginal function is the derivative of the primary function. So, for example, the marginal revenue function is the derivative of the revenue function.

Profit maximization

OPTIONAL but well worthwhile. You should not be satisfied to be told the formula for the marginal revenue curve. You should want to understand its derivation from the definition of marginal revenue. This provides that explanation.

- Marginal analysis—Deriving the marginal revenue function (continuous case)
  - If $r(q) = aq + bq^2$ (the revenue function for a linear inverse demand curve), then:

$$mr(q) = a + 2bq$$

    in the continuous case (that is, when one unit is infinitesimally small compared to firm output q)

  - *Proof*: Let q be the firm's output. Then marginal revenue is technically defined as:

$$mr(q) = \frac{r(q+\Delta q) - r(q)}{\Delta q}, \text{ where } \Delta q = 1$$

    Substituting the inverse demand function for r and simplifying:

$$mr(q) = \frac{\left[a(q+\Delta q) + b(q+\Delta q)^2\right] - \left[aq + bq^2\right]}{\Delta q}$$

$$= \frac{\left[(aq + a\Delta q) + \left(bq^2 + 2bq\Delta q + b\Delta q^2\right) - \left[aq + bq^2\right]\right]}{\Delta q}$$

$$= \frac{a\Delta q + 2bq\Delta q + b\Delta q^2}{\Delta q}$$

$$= a + 2bq + b\Delta q$$

But if Δq is very small compared to q, it may be ignored. So $mr(q) = a + 2bq$ in the continuous case. Q.E.D.

Profit maximization

- First order condition (FOC)
  - From Slide 22, we know that profits are maximized at the top of the profit "hill," which is where the slope of the profit curve is zero
  - From Slide 24, we know that the slope of the profit curve at an output q is the marginal profit $m\pi(q)$ evaluated at output q
  - From Slide 24, we also know that the marginal profit $m\pi(q)$ is equal to the marginal revenue $mr(q)$ minus the marginal cost $mc(q)$, all evaluated at output q, that is:

$$m\pi(q) = mr(q) - mc(q)$$

  - The *first order condition* for a profit-maximizing level of output q^* is that the marginal profit at q^* equals zero, that is:

$$m\pi(q^*) = mr(q^*) - mc(q^*) = 0$$

or equivalently:

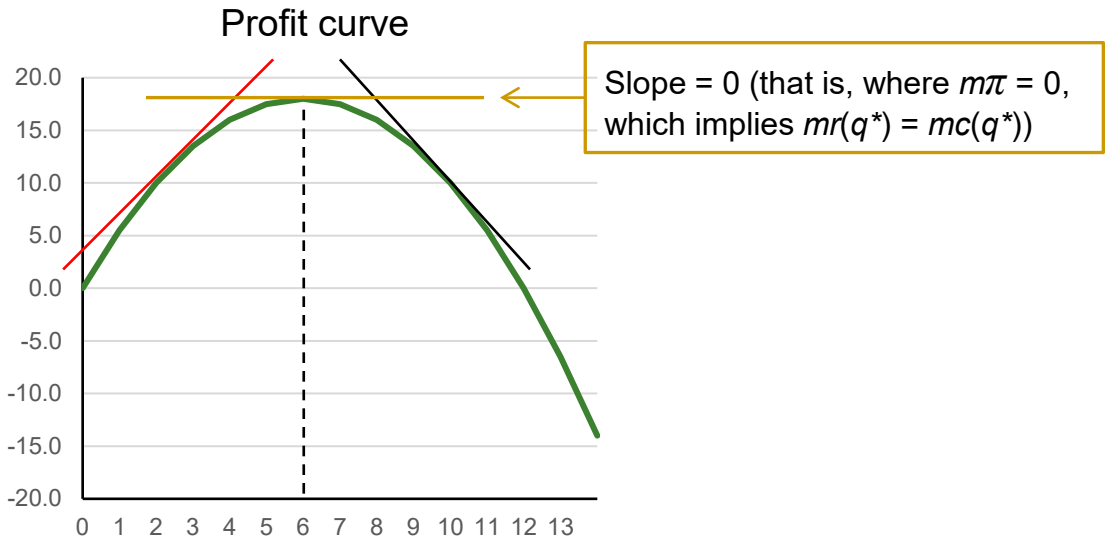
$$mr(q^*) = mc(q^*)$$

A profit-maximizing firm sets its production level q so that its marginal revenue is equal to its marginal cost

Profit maximization

- First order condition—Example

where
$p = 10 - \frac{1}{2} q$
$f = 0$
$c = 4$

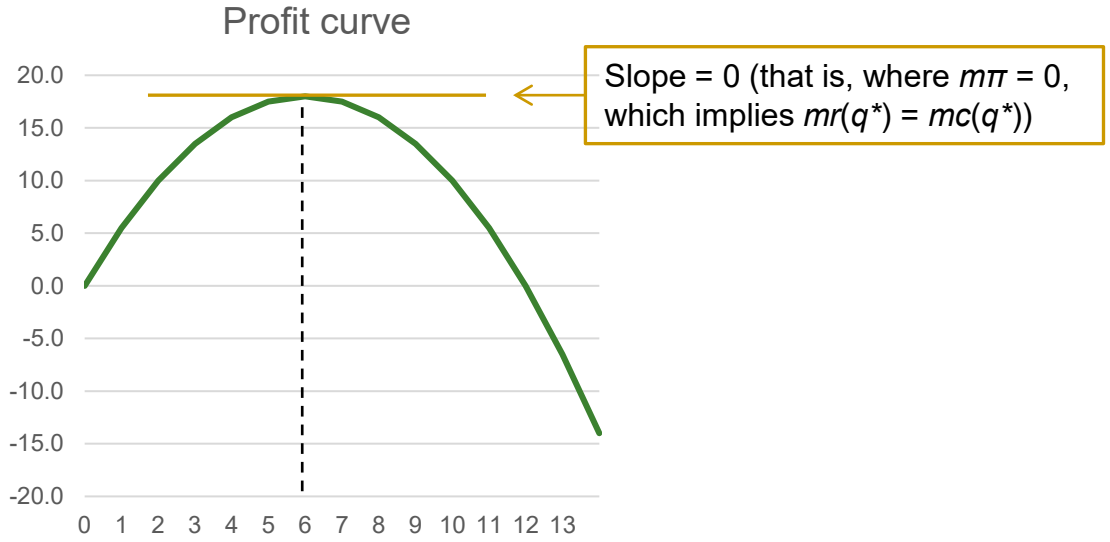


- *Key concept*: Think of the slope as the *instantaneous rate of change* of profits with respect to output
  - If the slope is positive ($m\pi > 0$), then profits are increasing with increases in output
  - If the slope is negative ($m\pi < 0$), then profits are decreasing with increases in output
  - If the slope is zero ($m\pi = 0$), then a change in output in either direction will decrease profits (i.e., the firm is at a profit maximum)

Profit maximization

- First order condition—Example

where
$p = 10 - \frac{1}{2} q$
$f = 0$
$c = 4$

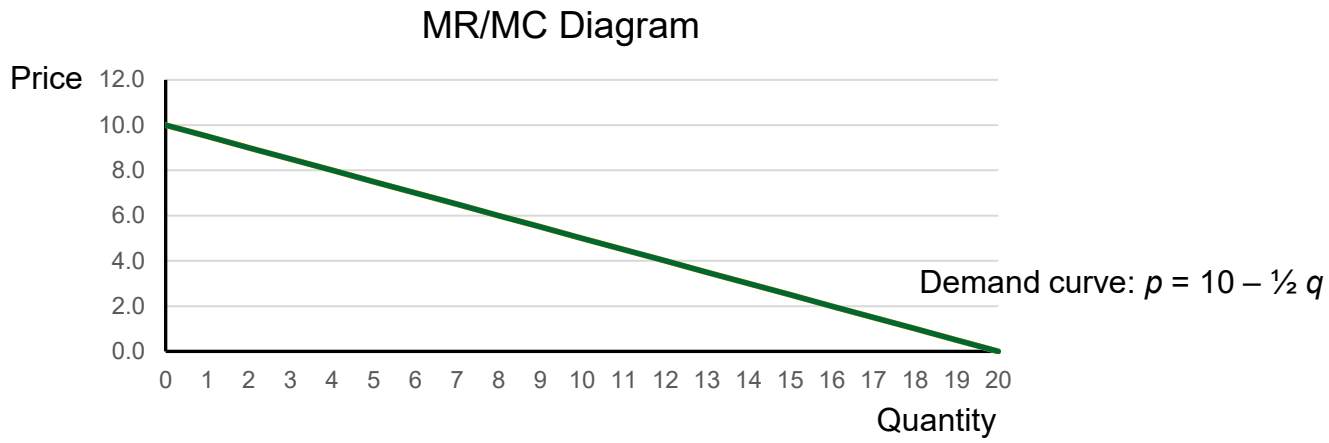


1. $r(q) = p(q)q = (10 - \frac{1}{2} q)q = 10q - \frac{1}{2} q^2$
2. $mr(q) = 10 - q$ (from the formula on Slide 14)
3. $mc(q) = 4$ (from the hypothetical)
4. FOC: $mr(q^*) = mc(q^*)$
   So $10 - q^* = 4$ or $q^* = 6$ (as shown in the diagram)
5. $p^* = p(q^*) = 10 - \frac{1}{2} q^*$
   $= 10 - (\frac{1}{2})(6) = 7$ (from the inverse demand curve)

Profit maximization

- Marginal revenue/marginal cost diagrams
  - Will build this step-by-step in five steps

a. Consider an (inverse) demand curve: $p = 10 - \frac{1}{2} q$



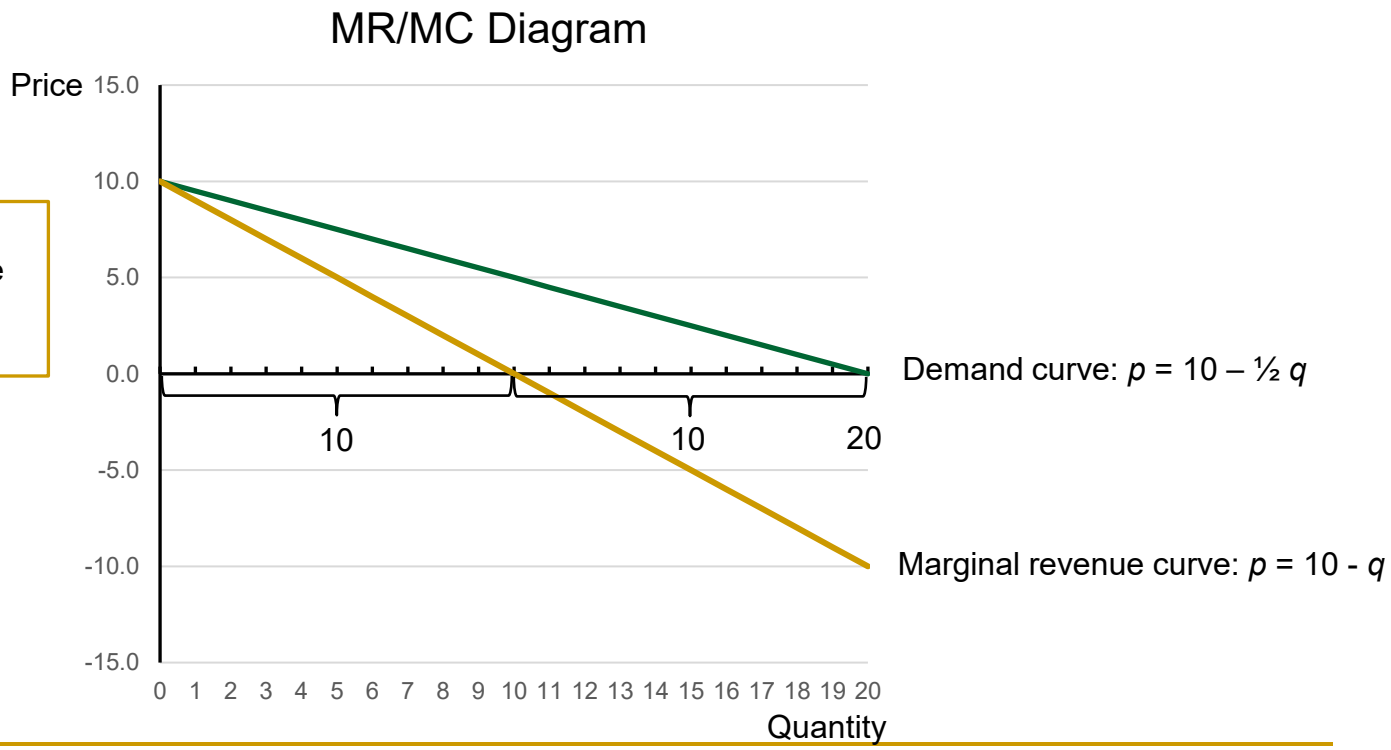
Profit maximization

- Marginal revenue/marginal cost diagrams
  - Will build this step-by-step

a. Consider an (inverse) demand curve: $p = 10 - \frac{1}{2} q$

→ b. Add the marginal revenue curve: $p = 10 - q$

Note: With linear demand, the marginal revenue curve falls twice as fast as the inverse demand curve



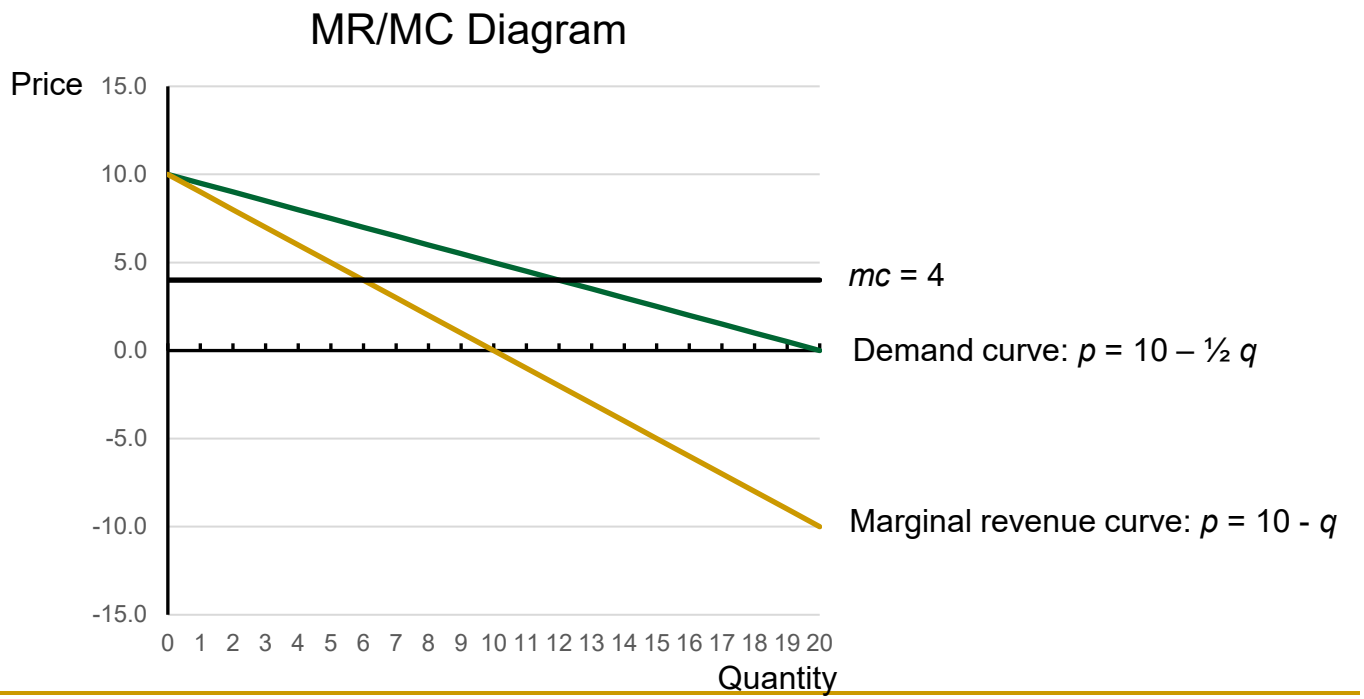
Profit maximization

- Marginal revenue/marginal cost diagrams
  - Will build this step-by-step

a. Consider an (inverse) demand curve: $p = 10 - \frac{1}{2} q$

b. Add the marginal revenue curve: $p = 10 - q$

→ c. Add the marginal cost curve: $c = 4$ (constant marginal cost)



Profit maximization

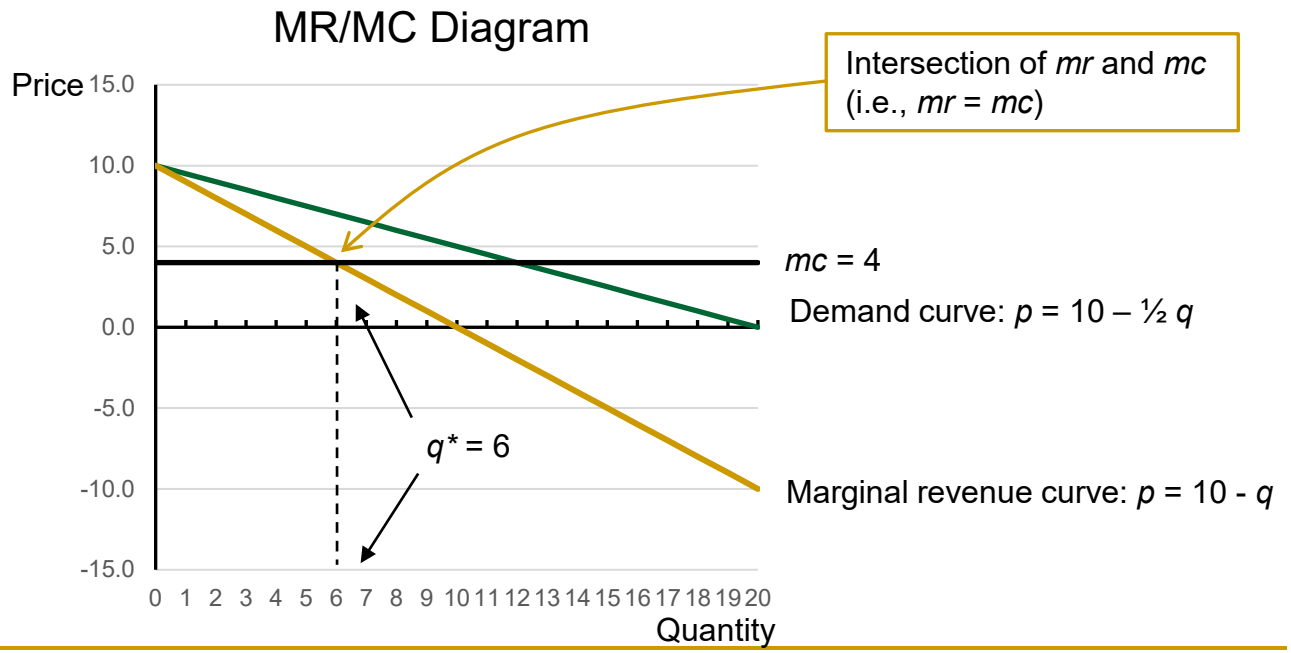
- Marginal revenue/marginal cost diagrams
  - Will build this step-by-step

a. Consider an (inverse) demand curve: $p = 10 - \frac{1}{2} q$

b. Add the marginal revenue curve: $p = 10 - q$

c. Add the marginal cost curve: $c = 4$ (constant marginal cost)

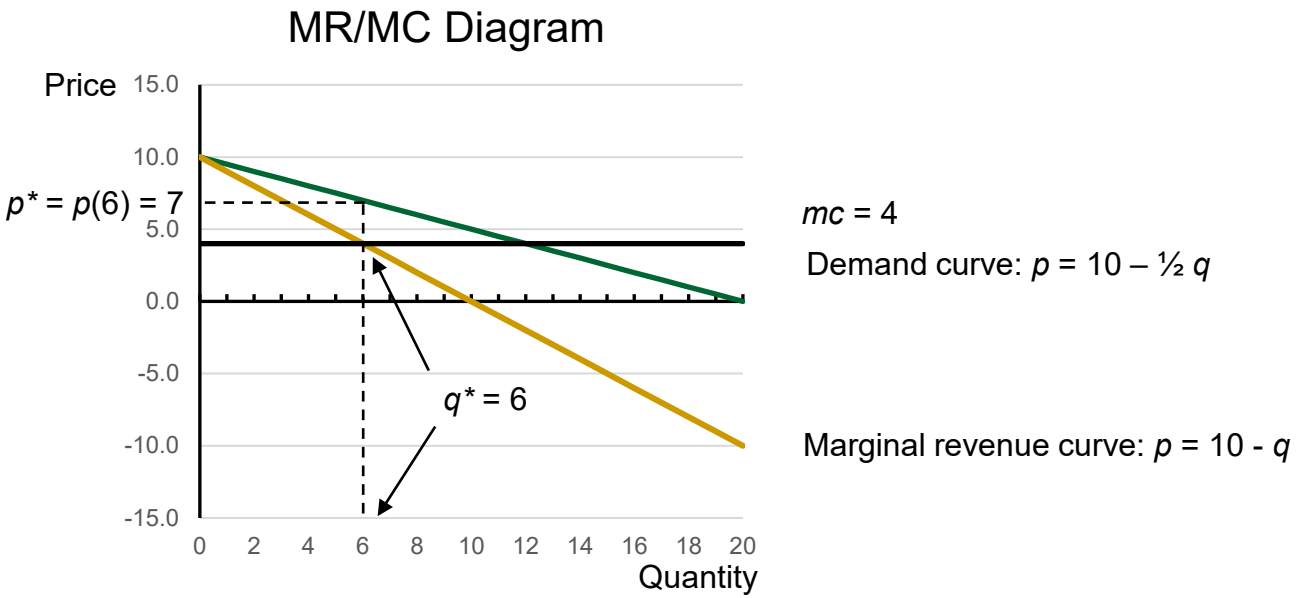
→ d. Find intersection of *mr* and *mc* curves to determine profit-maximizing q^* (= 6)



Profit maximization

- Marginal revenue/marginal cost diagrams
  - Will build this step-by-step

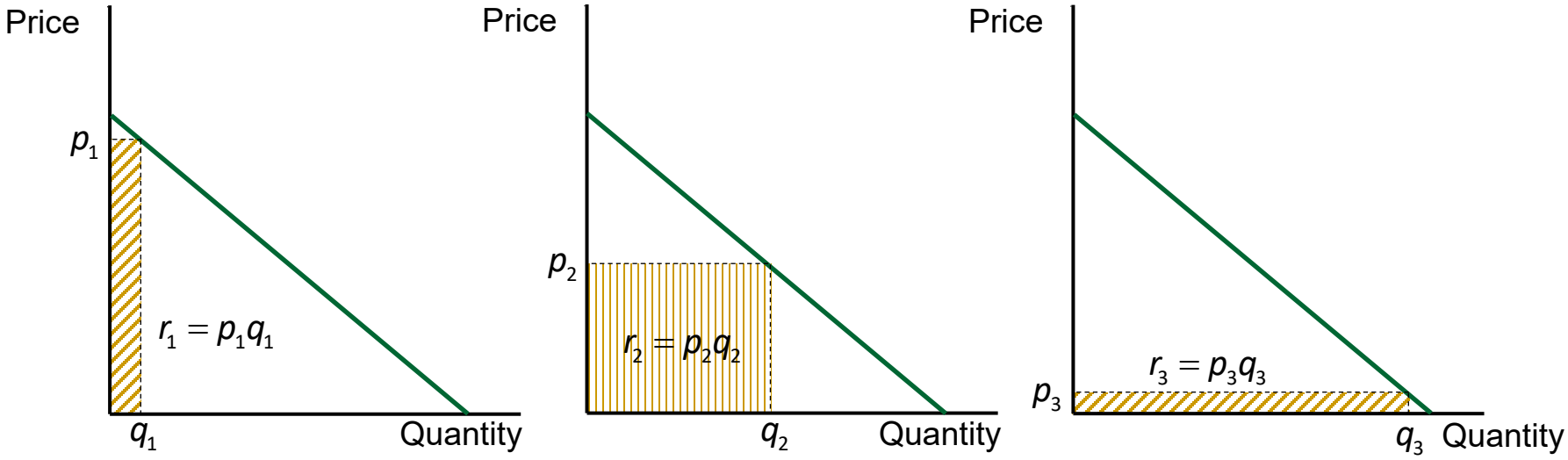
a. Consider an (inverse) demand curve: $p = 10 - \frac{1}{2} q$
b. Add the marginal revenue curve: $p = 10 - q$
c. Add the marginal cost curve: $c = 4$ (constant marginal cost)
d. Find intersection of *mr* and *mc* curves to determine profit-maximizing q^* (= 6)
→ e. Find $p^* = p(q^*)$ from the inverse demand curve ($p^* = 7$)



2. Incremental Revenue and Profits

Incremental revenue

- Introduction
  - *Incremental revenue* is the net gain in revenue that a firm could earn if it were to increase its product by some discrete amount Δq
  - Incremental revenue is important when determining whether a firm should change its output level to increase its profits
  - Incremental revenue can be positive or negative
    - Moving from q_1 to q_2 increases revenue (incremental revenue is positive)
    - Moving from q_2 to q_3 decreases revenue (incremental revenue is negative)



Incremental revenue

- Think about incremental revenue (*IR*) in two parts:
  1. The *gain* in revenue due to the sale of the additional (marginal) units at the lower market-clearing price
  2. Minus the revenue loss on the inframarginal units due to the lower price
- We can express this mathematically:
  - Let p and q be the starting price and quantity
  - Let Δq be the additional quantity to be sold (the marginal units)
  - Let Δp is the market price decrease necessary to clear the market with the sale of the additional units (let Δp be the absolute value of the price decrease, so that it is a positive number that we subtract from p to find the new price)

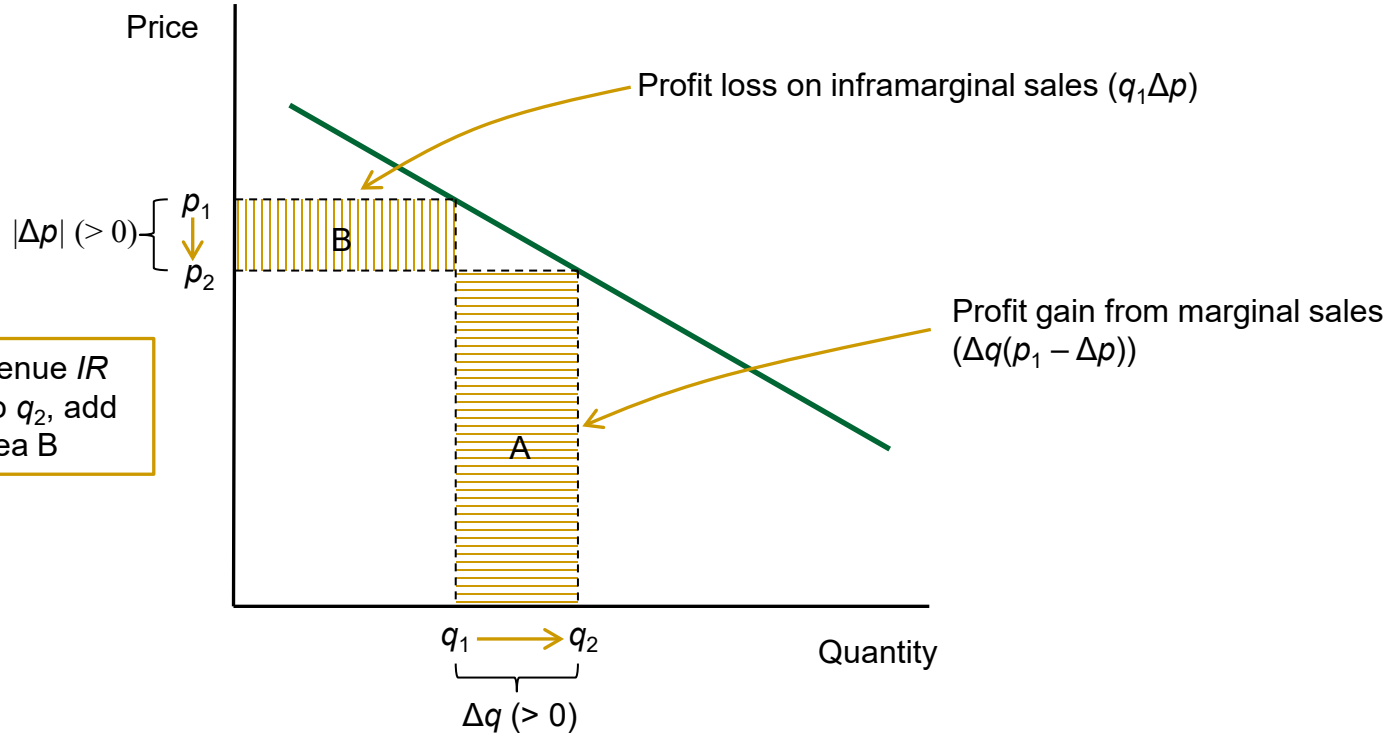
  Then:
  - $\Delta q(p - \Delta p)$ is the revenue gain on sale of the additional (marginal) units
    - = marginal units times the new price
  - $q\Delta p$ is the revenue loss on the sale of the inframarginal units
    - = original (inframarginal) units times the price decrease
- So:

$$IR = \underbrace{\Delta q\left(p - \Delta p\right)}_{\text{Profit gain on marginal sales}} - \underbrace{q\Delta p}_{\text{Profit loss on inframarginal sales}}$$

This is the formula for *marginal revenue* in the discrete case when $\Delta q = 1$

Incremental revenue

- We can see this graphically:



To find incremental revenue *IR* when moving from q_1 to q_2, add Area A and subtract Area B

Area A = $\Delta q(p_1 - \Delta p)$ is the *gain* in revenue from the additional sales Δq at the lower price $p_2 = p_1 - \Delta p$

Area B = $q_1\Delta p$ is the *loss* in revenue due to the sales of q_1 at the lower price p_2

So

$$IR = \overbrace{\Delta q\left(p_1 - \Delta p\right)}^{\text{Area A}} - \overbrace{q_1\Delta p}^{\text{Area B}}$$

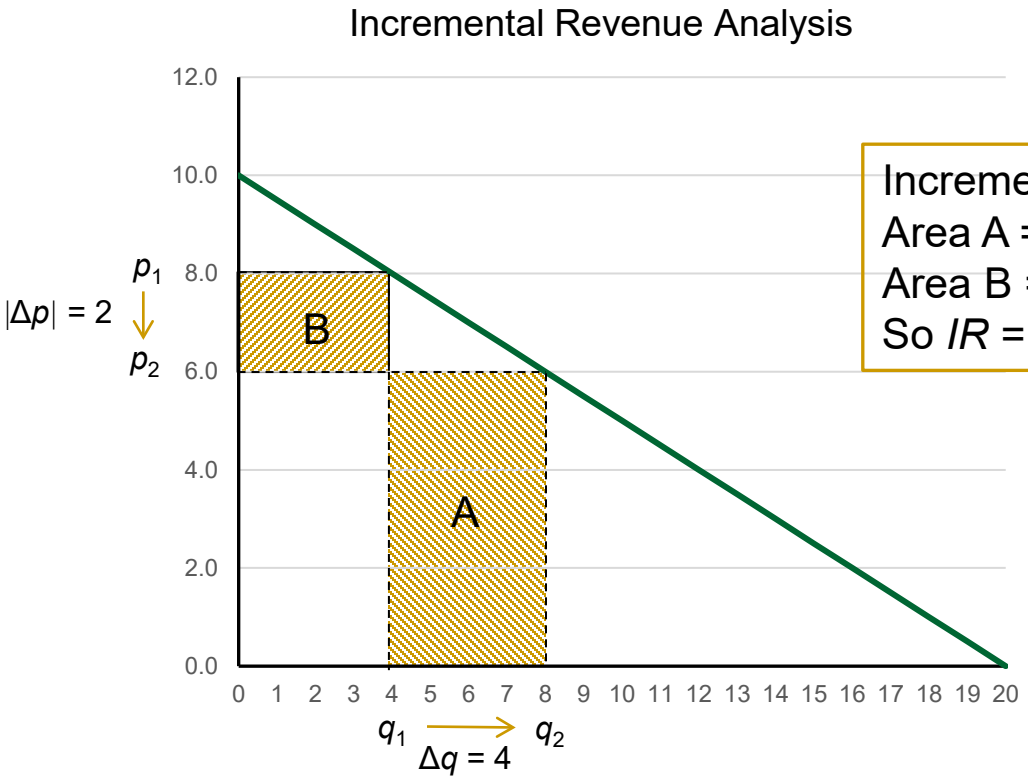
Incremental revenue

- Example
  - (Inverse) demand: $p = 10 - \frac{1}{2} q$
  - Starting point: $q_1 = 4$
  - End point: $q_2 = 8$

You need to calculate these variables:

So $p_1 = 8$ $\quad \Delta q = q_2 - q_1 = 8 - 4 = 4$

So $p_2 = 6$ $\quad |\Delta p| = |p_2 - p_1| = |6 - 8| = 2$



Incremental revenue = Area A – Area B

Area A = $p_2 \Delta q = (6)(4) = 24$

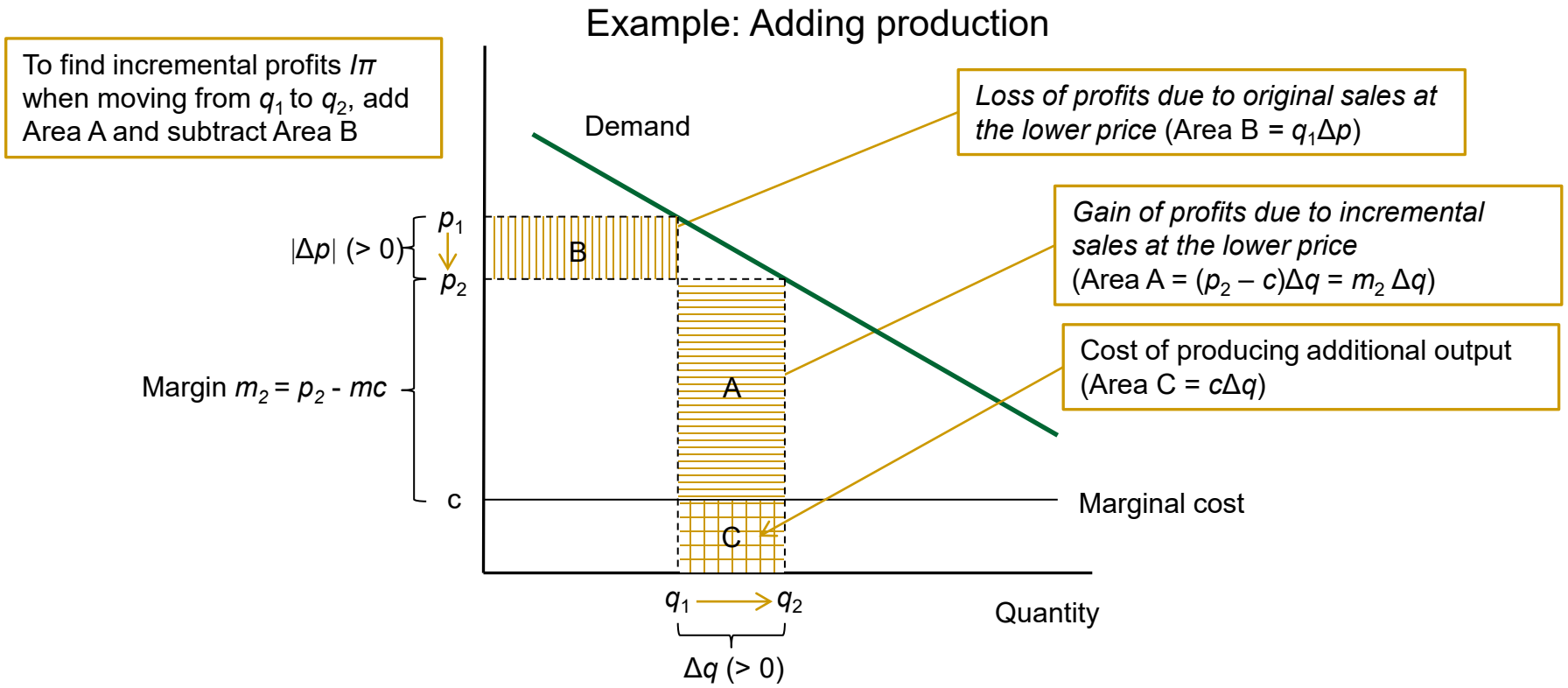
Area B = $q_1 \Delta p = (4)(2) = 8$

So $IR = 24 - 8 = 16$

That is, the firm makes $16 more in revenues by moving from q_1 to q_2

Incremental profit

- We can easily extend the analysis of incremental revenues to incremental profits—We just have to:
  - Add the costs of additional production if we are adding to output ($\Delta q > 0$), *or*
  - Subtract the costs if we are reducing output ($\Delta q < 0$)



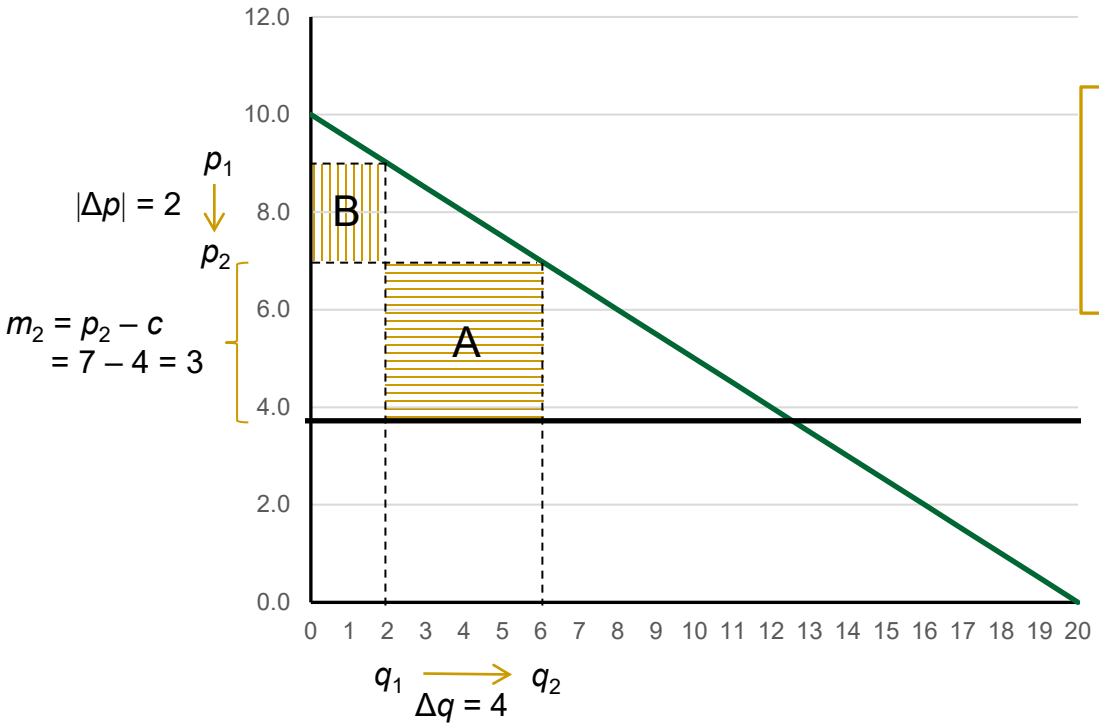
Incremental profit

- *Example*: Output increase
  - (Inverse) demand: p =10 – ½ q
  - Starting point: $q_1 = 2$
  - End point: $q_2 = 6$
  - Constant marginal cost $c = 4$

You need to calculate these variables:

So $p_1 = 9$
So $p_2 = 7$

$\Delta q = q_2 - q_1 = 6 - 2 = 4$
$|\Delta p| = |p_2 - p_1| = |7 - 9| = 2$
Margin $m_2 = p_2 - c$
$= 7 - 4 = 3$



Incremental profits = Area A – Area B
Area A = $m_2 \Delta q = (3)(4) = 12$
Area B = $q_1 \Delta p = (2)(2) = 4$
So $I\pi = 12 - 4 = 8$

That is, the firm makes $8 more in profits by moving from q_1 to q_2

Incremental profit

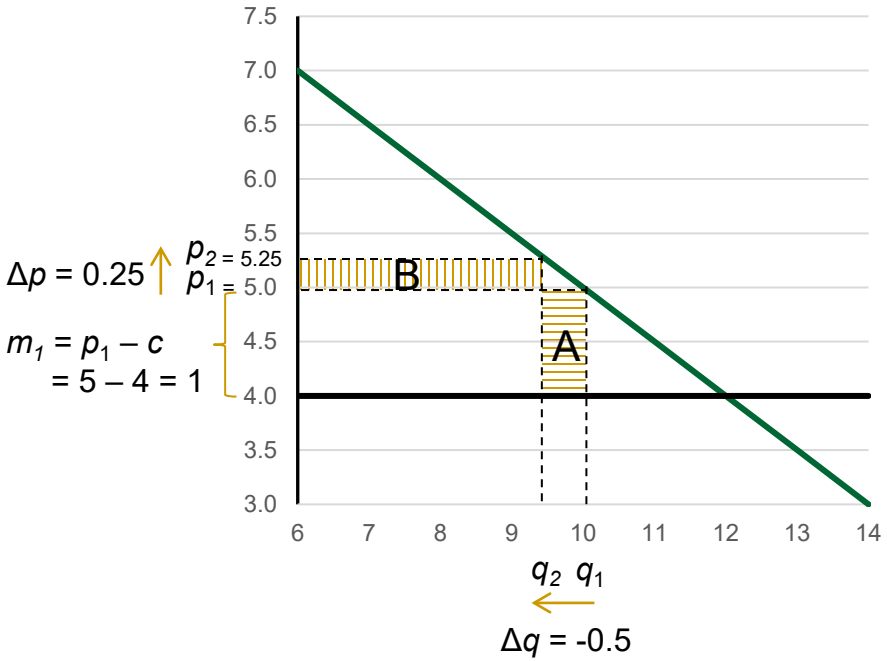
- *Example*: Price increase (decreasing production)
  - (Inverse) demand: $p = 10 - \frac{1}{2} q$
  - Starting point: $p_1 = 5$
  - End point: $p_2 = 5.25$
  - Constant marginal cost $c = 4$

You need to calculate these variables:

So $q = 20 - 2p$

So $q_1 = 10$ $\quad \Delta q = q_2 - q_1 = 9.5 - 10 = -0.5$

So $q_2 = 9.5$ $\quad \Delta p = p_2 - p_1 = 5.25 - 5 = 0.25$



With an increase price and a concomitant *reduction* in output, the roles of Areas A and B are *reversed*:

Area A now represents the *loss* of profits from lost sales that would have been made at original price p_1 (= $m_1 \Delta q$)

Area B represents the *gain* of profits from the increased price charged on the sales that continue to be made (= $q_2 \Delta p$)

Incremental profits = Area B – Area A

Area B = q2Δp = (9.5)(0.25) = 2.375

Area A = m1Δq = (1)(-0.5) = -0.5

So incremental profits = 2.375 – 0.5 = 1.875

Incremental profit

- Observations
  - The prior example shows that under the conditions of the hypothetical, a 5 percent price increase would be profitable to the firm

This is mathematically identical to the exercise required by the *hypothetical monopolist test*, which is the primary analytical tool used by the agencies and the courts to define relevant markets. The hypothetical monopolist test asks whether a hypothetical monopolist of the candidate market could profitably sustain a "small but significant and nontransitory increase in price" (SSNIP), usually taken to be 5 percent. If so, the candidate market is a relevant market. In the prior example, if we assume that the demand curve is for the candidate market as a whole, this will be the residual demand curve for the hypothetical monopolist. If the original market price was $5 (as in the hypothetical), the hypothetical monopolist would find it profitable to reduce output in order to raise price by a 5 percent SSNIP.

We will confront the hypothetical monopolist test in almost every case study going forward, starting with the H&R Block/TaxAct case study next week. You will have plenty of opportunities to become familiar with the mechanics of the hypothetical monopolist test.

Appendix 1: Inverting Demand and Inverse Demand Functions

Inverting demand and inverse demand functions

- Motivation
  - You will be given either the demand function or the inverse demand function in a problem. But you may need to derive the other function in order to solve the problem.
  - Example
    - In the price increase problem on Slide 41, you were given the inverse demand function:

$$p = 10 - \frac{1}{2}q$$

    - But the problem gave you p_1 and p_2 and required you to calculate q_1 and q_2. To do this, you need to convert the inverse demand function into the demand function, so that you could use the prices to calculate the associated quantities
    - To create the demand function, you need to algebraically manipulate the inverse demand equation to isolate q on the left-hand side, so that quantities (which you need) are expressed in terms of prices (which the problem gives you)

Inverting demand and inverse demand functions

- Mechanics
  - An equality is maintained if you perform the same operation to both sides of the equation
  - Here are the steps to convert the above inverse demand function to a demand function:

Add ½ q to both sides: $$p + \frac{1}{2}q = 10 - \frac{1}{2}q + \frac{1}{2}q$$
$$= 10$$

Subtract p from both sides: $$p + \frac{1}{2}q - p = 10 - p$$

Simply: $$\frac{1}{2}q = 10 - p$$

Multiply both sides by 2: $$(2)\left(\frac{1}{2}q\right) = (2)(10 - p)$$

Simply: $$q = 20 - 2p$$

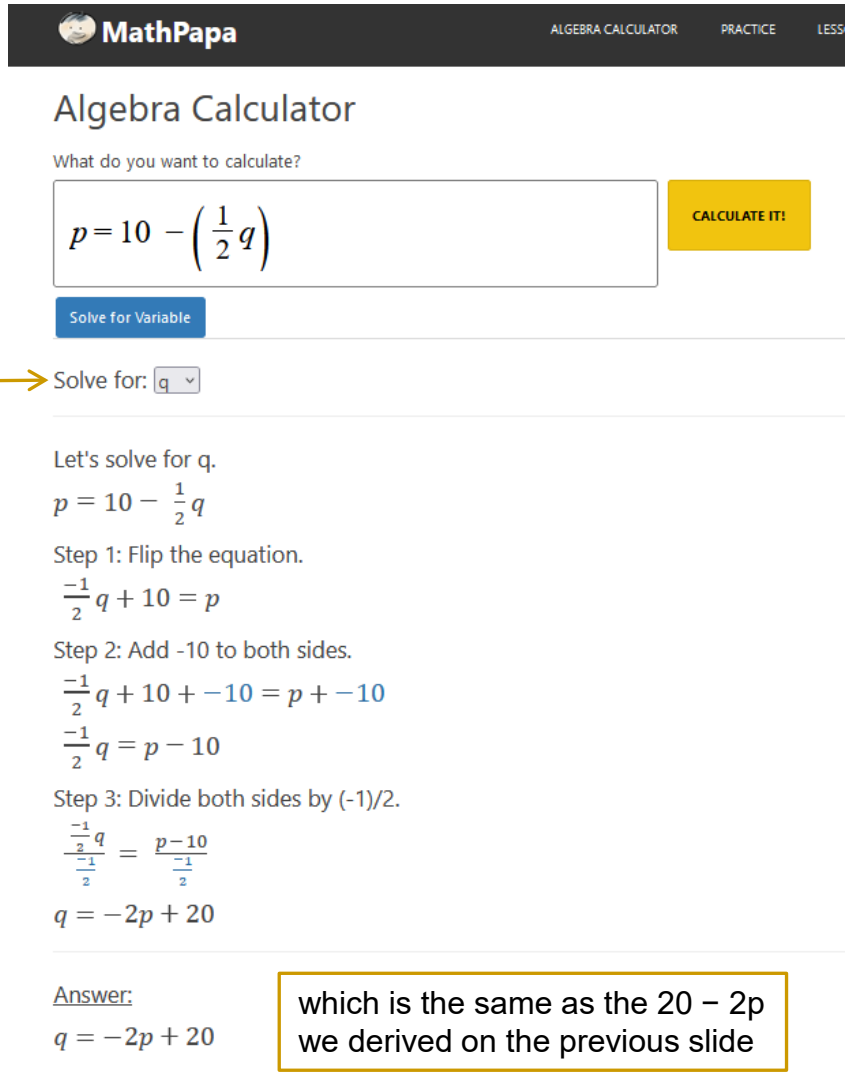
This is the demand curve that you would need for the price increase incremental revenue problem

  - The same technique can be used to convert a demand curve into an inverse demand curve

Inverting demand and inverse demand functions

- Or use an algebraic calculator:

We want *q* on the right-hand side, so solve for *q*



which is the same as the 20 − 2p we derived on the previous slide

Unit 8. Competition Economics

Part 2. Markets and Market Equilibria

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Merger Antitrust Law
Georgetown University Law Center

September 26, 2024

Topics

- Substitutes, complements, and elasticities
- Markets and market equilibria
  - Perfectly competitive markets
  - Perfectly monopolized markets
  - Imperfectly competitive markets
    - Cournot oligopoly models
    - Bertrand oligopoly models
    - Dominant firm with a competitive fringe

Substitutes, Complements, Elasticities, and Diversion Ratios

Substitutes/Complements

- Substitutes
  - *Definition*: Two products or services are *substitutes* if, when consumer demand increases for one product, it will decrease for the other product
    - Symbolically:

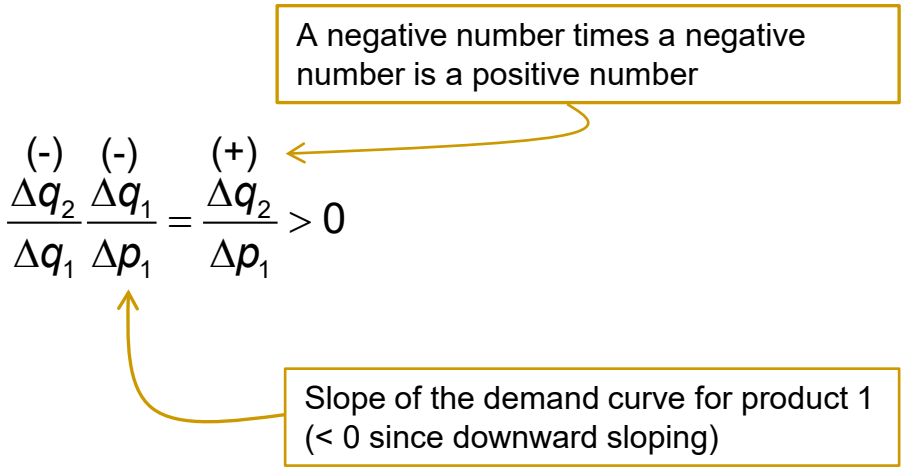
$$\frac{\Delta q_2}{\Delta q_1} < 0$$

Because Δq_1 and Δq_2 move in opposite directions, they will have different signs (i.e., one will be positive and the other will be negative) and the fraction will be negative

  - Examples
    - Coke and Pepsi
    - iPhone and Galaxy S series mobile phones
    - Nike and Adidas shoes
    - Hertz and Avis rental cars
  - *Horizontal mergers* involve combinations of firms that offer substitute products

Substitutes/Complements

- Substitutes
  - Substitutes and prices
    - If products 1 and 2 are substitutes, then as the price of product 1 increases, the demand for product 2 increases:



Substitutes/Complements

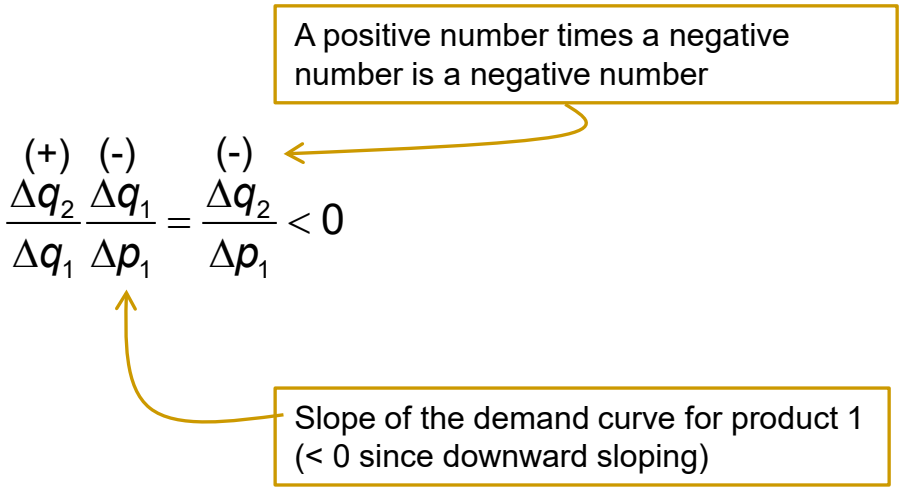
- Complements
  - *Definition*: Two products are *complements* if, when consumer demand increases for one product, consumer demand also will increase for the other product
  - Symbolically:

$$\frac{\Delta q_2}{\Delta q_1} > 0$$

  - Examples
    - *Vertical mergers* involve complements
      - Television LCD screens and TV sets
      - Car engines and cars
      - Cable TV programming and cable TV distribution (AT&T/Time Warner)
      - Drug manufacture and drug distribution
    - But some conglomerate mergers can also involve complements
      - Printers and ink cartridges
      - Razors and razor blades
      - Computers and computer software

Substitutes/Complements

- Complements
  - Complements and prices
    - If products 1 and 2 are complements, then as the price of product 1 increases, the demand for product 2 decreases



Elasticities

- Own-elasticity of demand
  - *Definition*: The percentage change in the quantity demanded divided by the percentage change in the price of that *same* product

The Greek letter epsilon (ε) is the usual symbol in economics for elasticity

$$\varepsilon \equiv \frac{\%\Delta q_i}{\%\Delta p_i}$$

Percentage change q_i in the quantity of product *i* demanded

Percentage change p_i in the price of product *i*

  - This is sometimes called *elasticity of demand* or *price elasticity of demand*
  - Own-elasticities are always *negative in sign* since changes in prices and quantities move in opposite directions along a downward-sloping demand curve
  - Examples:
    - If price increases by 5% and demand decreases by 10%, then the own-elasticity is -2 (= -10%/5%)
    - If price increases by 3% and demand deceases by 1%, then the own-elasticity is -1/3 (= -1%/3%)

Technically, these are *arc elasticities* because they give percentage changes for discrete changes in prices and quantities

Elasticities

- Own-elasticity of demand: Some numerical estimates

Product	ε	Product	ε
Salt	0.1	Movies	0.9
Matches	0.1	Shellfish, consumed at home	0.9
Toothpicks	0.1	Tires, short-run	0.9
Airline travel, short-run	0.1	Oysters, consumed at home	1.1
Residential natural gas, short-run	0.1	Private education	1.1
Gasoline, short-run	0.2	Housing, owner occupied, long-run	1.2
Automobiles, long-run	0.2	Tires, long-run	1.2
Coffee	0.25	Radio and television receivers	1.2
Legal services, short-run	0.4	Automobiles, short-run	1.2-1.5
Tobacco products, short-run	0.45	Restaurant meals	2.3
Residential natural gas, long-run	0.5	Airline travel, long-run	2.4
Fish (cod) consumed at home	0.5	Fresh green peas	2.8
Physician services	0.6	Foreign travel, long-run	4.0
Taxi, short-run	0.6	Chevrolet automobiles	4.0
Gasoline, long-run	0.7	Fresh tomatoes	4.6

Source: Preston McAfee & Tracy R. Lewis, Introduction to Economic Analysis ch. 3.1 (2009)

Elasticities

- Own-elasticity of demand
  - Relationship to the slope of the residual demand curve:

$$\varepsilon_i \equiv \frac{\%\Delta q_i}{\%\Delta p_i} \equiv \frac{\frac{\Delta q_i}{q_i}}{\frac{\Delta p_i}{p_i}} = \frac{\Delta q_i}{\Delta p_i}\frac{p_i}{q_i},$$

Slope of the demand curve

Rearranging terms

that is, the own-elasticity at a point on the firm's residual demand curve is equal to the slope of the residual demand curve at that point times the ratio of price to quantity at that point

---

  - *Mathematical note (optional)*
    - *In calculus terms:*

$$\varepsilon_i \equiv \frac{dq_i}{dp_i}\frac{p_i}{q_i}$$

This deals with the continuous case

Elasticities

For intuition only
(NOT technically correct, but it is usually the intuition that is important)

- Some important definitions
  - *Inelastic demand*: Not very price sensitive

$$|\varepsilon| = \left|\frac{\%\text{change in quantity}}{\%\text{change in price}}\right| < 1$$

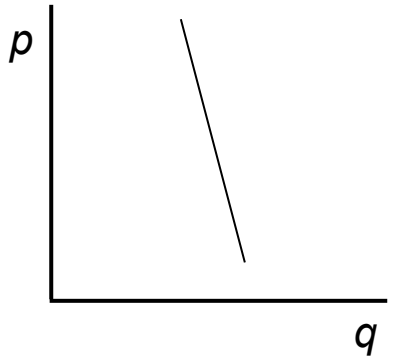
  - *Unit elasticity*:

$$|\varepsilon| = \left|\frac{\%\text{change in quantity}}{\%\text{change in price}}\right| = 1$$

  - *Elastic demand*: Price sensitive

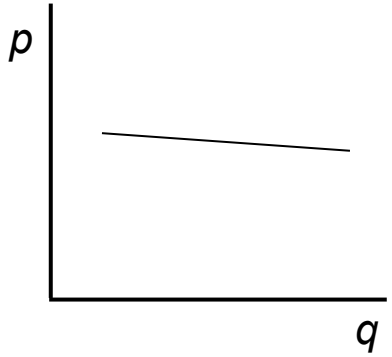
$$|\varepsilon| = \left|\frac{\%\text{change in quantity}}{\%\text{change in price}}\right| > 1$$

Inelastic demand



Little sensitivity to changes in price

Elastic demand



More sensitivity to changes in price

Note: $|x|$ is the *absolute value* of x, which is the magnitude of x without the sign. So $|3| = |-3| = 3$.

Elasticities

Remember $\varepsilon = \frac{\Delta q_i}{\Delta p_i}\frac{p_i}{q_i}$

- Elasticity of demand and the slope of the demand curve
  - Even when the demand curve is linear (so that the slope is constant), elasticity varies along the demand curve because the ratio of p_i to q_i changes along the curve

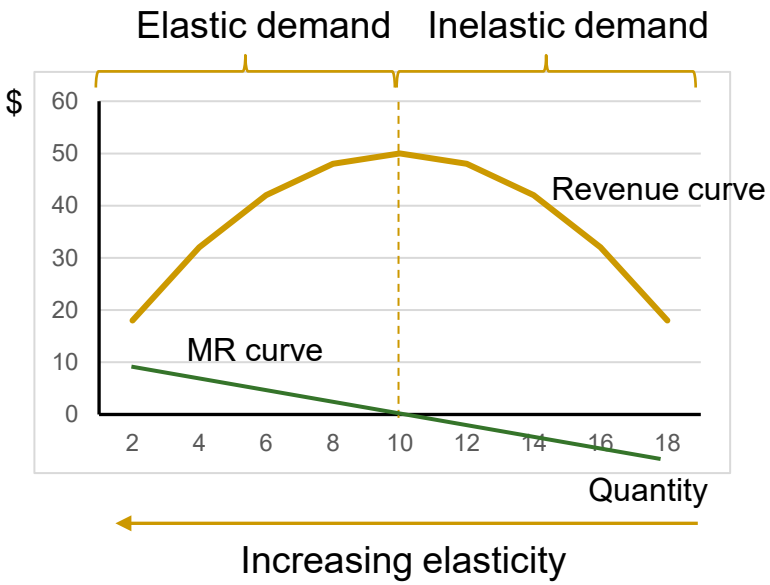
Inverse demand curve:
$p = 20 - 2q$

p	q	Slope	p/q	ε	Total revenue
1	18	-2	0.0556	-0.1111	18
2	16	-2	0.1250	-0.2500	32
3	14	-2	0.2143	-0.4286	42
4	12	-2	0.3333	-0.6667	48
5	10	-2	0.5000	-1.0000	50
6	8	-2	0.7500	-1.5000	48
7	6	-2	1.1667	-2.3333	42
8	4	-2	2.0000	-4.0000	32
9	2	-2	4.5000	-9.0000	18

Inelastic demand $|\varepsilon| < 1$

Unit elasticity $|\varepsilon| = 1$

Elastic demand $|\varepsilon| > 1$



General rules:
Elasticity decreases as quantity increases and prices decreases → lower p/q ratios
Elasticity increases as quantity decrease and prices increase → higher p/q ratios

Elasticities

- Predicting quantity changes for a given price increase
  - An approximation
    - We can approximate a percentage quantity change $\%\Delta q$ for a given percentage price change $\%\Delta p$ by multiplying the own-elasticity ε by the percentage price change:

$$\varepsilon = \frac{\%\Delta q}{\%\Delta p} \Rightarrow \%\Delta q \approx \varepsilon \%\Delta p$$

      - The relationship is not exact since the elasticity can change over the discrete range of the price change (as it does on a linear demand function)
  - For linear demand curves, an exact relationship exists for a price change Δp :

$$\varepsilon = \frac{\frac{\Delta q}{q}}{\frac{\Delta p}{p}} = \frac{\Delta q}{\Delta p}\frac{p}{q} \Rightarrow \underbrace{\Delta q = \varepsilon \frac{q}{p}\Delta p}_{\text{For predicting unit quantity changes}} \text{ and } \underbrace{\frac{\Delta q}{q} = \varepsilon \frac{\Delta p}{p}}_{\text{For predicting percentage quantity changes}}$$

These relationships can be important when determining a quantity change associated with a price increase in the hypothetical monopolist test for market definition

Elasticities

- The *Lerner condition* for profit-maximizing firms
  - *Proposition*: When a firm *i* maximizes its profits, at the profit-maximum levels of price and output the firm's own elasticity ε_i is equal to $1/m_i$:

where *m* is the *gross margin*:

$$|\varepsilon_i| = \frac{1}{m_i},$$

$$m_i \equiv \frac{p_i - c}{p_i}$$

Proof (optional): The firm's first order condition for a profit-maximum:

Marginal revenue = Marginal cost

Mathematically $$p_i + \frac{dp}{dq} q_i = c_i$$

Rearranging and dividing by *p*: $$\frac{p_i - c_i}{p} = -\frac{dp}{dq}\frac{q_i}{p_i}$$

$$m_i = \frac{1}{|\varepsilon_i|}, \text{ so } |\varepsilon_i| = \frac{1}{m_i} \qquad \textit{Q.E.D.}$$

Cross-elasticities

- Cross-elasticity of demand
  - *Definition*: The percentage change in the quantity demanded for product *j* divided by the percentage change in the price of product *i*.

$$\varepsilon_{ij} \equiv \frac{\%\Delta q_i}{\%\Delta p_j}$$

Percentage change q_i in the quantity of product *i* demanded

Percentage change p_j in the price of product *j*

  - With a little algebra (as before):

$$\varepsilon_{ij} = \frac{\Delta q_i}{\Delta p_j}\frac{p_j}{q_i}$$

Positive for substitutes
Negative for complements

  - Mathematical note (optional)
    - In calculus terms:

$$\varepsilon_{ij} \equiv \frac{dq_i}{dp_j}\frac{p_j}{q_i}$$

Cross-elasticities

- Cross-elasticities—More definitions
  - *High cross-elasticity of demand*:
    - A small change in the price of product *i* will cause a large change of demand to product *j*
    - As a result, product *j* brings a lot of competitive pressure on product *i*

This is why antitrust lawyers talk so much about cross-elasticities!

Make sure you understand why!

    - *Think of it this way:*
      - In a two-firm market, a high cross-elasticity implies a large number of *marginal customers* who will abandon product *i* when its price increases and will divert to product *j*
      - It also means a correspondingly smaller number of *inframarginal customers* who will stay with product *i* in the wake of a price increase
  - *Low cross-elasticity of demand*:
    - A large change in the price of product *i* will cause only a small change of demand to product *j*
    - As a result, product *j* brings little competitive pressure on product *i*

Make sure you understand why!

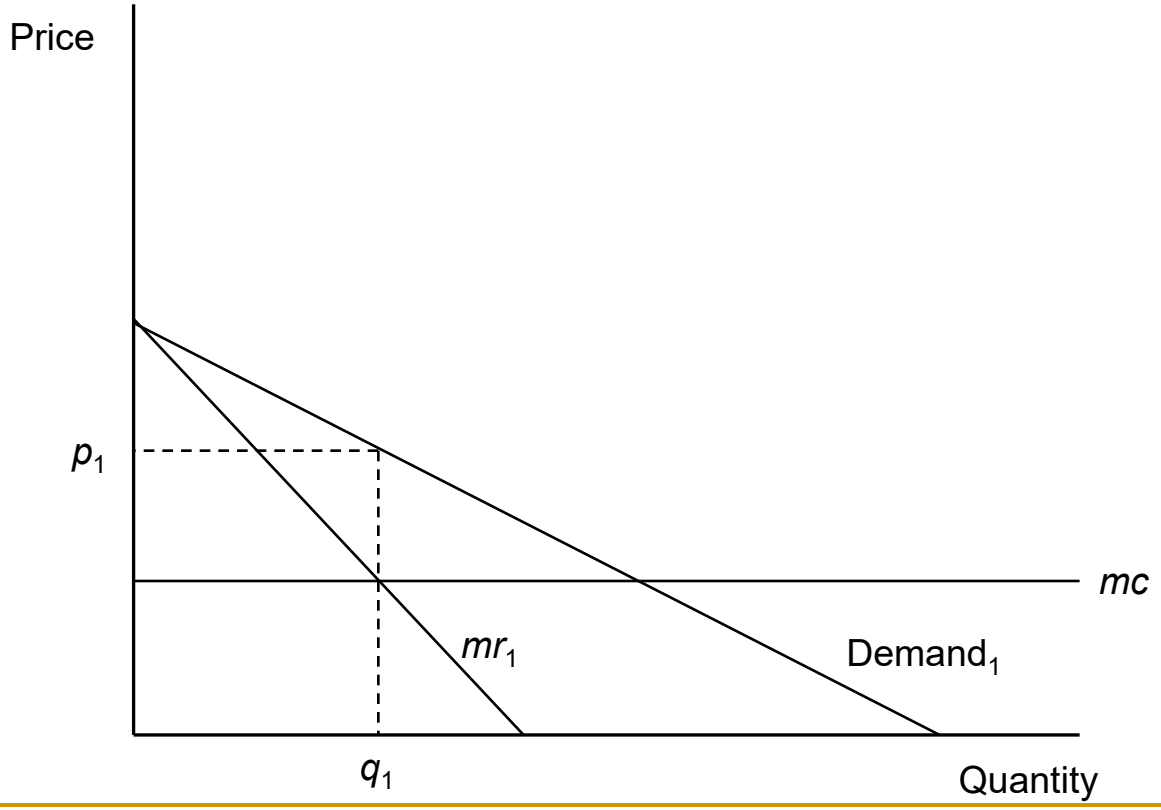
An important relationship

- Relationship of own-elasticities to cross-elasticities
  - Intuitively, the higher the cross-elasticities of product A with the other products, the more elastic is product A's own-elasticity
  - Consequently, if a merger has the effect of decreasing the cross-elasticities of product A (say an overlap product of one of the merging firms) with one or more substitute products, then product A's own-elasticity also decreases
  - *Key result*: All other things being equal, decreasing the cross-elasticity of demand of substitute products shifts the intersection of the marginal revenue curve and the marginal cost curve to the left, leading the firm to decrease output and increase prices

Let's look at the next three graphs to see why

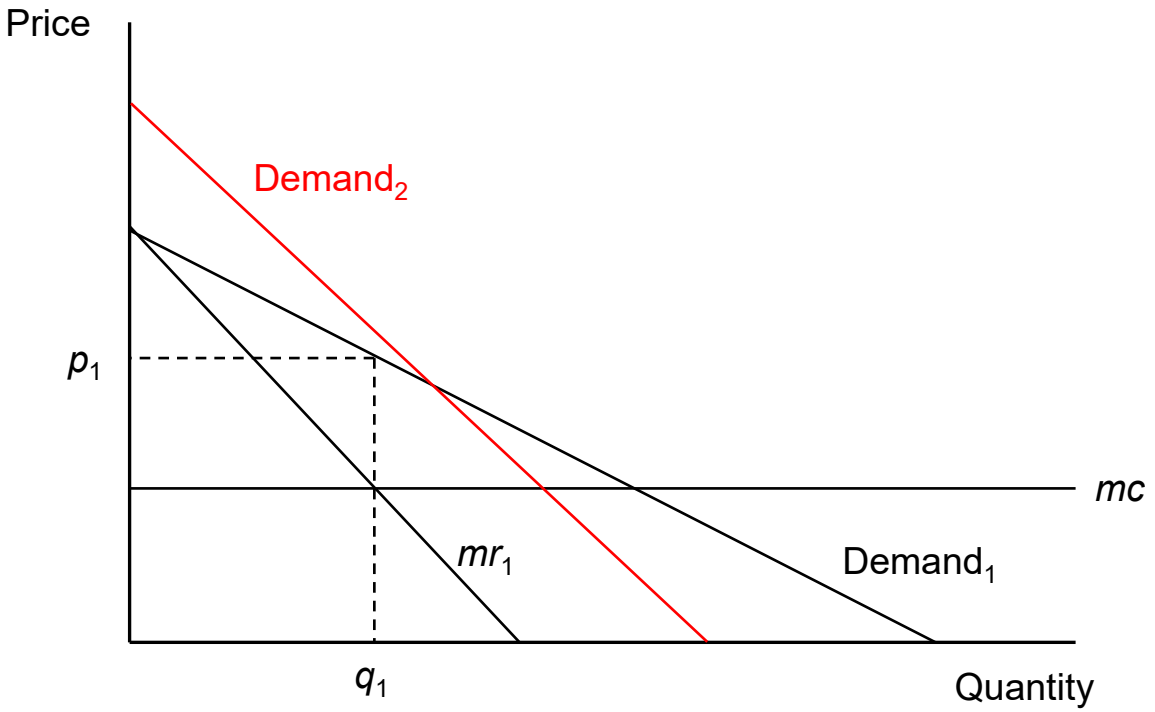
An important relationship

- Relationship of own-elasticities to cross-elasticities
  - Premerger profit-maximizing price-quantity equilibrium for the acquiring firm



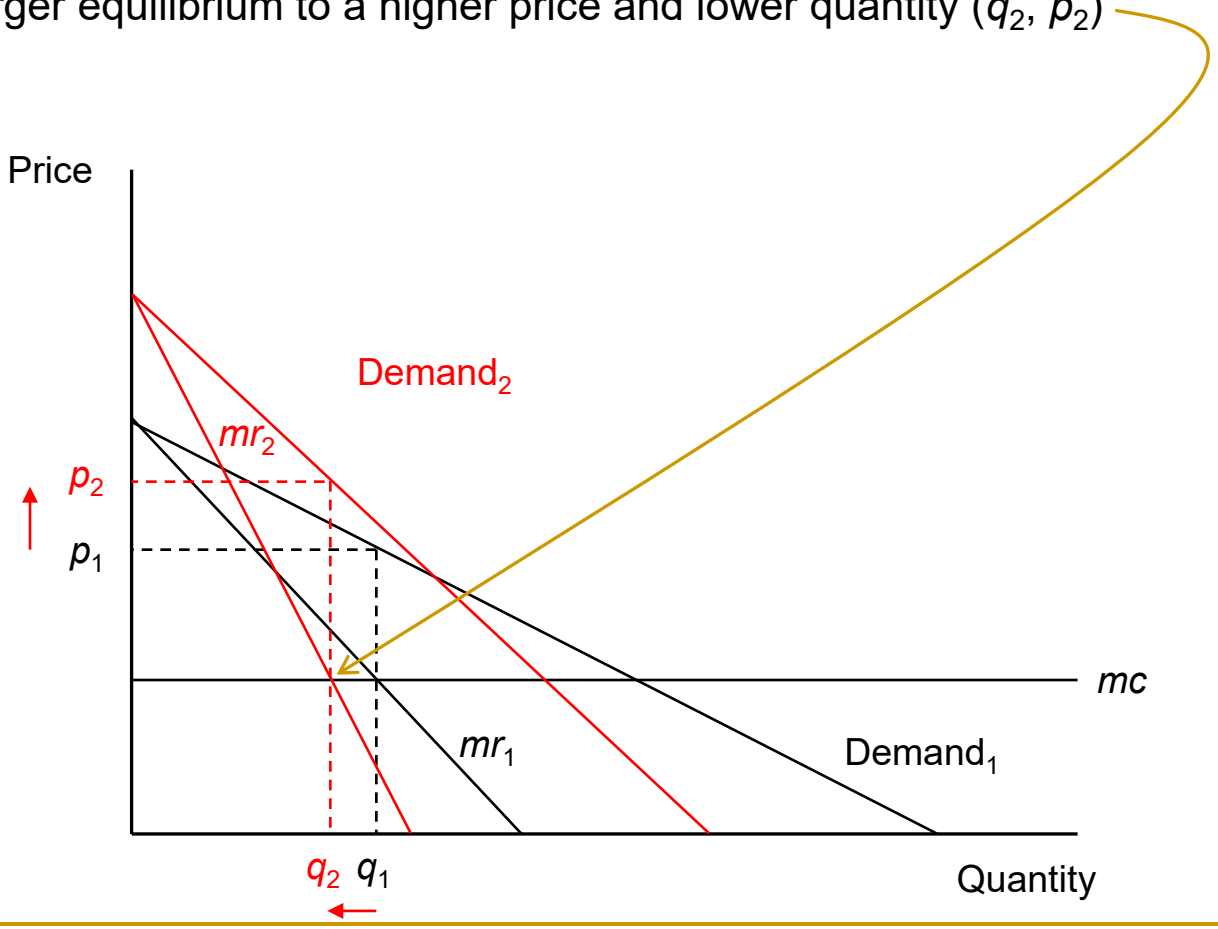
An important relationship

- Relationship of own-elasticities to cross-elasticities
  - Postmerger, the acquiring firm increases the acquired firm's price, making the acquired firm's substitute product less attractive and so decreasing the cross-elasticity of demand with the acquiring firm's product
    - The acquiring firm's residual demand curve then becomes more inelastic (steeper) around the premerger equilibrium point (q_1, p_1)



An important relationship

- Relationship of own-elasticities to cross-elasticities
  - Postmerger, the marginal revenue curve also becomes steeper, moving the postmerger equilibrium to a higher price and lower quantity (q_2, p_2)



An important relationship

- Relationship of own-elasticities to cross-elasticities—Equivalent statements:
  - Reducing the attractiveness of substitutes
  - Reducing the cross-elasticities of residual demand of substitute products
  - Making the residual demand curve more inelastic
  - Making the residual demand curve steeper
  - Reducing the residual own-elasticity of demand

Around the premerger price-quantity equilibrium

All result in higher prices and lower quantities

- NB: At this point in the analysis, these relationships are only directional
  - They tell us the *direction* equilibrium price and quantity move
  - But so far, they do not tell us the *magnitude* of the changes
  - So we cannot yet determine whether the change in the cross-elasticities yields a substantial lessening of competition

An important relationship

- Relationship of own-elasticities to cross-elasticities
  - Technically:

$$\left|\varepsilon_{11}\right| = 1 + \frac{1}{s_1}\sum_{i=2}^{n}\varepsilon_{i1}s_i$$

$\varepsilon_{i1} > 0$ if the other products are substitutes for product 1

where ε_{11} is the own-elasticity of product 1 and ε_{i1} is the cross-elasticity of substitute product *i* with respect to the price of product 1 (evaluated at current prices and quantities)

  - Two important takeaways
    1. As the cross-elasticities on the right-hand side decrease, the demand for product 1 becomes more inelastic ($|\varepsilon|$ becomes smaller)
       - This allows Firm 1 to exercise market power and charge higher prices
    2. Competitors with larger market shares have more influence in constraining the price of Firm 1 for any given cross-elasticity (i.e., the cross-elasticities in the formula are weighted by market share)

You do not have to know the formula, but you should know the takeaways

Diversion ratios

- *Definition*: Diversion ratio (D)

$$D_{12} \equiv \frac{\text{Units captured by Firm 2 as a result of Firm 1's price increase}}{\text{Total units lost by Firm 1 as a result of Firm 1's price increase}} \equiv \left|\frac{\Delta q_2}{\Delta q_1}\right|$$

  - NB: By convention, diversion ratios are *positive*. Since $\Delta q_1/\Delta p_1$ is negative (the demand curve is downward sloping), we need to look at the absolute value of the fraction

- Example
  - Firm 1 increases its price by 5% and loses a total of 20 units to substitute products
  - When Firm 1 increases its price, Firm 2—which maintains its original price—gains 5 units of additional sales
  - So:

$$D_{12} = \left|\frac{\Delta q_2}{\Delta q_1}\right| = \left|\frac{5}{-20}\right| = \frac{5}{20} = 0.25 = 25\%$$

Diversion ratios

- Thinking about diversion ratios
  - Think of D_{12} as $D_{1\rightarrow 2}$, that is—
    1. the number of units lost by Firm 1 that are “diverted” to Firm 2 (which produces a substitute product)
    2. as a result of Firm 1’s price increase
    3. when Firm 2’s price stays constant

    NB: This heuristic assumes that there is a one-to-one substitution between Firm 1’s and Firm 2’s products

Diversion ratios

- Relation to cross-elasticities
  - Diversion ratios are closely related to cross-elasticities: both measure the degree of substitutability between two products when the relative prices change
    - Elasticities measure substitutability in terms of the *percentage* increase in Firm 2's unit sales for a *percentage* increase in Firm 1's price
    - Diversion ratios measure substitutability in terms the increase in Firm 2's unit sales as a percentage of all units lost by Firm 1 as a result of a given increase in Firm 1's price
  - Modern antitrust economics still speaks in terms of cross-elasticities when it often means diversion ratios
    - For example, products with high diversion ratios are said to have high cross-elasticities

We will see diversion ratios again in implementations of the hypothetical monopolist test and in the unilateral effects theory of anticompetitive harm

Perfectly Competitive Markets

Perfectly competitive markets

- *Definition*: A market in which no single firm can affect price, meaning—
  1. The firm perceives its residual demand curve as horizontal
  2. The firm perceives that it can sell any amount of product without affecting the market price
  3. $\frac{dp}{dq_i} = 0$ (as perceived by the firm)
  4. $p = \frac{dc}{dq_i}$ (i.e., price = marginal cost)

These four bullets are just different ways of saying the same thing

- Some more definitions
  - *"Price taking"*: Competitive firms are called *price-takers*, that is, they take market price as given and not something that they can affect
  - *Perfectly competitive equilibrium*: A market equilibrium exists when—
    1. Aggregate supply equals aggregate demand, *and*
    2. Each firm chooses its level of production so that the market-clearing price is equal to the firm's marginal cost of production

Perfectly competitive markets

- What could cause a market to be perfectly competitive?
  - *Traditional theory*: Each individual firm's production is very small compared to aggregate demand at any price, so that individual production changes cannot move materially along the aggregate demand curve
    - This implies that there are a very large number of firms in the market
  - *Modern theory*: Competitors in the marketplace react strategically but non-collusively to price or quantity changes by a firm in ways that maintain the perfectly competitive equilibrium

Competitive firms

- Three take-aways
  1. Competitive firms do not perceive that their output decisions affect the market-clearing price
     - That is, each firm perceives that it faces a horizontal residual demand curve
     - In fact, their individual output decisions do affect the market-clearing price but because the effect is so small no individual firm perceives this
       - In the aggregate, the sum of the output of all competitive firms determines the market-clearing price
  2. Competitive firms chose their output so that $p = mc$
     - Competitive firms, like all other firms, choose output so that marginal revenue is equal to marginal cost ($mr = mc$)
     - Since a competitive firm does not perceive that its output decisions affect the market-clearing price, the firm does not perceive that there is any downward adjustment in market price when it expands its output
     - Therefore, the firm perceives—and makes its output decision—on the premise that its marginal revenue is equal to the market price
     - Hence, the firm selects an output level so that $p = mc$
     - Mathematically:

$$mr(q_i) = p + q_i \frac{\Delta p}{\Delta q_i} = mc(q_i)$$

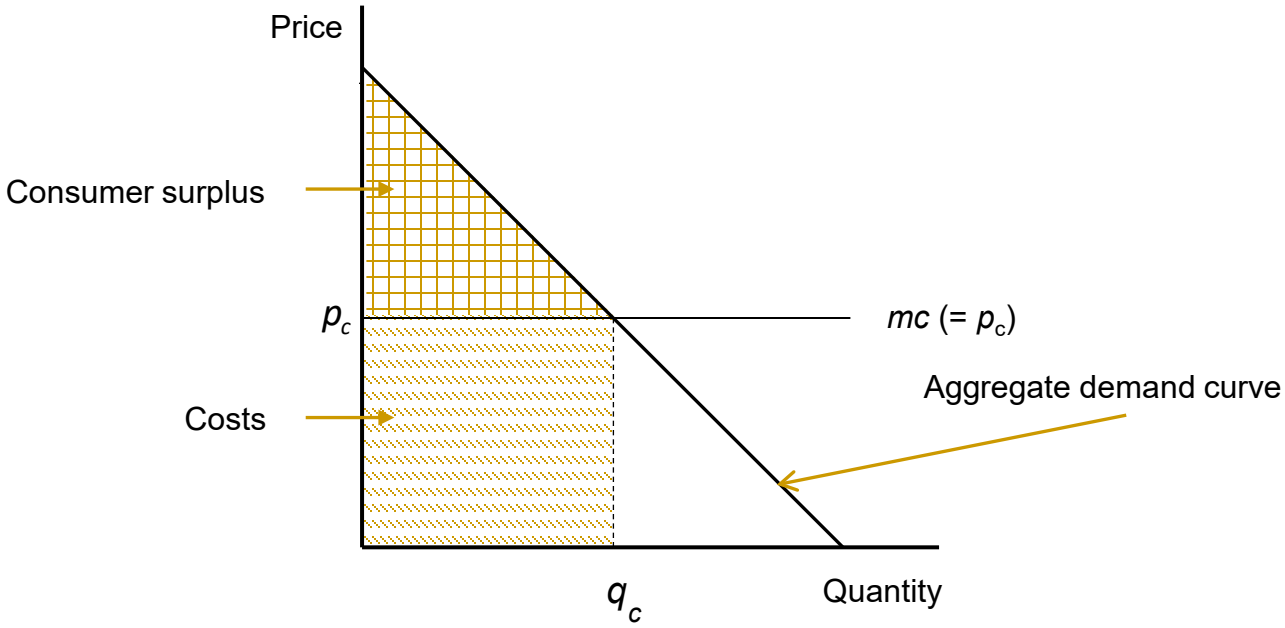
Perceived to be zero since the firm is a price-taker and does not believe that its choice of output affects market price

So:

$$p = mc$$

Competitive firms

- Three take-aways
  3. A competitive market maximizes consumer surplus[1]
     - A competitive market exhausts all gains from trade



[1] We are assuming a simple market where there is only one product that sells at a single uniform price (i.e., there is no price discrimination).

Perfectly Monopolized Markets

Perfect monopoly

- Basic concepts
  - In a perfect monopoly market, there is only one firm that supplies the product
    - This is an economic concept
    - In law, a monopolist need not control 100% of the market
  - Although there is only one firm in the market, it still faces a downward-sloping demand curve
    - There can be some substitutes for the monopolist's product—just not very good ones
  - The aggregate demand curve defines the residual demand curve facing an (economic) monopolist

In economics and in law, a firm that faces a downward-sloping residual demand curve and therefore has some power to influence the market-clearing price for its product is said to have *market power*. In antitrust law, a firm that has very significant power over the market-clearing price is said to have *monopoly power*. In economics, a monopolist is the only firm in the market.

Perfect monopoly

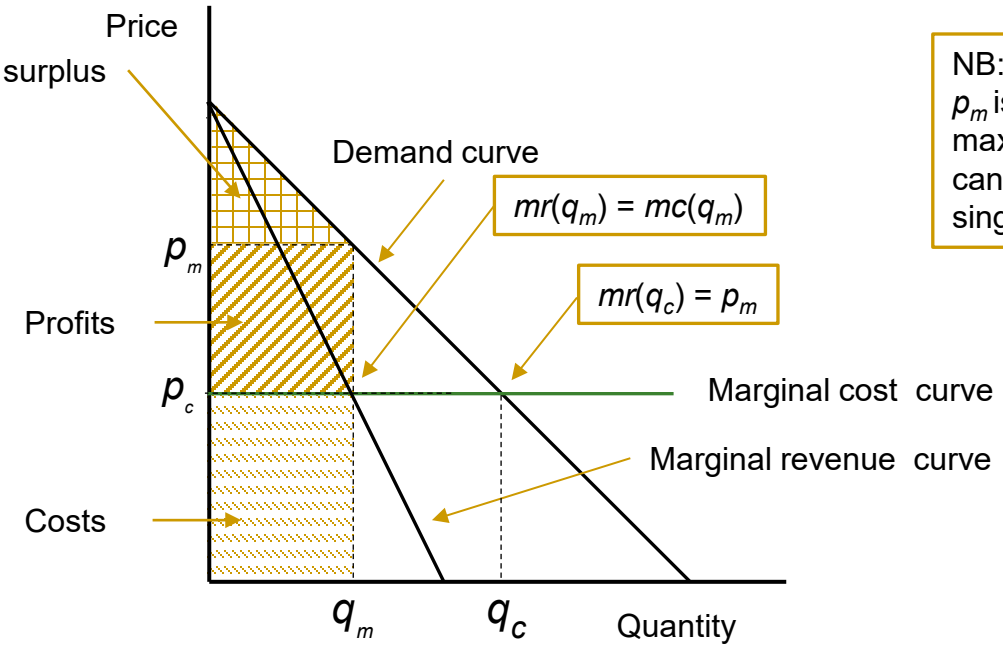
A consequence of the monopolist's downward-sloping demand curve

- A monopolist chooses output q_m so that $mr(q_m) = mc(q_m)$
  1. A monopolist charges a higher price than a competitive firm

$$p_m > mr(q_m) = mc(q_m) = mc(q_c) = p_c$$

where marginal costs are constant[1]

  2. A monopolist produces a lower output than would a competitive firm facing the same residual demand curve ($q_m < q_c$)



NB: $q_m = ½\ q_c$, where the monopolist and the firms in the competitive market face the same aggregate demand curve and have the same constant marginal costs

NB: The monopolist price p_m is the price at which the maximum available profits can be drawn from a single price market

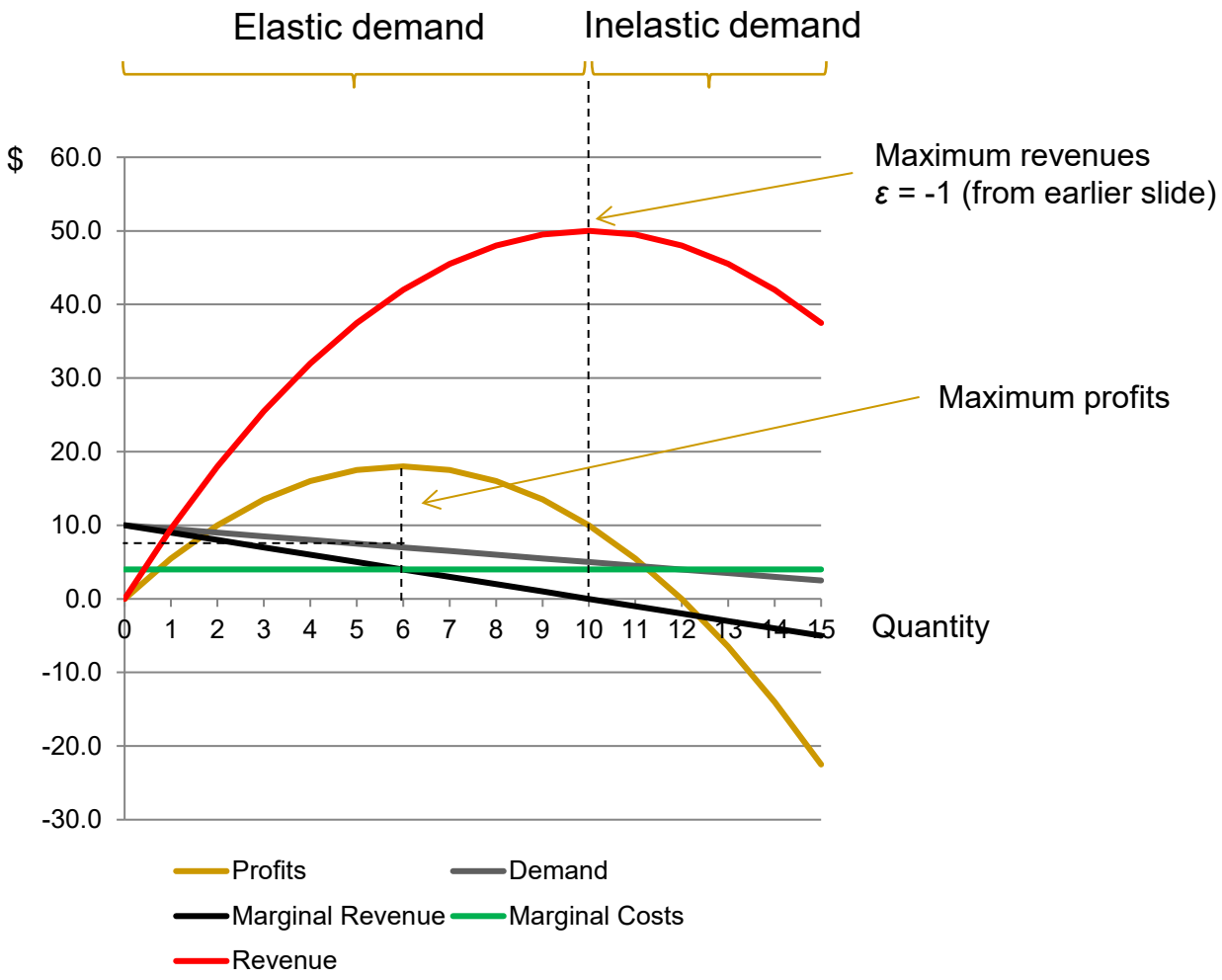
[1] But true whenever marginal costs are constant or increasing.

Monopolists and elasticities

- Proposition
  - A monopolist will not operate in the inelastic portion of its demand curve

Remember:

$$\varepsilon = \frac{\Delta q_i}{\Delta p_i}\frac{p_i}{q_i}$$



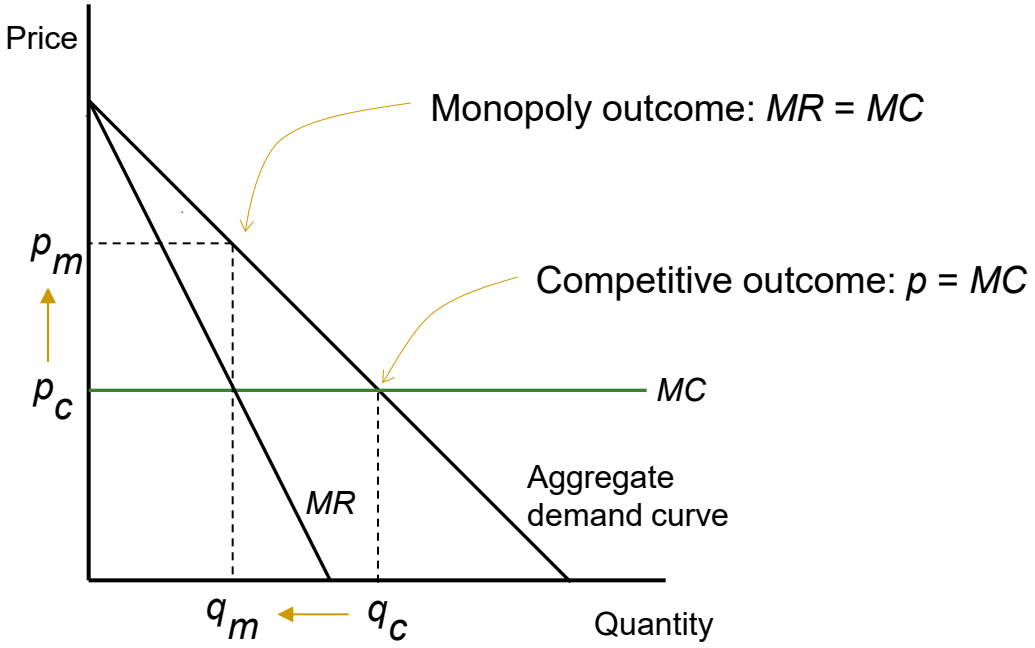
Review: Public policy on monopolies

- Modern view on why monopolies are bad:
  1. Increase price and decrease output
  2. Shift wealth from consumers to producers
  3. Create economic inefficiency ("deadweight loss")

  - May (or may not) have other socially adverse effects
    - Decrease product or service quality
    - Decrease the rate of technological innovation or product improvement
    - Decrease product choice

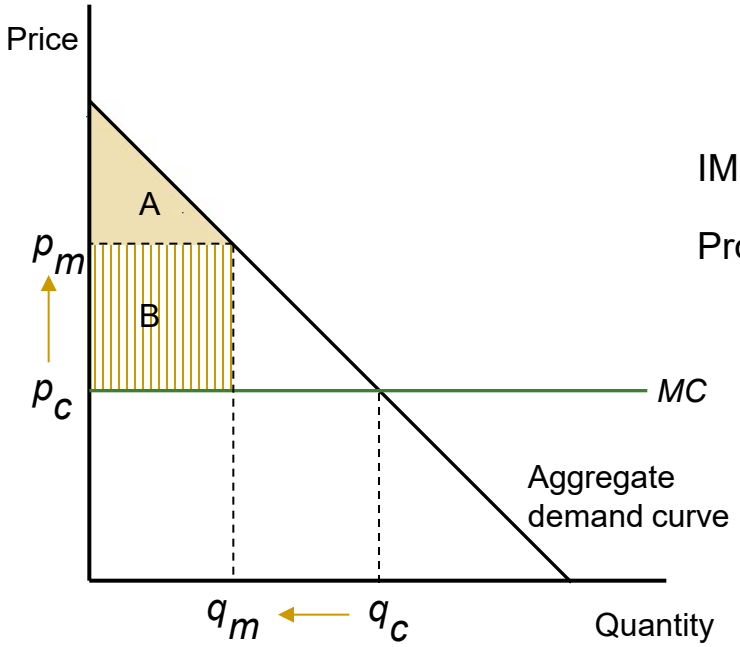
Review: Public policy on monopolies

- Output decreases: $q_c > q_m$
- Prices increase: $p_c < p_m$



Review: Public policy on monopolies

- Shifts wealth from inframarginal consumers to producers*
  - Total wealth created ("surplus"): A + B
  - Sometimes called a "rent redistribution"

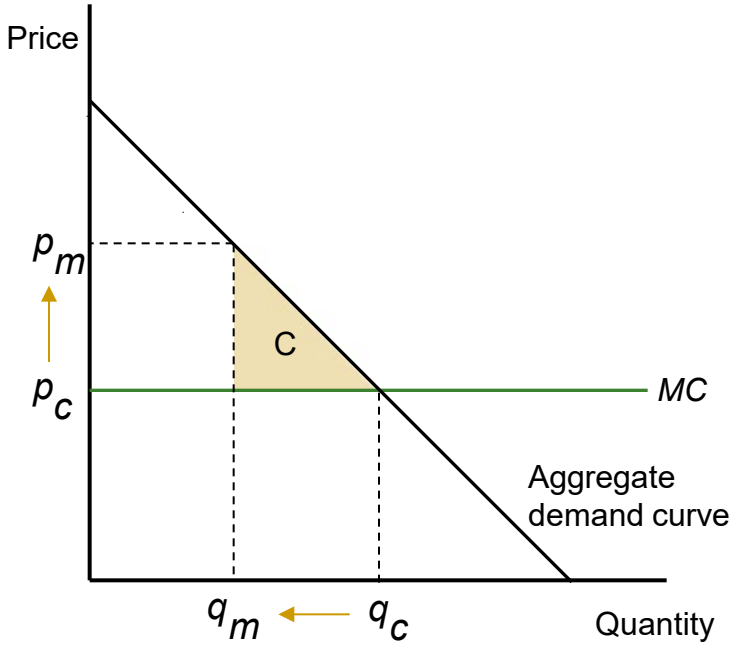


	Competitive	Monopoly
IM consumers	A + B	A
Producers	0	B

* Inframarginal customers here means customers that would purchase at both the competitive price and the monopoly price

Review: Public policy on monopolies

- "Deadweight loss" of surplus of marginal customers*
  - Surplus C just disappears from the economy
  - Creates "allocative inefficiency" because it does not exhaust all gains from trade

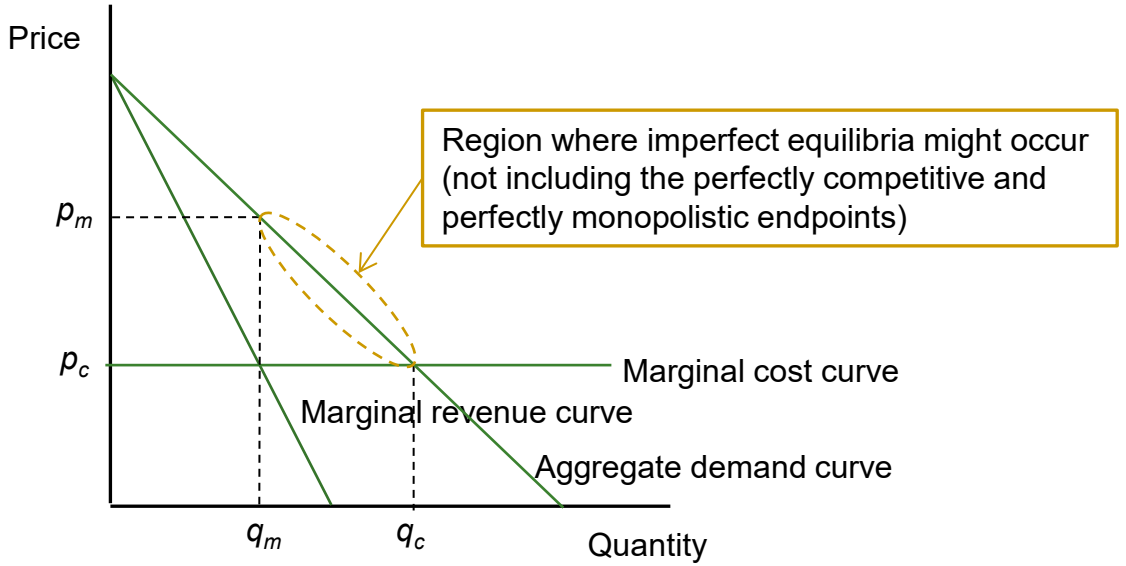


* Marginal customers here means customers that would purchase at both the competitive price and the monopoly price

Imperfectly Competitive Markets

Imperfectly Competitive Markets

- Range of imperfect equilibria
  - An imperfectly competitive equilibrium occurs when the equilibrium price and output on the demand curve falls strictly between the perfect monopoly equilibrium and the perfectly competitive equilibrium

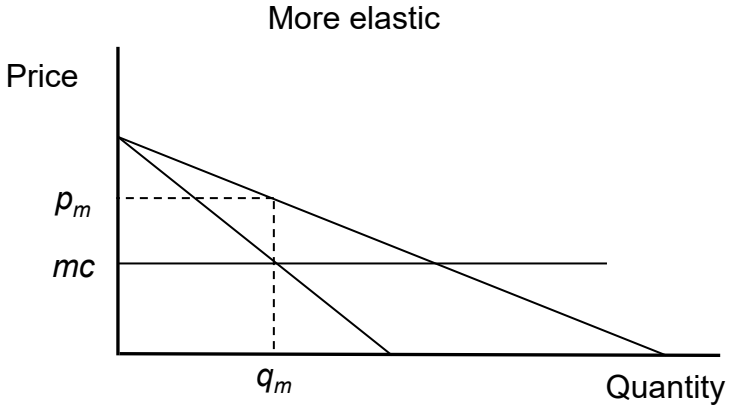


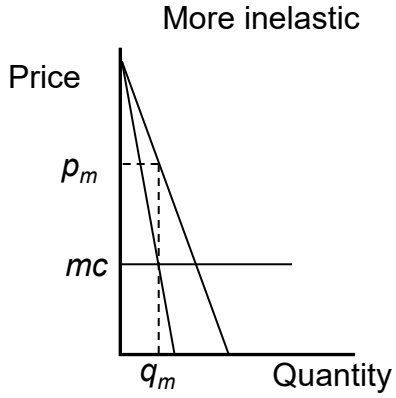
Market power

- Measuring market power
  - Economically, market power is the power of the firm to affect the market-clearing price through its choice of output level
  - The traditional economic measure of market power is the *price-cost margin* or *Lerner index L*, which is a measure of how much price has been marked up as a percentage of price:

$$L = \frac{p - mc}{p}$$

    - In a competitive market, $L = 0$ since because $p = mc$
    - In a perfectly monopolized market, L increases as the aggregate demand curve becomes steeper (more inelastic):





Market power

- The Lerner index for an imperfectly competitive market
  - The Lerner index is usually used as a measure of the market power of a single firm
  - The market Lerner index is defined as the sum of the Lerner indices of all firms in the market weighted by their market share:

$$L \equiv \sum_{i=1}^{n} L_i s_i ,$$

  - Where there are n firms in a homogeneous product market, with each firm i having a Lerner index L_i and a market share s_i, the aggregate Lerner index is:

$$L \equiv \sum_{i=1}^{n} L_i s_i = \sum_{i=1}^{n} s_i , \frac{p - c_i}{p}$$

Measures of market concentration

- The Herfindahl-Hirschman Index (HHI)
  - *Definition*: The Herfindahl-Hirschman Index (HHI) is defined as the sum of the squares of the market shares of all the firms in the market:

$$HHI \equiv s_1^2 + s_2^2 + \cdots + s_n^2 = \sum_{i=1}^{n} s_i^2$$

The HHI is the principal measure of market concentration used in antitrust law in all markets (not just Cournot markets)

where the market has n firms and each firm i has a market share of s_i.

  - Example
    - Say the market has five firms with market shares of 50%, 20%, 15%, 10%, and 5%. The conventional way in antitrust law is to calculate the HHI using whole numbers as market shares:

$$\begin{aligned} HHI &= 50^2 + 20^2 + 15^2 + 10^2 + 5^2 \\ &= 2500 + 400 + 225 + 100 + 25 \\ &= 3250 \end{aligned}$$

In whole numbers, the HHI ranges from 0 with an infinite number of firms to 10,000 with one firm

    - In some economics applications, however, the HHI is calculated using fractional market shares:

$$\begin{aligned} HHI &= 0.50^2 + 0.20^2 + 0.15^2 + 0.10^2 + 0.05^2 \\ &= 0.25 + 0.04 + 0.0225 + 0.01 + 0.0025 \\ &= 0.3250 \end{aligned}$$

In fractional numbers, the HHI ranges from 0 with an infinite number of firms to 1 with one firm

Homogeneous product models

- Homogeneous product models
  - Characterized by products that are undifferentiated (that is, *fungible* or *homogeneous*) in the eyes of the customer
  - Common examples:
    - Ready-mix concrete
    - Winter wheat
    - West Texas Intermediate (WTI) crude oil
    - Wood pulp
  - Two properties of homogeneous products
    1. Customers purchase from the lowest cost supplier → This forces all suppliers in the market to charge the same price
    2. Since the goods are identical, their quantities can be added

$$Q(p) = \sum q_i(p)$$

    - Adding all individual consumer demands at price p gives aggregate demand (Q)
    - Adding all individual firm outputs at price p gives aggregate supply

Cournot oligopoly models

A control variable is the variable the firm can set (control) in its discretion

- The setup
  - The standard homogenous product model is the *Cournot model*
  - In a Cournot model, the firm's control variable is *quantity*
    - The (download-sloping) demand curve gives the relationship between the aggregate quantity produced Q and the market-clearing price p:

$$p = p(Q), \text{ where } Q = \sum_{i=1}^{n} q_i,$$

in a market with n firms

  - The profit equation for firm i is:

$$\pi_i = p(Q)q_i - T_i(q_i), \quad i = 1,2,\ldots,n$$

NB: Each firm i choses its level of output q_i, but the aggregate level of output determines the market prices

  - First order condition (FOC) for profit-maximizing firm:

$$m\pi_i(q_i) = mr_i(q_i) - mc_i(q_i) = 0$$

This generates n equations in n unknows and can be solved for each q_i

You should know the setup—You do not need to know how to solve the system of equations

Cournot oligopoly models

- Production levels in Cournot models
  - A simple example
    - Compare the competitive, Cournot, and monopoly outcomes in this example

Demand curve: $Q = 100 - 2p$

	Price	Quantity
Perfectly competitive	5 (= mc)	90
Cournot (n = 2)	20	60
Perfect monopoly	27.5	45

    - Note that the perfect monopoly output is one-half the perfectly competitive output (with linear demand and constant marginal costs)

  - When demand is linear and there are n identical firms in a Cournot model, then:

$$Q_{Cournot} = \frac{n}{n+1} Q_{Competitive}$$

NB: As the number of firms n gets large, the ratio $n/(n+1)$ approaches 1 and the Cournot equilibrium approaches the competitive equilibrium

$q_{competitive}$	90	90	90	90	90	90	90	90	90
n	9	8	7	6	5	4	3	2	1
$q_{cournot}$	81	80	78.8	77.1	75	72	67.5	60	45

Cournot oligopoly models

- Relationship of the Lerner index to the Herfindahl-Hirschman Index
  - *Proposition*: In a Cournot oligopoly model with n firms, the Lerner index may be calculated from the HHI and the market elasticity of demand:

$$L = \frac{HHI}{|\varepsilon|},$$

    where L is the market Lerner index and ε is the market price-elasticity of demand
  - This proposition is the reason antitrust law uses the HHI as the measure of market concentration
    - *WDC*: It is not a great reason, but is it generally accepted as better than the alternative measures (especially the four-firm concentration ratios used from the 1950s through the 1970s)
    - The HHI was adopted as the measure of market concentration in the 1982 DOJ Merger Guidelines and by the end of the 1980s has been accepted by the courts

The following slides prove the proposition. The proof is (very) optional, but if you are comfortable with a little calculus, you might find it interesting

Cournot oligopoly models

- Relationship of the Lerner index to the Herfindahl-Hirschman Index
  - *Proof* (optional):
    - Firm *i*'s Lerner index L_i is:

$$L_i = \frac{p(Q) - c_i}{p(Q)},$$

where $p(Q)$ is the single market equilibrium price (determined by aggregate production quantity Q) and c_i is firm i's marginal cost of production

    - The first order condition for firm i's profit-maximizing quantity is:

$$\frac{d\pi_i}{dq_i} = p(Q) + q_i \frac{dp(Q)}{dq_i} - c_i = 0$$

    - Now

$$\frac{dp(Q)}{dq_i} = \frac{dp(Q)}{dQ}\frac{dQ}{dq_i} = \frac{dp(Q)}{dQ}$$

Equals 1 under the Cournot assumption that all other firms do not change their behavior when firm i changes output

Cournot oligopoly models

- Relationship of the Lerner index to the Herfindahl-Hirschman Index
  - *Proof* (optional) (con't)
    - Substituting and rearranging the top equation:

$$p(Q) - c_i = q_i \frac{dp(Q)}{dQ}$$

    - Dividing both sides by $p(Q)$ and multiplying the right-hand side by Q/Q:

$$\frac{p(Q) - c_i}{p(Q)} = \frac{q_i}{Q} \frac{dp(Q)}{dQ} \frac{Q}{p(Q)} = \frac{s_i}{|\varepsilon|}$$

    - Multiply both sides by s_i:

$$\frac{p(Q) - c_i}{p(Q)} s_i = \frac{s_i^2}{|\varepsilon|}$$

Cournot oligopoly models

- Relationship of the Lerner index to the Herfindahl-Hirschman Index
  - *Proof* (optional) (con't)
    - Summing over all firms:

$$\sum_{i=1}^{n} \frac{p(Q) - c_i}{p(Q)} s_i = \sum_{i=1}^{n} \frac{s_i^2}{|\varepsilon|} = \frac{1}{n} \sum_{i=1}^{n} s_i^2$$

    - The left-hand side is the market Lerner index and the right-hand side is the HHI divided by the absolute value of the market price-elasticity:

$$L = \frac{HHI}{|\varepsilon|}$$

Q. E.D.

Cournot oligopoly models

- Mergers and price increases in Cournot oligopoly
  - From the previous slides:

$$L = \frac{HHI}{|\varepsilon|},$$

  - Then:

$$L^{\text{Postmerger}} - L^{\text{Premerger}} = \frac{HHI^{\text{Postmerger}}}{|\varepsilon|} - \frac{HHI^{\text{Premerger}}}{|\varepsilon|} = \frac{\Delta HHI}{|\varepsilon|}$$

This probably is the justification for the emphasis in the Merger Guidelines on changes in the HHI (the "delta") resulting from a merger

In other words, the difference in the share-weighted average percentage markup resulting from the merger is $\Delta HHI/|\varepsilon|$

Cournot oligopoly models

- Some final observations on the HHI and Cournot models
  - The HHI and ΔHHI are fundamental to modern merger antitrust law
  - The rationale for using these measures is grounded in their relationship in the Cournot model to percentage price-cost margins measured by the Lerner index

Cournot oligopoly models

- Some final observations on the HHI and Cournot models (con't)
  - BUT—
    - Price-cost margins typically cannot be calculated directly
      - Prices, while seemingly observable, can be empirically difficult to measure given the existence of discounts, variations in the terms of trade, and price and quality changes over time
      - Marginal costs are even more difficult to measure
        - *Time period*: There is the conceptual issue of the time period over which to assess marginal cost. As the time period becomes longer, some fixed costs such as real estate rents or workers' salaries become marginal costs. There is nothing in the theory that tells us what is the proper time period.
        - *Complex production processes*: In the real word, production functions are often joint and are used to produce multiple products. The is a conceptual problem of how to allocate costs associated with joint production to each individual product type.
        - *Dynamic market conditions*: Marginal costs can fluctuate rapidly in dynamic markets due to changing supply and demand conditions, input price volatility, or disruptions in the production process.
    - The Cournot oligopoly model is an abstraction that may not (and probably does not) accurately characterize any real-world market

Cournot oligopoly models

- Some final observations on the HHI and Cournot models (con't)
  - HHIs to some extent allow us to infer the magnitudes of percentage price-cost margins and how these margins may change with changes in market structure
  - BUT—
    - Antitrust law tests just look at the HHI and ΔHHI—antitrust law does not modulate its HHI tests for market elasticity of demand as the Cournot model suggests it should
      - So two mergers in a Cournot model may have the same HHI and ΔHHI but have dramatically different premerger postmerger percentage price-cost margins
        - A higher aggregate elasticity of demand yields lower percentage price-costs margins than a less elastic demand even with the same HHI and ΔHHI.
      - In any event, there are no accepted "thresholds" in antitrust law when percentage price-margins become "anticompetitive"

Bertrand oligopoly models

- The setup
  - In a Bertrand model, the firm's control variable is *price*
    - Compare with the Cournot model, where the firm's control variable is *quantity*
    - The (download-sloping) residual demand curve gives the relationship between the firms choice of price and the quantity consumers will demand from the firm at that price
  - The profit equation for firm *i* is:

$q_i(p_i)$ is the residual demand function for firm *i*

$$\pi_i(p_i) = p_i q_i(p_i) - T_i(q_i(p_i)), \quad i = 1,2,\ldots,n$$

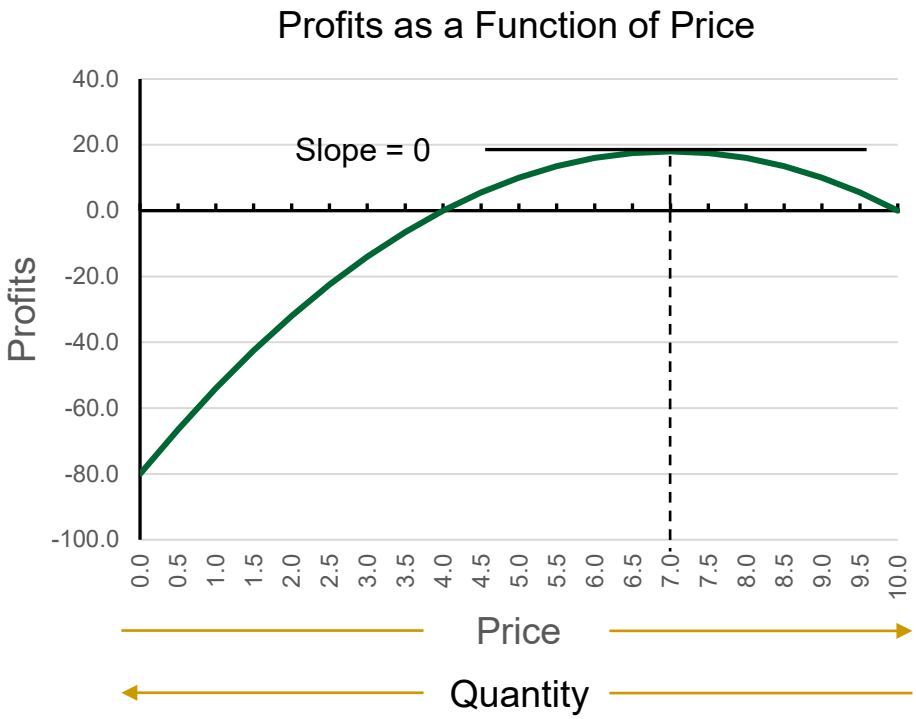
To see the first order conditions in operation, let's first look at profit-maximization for a monopolist whose control variable is price

Bertrand oligopoly models

- Profits as a function of price: Example for a monopolist

Price p	Quantity q	Revenues r	Costs T	Profits Π
0.0	20	0.0	80	-80.0
0.5	19	9.5	76	-66.5
1.0	18	18.0	72	-54.0
1.5	17	25.5	68	-42.5
2.0	16	32.0	64	-32.0
2.5	15	37.5	60	-22.5
3.0	14	42.0	56	-14.0
3.5	13	45.5	52	-6.5
4.0	12	48.0	48	0.0
4.5	11	49.5	44	5.5
5.0	10	50.0	40	10.0
5.5	9	49.5	36	13.5
6.0	8	48.0	32	16.0
6.5	7	45.5	28	17.5
7.0	6	42.0	24	18.0
7.5	5	37.5	20	17.5
8.0	4	32.0	16	16.0

Demand: $q = 20 - 2p$
Fixed costs = 0
Marginal costs = 4 (for units)



Bertrand oligopoly models

- Observations
  - The profit curve as a function of price is a parabola
    - Although different in shape than the profit curve as a function of quantity
  - The profit maximum is when the slope of the profit curve is zero
  - So:

Marginal profit (as a function of price)	=	Marginal revenue (as a function of price)	–	Marginal cost (as a function of price)
	=	0 at the firm's profit maximum		

NB: In Bertrand models, the marginal quantities are calculated for a one unit increase in price, not *a one unit increase in quantity as in Cournot models*

Bertrand oligopoly models

- Profit-maximization when a monopolist sets price: Example

Demand: $q = 20 - 2p$ Marginal costs ($mc(q)$) = 4
Fixed costs = 0

- Revenues:

$$r(p) = pq(p)$$
$$= p(20 - 2p)$$
$$= 20p - 2p^2$$

This describes the parabola on Slide 102

- Marginal revenues:

$$mr(p) = 20 - 4p$$

Remember, if $y = ax + bx^2$ is the function, then the marginal function is $a + 2bx$

- Cost: $C(q(p)) = mc(q) * q(p) = mc(q)(20 - 2p)$
$$= 4(20 - 2p)$$
$$= 80 - 8p$$

Constant marginal cost

Note: If $y = a + bx$ is the function, then the marginal function is b

- Marginal cost: $mc(p) = -8$

NB: This is marginal cost as a function of p (not q). Why is it a negative number?

- FOC: $mr(p^*) = mc(p^*)$
$$20 - 4p^* = -8$$

So $p^* = 7$ and $q^* = 6$

Bertrand oligopoly models

- Homogeneous products case with equal cost functions
  - Consider two firms producing homogeneous (identical) products at constant marginal cost *c* and use price p_i as their control variable
  - Consumers also purchase from the lower priced firm
    - If both firms charge the same price, they split equally consumer demand
  - Profit function for firm *i*:

$$\pi(p_i) \begin{cases} = p_i Q(p_i) - c\left(Q(p_i)\right) & \text{if } p_i < p_j \\ = \dfrac{p_i Q(p_i) - c\left(Q(p_i)\right)}{2} & \text{if } p_i = p_j \\ = 0 & \text{if } p_i > p_j \end{cases}$$

    - That is, firm *i* gets 100% of market demand $Q(p_i)$ at price p_i if p_i is the lower price of the two firms; the two firms split the market demand if their prices are equal; and firm *i* gets nothing if it has the higher price
    - *Equilibrium*: $p_1 = p_2 = mc$, so that both firms price at marginal cost (i.e., the competitive price) and split equally market demand and total market profits

Bertrand oligopoly models

- Homogeneous products case with asymmetric cost functions
  - Now consider two firms producing homogeneous (identical) products but with different cost functions costs, with firm 1 have lower marginal costs than firm 2 (i.e., $mc_1(q(p) < mc_2(q(p))$
  - The profit function is the same as before:

$$\pi(p_i)\begin{cases} = p_i Q(p_i) - c(Q(p_i)) & \text{if } p_i < p_j \\ = \dfrac{p_i Q(p_i) - c(Q(p_i))}{2} & \text{if } p_i = p_j \\ = 0 & \text{if } p_i > p_j \end{cases}$$

  - *Equilibrium*: Firm 1 prices just below firm 2 and captures 100% of market demand
  - *Idea*: Firm 1 and Firm 2 compete the price down to firm 2's marginal cost as in the symmetric cost case. Then firm 1 just underprices firm 2 and captures 100% of the market demand

Bertrand oligopoly models

- Differentiated products case
  - When products are differentiated, a lower price charged by one firm will not necessarily move all the market demand to that firm
    - Consider a market with only red cars and blue cars
    - Some consumers like blue cars so much that even if the price of red cars is lower than the price of blue cars, there will still be positive demand for blue cars
    - Moreover, if the price of blue cars increases, some (inframarginal) blue car customers will purchase blue cars at the higher price, while some (marginal) customers will switch to red cars
    - This means that the demand for red cars (and separately for blue cars) is a function both of the price of red cars and the price of blue cars
    - It also means that the price of blue cars may not equal the price of red cars in equilibrium

Bertrand oligopoly models

- Differentiated products case
  - Simple linear model
    - Firms 1 and 2 produce differentiated products and face the following residual demand curves:

$$q_1 = a - b_1 p_1 + b_2 p_2$$
$$q_2 = a - b_1 p_2 + b_2 p_1$$

NB: Each firm's demand decreases with increase in its own price and increases with increases in the price of the other firm

Assume that $b_1 > b_2$, so that each firm's residual demand is more sensitive to its own price than to the other firm's price

- Assume each firm has a cost function with no fixed costs and the same constant marginal costs:

$$c_i(q_i) = cq_i$$

- Firm 1's profit-maximization problem:

$$\max_{p_1} \pi_1 = (p_1 - c)(a - b_1 p_1 + b_2 p_2)$$

NB: This formulation does not take into account firm 2's reaction to a change in Firm 1's price. It assumes that Firm 2's price is constant.

  - Firm 2 solves an analogous profit-maximization problem
- Derive the FOCs for each firm and solve for the Bertrand equilibrium:

$$p_1^* = p_2^* = \frac{a + cb_1}{2b_1 - b_2}$$

You do not need to know this. What is important is how the model is set up.

Dominant firm with a competitive fringe

- The setup
  - Consider a homogeneous product market with—
    1. a *dominant firm*, with a control variable q and which sees its output decisions as affecting price and so sets output so that $mr = mc$, and
    2. a *competitive fringe* of firms that are small and act as price takers, that is, they do not see their individual choices of output levels as affecting price and therefore price as competitive firms (i.e., they set their production quantities q_i so that $p = mc(q_i)$)
  - *Decision for the dominant firm*: Pick the profit-maximizing level for its output given the production of the competitive fringe
    - The model requires some constraint on the ability of the competitive fringe to expand its output. Otherwise, the competitive fringe will take over the market.
    - The constraint usually is either limited production capacity or increasing marginal costs

Dominant firm with a competitive fringe

- The model
  - At market price p, let $Q(p)$ be the industry demand function and $q_f(p)$ be the output of the competitive fringe.
  - The dominant firm derives its residual demand function $q_d(p)$ starting with the aggregate demand function $Q(p)$ and subtracting the output supplied by the competitive fringe $q_f(p)$ at price p:

$$q_d(p) = Q(p) - q_f(p)$$

  - The dominant firm then maximizes its profit given its residual demand function by solving the following equation for the market price p^* that maximizes the firm's profits:

$$\max_p \pi_D = p \times \left[Q(p) - q_f(p) \right] - T\left(q(p)\right)$$

  - The dominant firm then produces quantity $q^* = q_D(p^*)$

You do not need to know how to solve the dominant firm maximization problem. What is important is the how the model is set up.

Dominant firm with a competitive fringe

- Dominant oligopolies
  - The model can be extended to the case where the dominant firm is replaced by a dominant oligopoly
  - The key is to specify the solution concept for the choice of output by the firms in the oligopoly (e.g., Cournot). You then create a residual demand curve for the oligopoly and apply the solution concept to that demand curve.
- Fringe firms
  - As we saw in Unit 2, the DOJ and the FTC typically ignore fringe firms. The dominant oligopoly model with a competitive fringe provides a theoretical justification.

Appendix

Mathematical notation

- pq: p times q (equivalently, $p \times q$, $p \cdot q$, and (p)(q))
- $p(q)$: p evaluated when quantity is q ("p as a function of q")
- $p(q)q$: p (evaluated at q) times q (i.e., pq)
- Δq: The change in q to the new state from the old state (i.e., $q_2 - q_1$)
- $\sum_{i=1}^{n} a_i$: The sum of the a_i's (i.e., $a_1 + a_2 + \ldots + a_n$)
- $\frac{\Delta y}{\Delta x}$: The change in y divided by the change in x
- $|a|$: The absolute value of a (i.e., a without a positive or negative sign) (e.g., |3| = |-3| = 3)
- $\equiv$ Like an equals sign but means a definition

Mathematical notation

Optional calculus terms

- $\frac{dy}{dx}$: The derivative of *y* with respect to *x* (where *y* is a function of *x*)
- $\frac{\partial y}{\partial x}$: The partial derivative of *y* with respect to *x* (where *y* is a function of *x*)
- Derivatives
  - If $y = a + bx + cx^2$
    then the derivative of *y* with respect to *x* is $\frac{dy}{dx} = b + 2cx$

Class 11-13 slides

Unit 9: H&R Block/TaxACT

Part 1. Market Definition

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Merger Antitrust Law
Georgetown University Law Center

October 10, 2024


H&R
BLOCK®


TaxAct®

The deal

- H&R Block to acquire TaxAct
  - Signed October 13, 2010
  - $287.5 million (all cash)
- The buyer: H&R Block
  - Missouri corporation headquartered in Kansas City, MO
  - Employees: 7900 full-time (107,200 including seasonal employees)
  - Revenues: $3.8 billion
  - Tax products
    1. Retail (filed 14.7 million returns)
       - Has a brick-and-mortar store within 5 miles of most Americans
       - 10,099 company-owned and franchised locations (average fee: $190) (2011 10-K)
    2. Software products:
       - "H&R Block At Home" (2.2 million returns)
    3. Online tax preparation
       - "H&R Block At Home Online Tax Program" (3.7 million returns)

The deal

- The target: TaxACT
  - Delaware corporation headquartered in Cedar Rapids, Iowa
  - Sells TaxACT-branded tax preparation products and services (5.2 million returns)
  - "Freeium" business model—2010 Consumer product offerings:

2010 TaxACT Consumer Product Offerings

TaxACT Desktop (Download/CD)

Free Federal Edition
- Federal Software = FREE
- Federal Electronic Filing = FREE
- State Software = $14.95
- State Electronic Filing = $7.95

Deluxe Federal Edition
- Federal Software = $12.95
- Federal Electronic Filing = $7.95*
- State Software = $14.95
- State Electronic Filing = $7.95

Ultimate Bundle - Deluxe & State
- Federal & State Software = $21.95
- Federal Electronic Filing = $7.95*
- State Electronic Filing = $7.95

TaxACT Online (Over the Web)

Free Federal Edition
- Federal Software = FREE
- State Add On = $17.95
- E-Filing = FREE

Deluxe Federal Edition
- Federal Software = $9.95
- State Add On = $8.00
- E-Filing = FREE

Ultimate Bundle (Deluxe & State)
- Federal & State Software = $17.95
- E-Filing = FREE

Tax preparation—Three methods

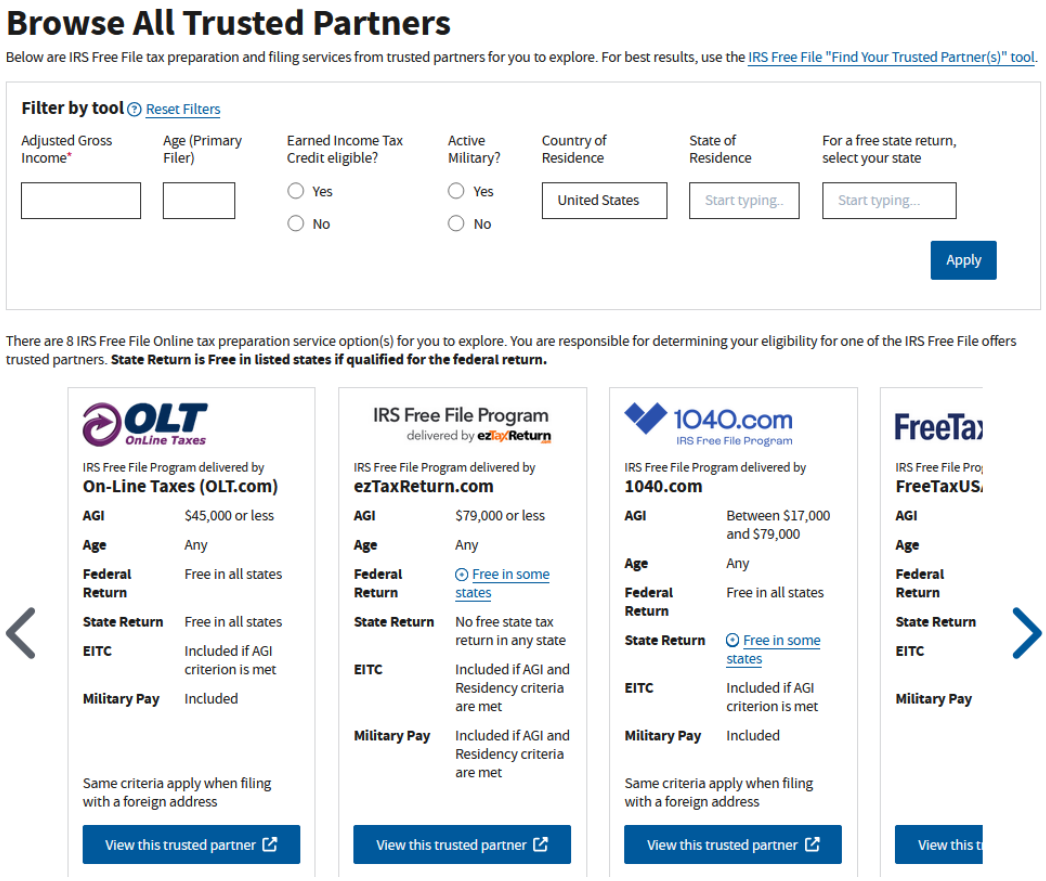
1. Manual (“pen and paper”)
2. “Assisted” preparation (hiring a tax professional or going to a retail tax store)
   - H&R Block operates the largest retail tax store chain in the U.S.
   - Jackson-Hewitt (retail tax stores)
   - Liberty Tax Service (retail tax stores)
   - Individual tax preparers
3. Digital "do-it-yourself" (DDIY) tax software—disks, downloads, and online (35-40 million returns)
   - *Intuit* (62.2%) — TurboTax
   - *H&R Block* (15.6%) — “H&R Block At Home” (6.69 million units sold)
   - *TaxACT* (12.8%) (5 million returns) — “Freemium”
   - *Others* (9.4%) [including TaxHawk/FreeTaxUSA (3.2%); TaxSlayer (2.7%)]

Deal rationale

- H&R Block explanation
  - Deal allows combined companies to reach more customers with different needs
    - Companies sell complementary products (in a business sense)
      - HRB: higher-end, higher-priced products
      - TaxACT: lower functionality, lower-priced products
    - Merged company will maintain both HRB and TaxACT brands (Op. 9)
      - Echoes of Hertz/Dollar Thrifty?
- DOJ theory
  - IRS was working to promote efiling
    - Partnering with digital tax preparation firms through the Free Software Alliance to create free or “value” products
    - But at request of the participating companies, the IRS imposed restrictions on which taxpayers could qualify for free products on the IRS web site
  - TaxACT was the first company to offer a free DDIY product to all taxpayers for federal filings on its own website
  - HRB concerned that “free” DDIY products would undermine HRB paid-DDIY products
  - HRB targeted TaxACT for acquisition to eliminate a firm that threatened to disrupt HRB’s business model in order to maintain higher prices for paid products in the future

Deal rationale

- IRS free filing program (public-private partnership)



Browse All Trusted Partners

Below are IRS Free File tax preparation and filing services from trusted partners for you to explore. For best results, use the IRS Free File "Find Your Trusted Partner(s)" tool.

Filter by tool Reset Filters

Adjusted Gross Income*	Age (Primary Filer)	Earned Income Tax Credit eligible?	Active Military?	Country of Residence	State of Residence	For a free state return, select your state
		Yes / No	Yes / No	United States	Start typing..	Start typing...

Apply

There are 8 IRS Free File Online tax preparation service option(s) for you to explore. You are responsible for determining your eligibility for one of the IRS Free File offers trusted partners. **State Return is Free in listed states if qualified for the federal return.**

OLT Online Taxes

IRS Free File Program delivered by **On-Line Taxes (OLT.com)**

AGI	$45,000 or less
Age	Any
Federal Return	Free in all states
State Return	Free in all states
EITC	Included if AGI criterion is met
Military Pay	Included

Same criteria apply when filing with a foreign address

View this trusted partner

IRS Free File Program delivered by ezTaxReturn

IRS Free File Program delivered by **ezTaxReturn.com**

AGI	$79,000 or less
Age	Any
Federal Return	Free in some states
State Return	No free state tax return in any state
EITC	Included if AGI and Residency criteria are met
Military Pay	Included if AGI and Residency criteria are met

View this trusted partner

1040.com IRS Free File Program

IRS Free File Program delivered by **1040.com**

AGI	Between $17,000 and $79,000
Age	Any
Federal Return	Free in all states
State Return	Free in some states
EITC	Included if AGI criterion is met
Military Pay	Included

Same criteria apply when filing with a foreign address

View this trusted partner

FreeTax

IRS Free File Pro

FreeTaxUS

AGI	
Age	
Federal Return	
State Return	
EITC	
Military Pay	

View this t

DOJ complaint

- *Filed*: May 23, 2011
  - Seven months after the signing of the merger agreement
- *Claim*: Acquisition, if consummated, would violate Section 7:
  - 3 → 2 in digital "do-it-yourself" tax software (disks and online)
    - Note that the DOJ did not consider the "fringe" firms
  - Would result in a duopoly of Intuit (62.2%) and H&R Block (28.4%)
    - 2FCR = 90.2%
    - Next largest firm: TaxHawk (3.2%)
  - Theories of anticompetitive harm:
    - Coordinated effects
    - Unilateral effects

    Will discuss in the last two classes of this unit
- *Prayer*: Permanent injunctive relief blocking the transaction

DOJ strategy

This is not quite right.
Anyone see the problem?

1. Narrow relevant market to DDIY products
2. Use PNB presumption to establish the prima facie case for 3→2 merger
   - Intuit 62.2%
   - HRB 15.6%
   - TaxACT 12.8%

Combined share = 28.4%
$\Delta \approx 400$
Premerger HHI = 4276
Postmerger HHI = 4675

$$HHI = \sum_{i=1}^{n} s_i$$
$$= 62.2^2 + 15.6^2 + 12.8^2$$
$$= 4276 \text{ (premerger)}$$

2010 Horizontal Merger Guidelines: Postmerger HHI > 2500 and Δ > 200 →

"[P]resumed to be likely to enhance market power. The presumption may be rebutted by persuasive evidence showing that the merger is unlikely to enhance market power.[1]

[1] U.S. Dep't of Justice & Fed. Trade Comm'n, Horizontal Merger Guidelines § 5.3 (rev. Aug. 19, 2010).

DOJ strategy

3. Present supporting evidence and reasoned economic arguments on anticompetitive effect to strengthen the showing of anticompetitive effect
   - To follow Merger Guidelines and to make the case more persuasive
   - Focus on likely price effects (why?)
4. Anticipate and rebut likely defenses
   - Should know defenses from presentations made by parties in the HSR merger review
     - Barriers to entry to defeat an anticipated entry defense
     - Lack of sufficient cognizable efficiencies to defeat an efficiencies defense
5. Press the public equities
   - The public equities will always win (especially on a permanent injunction where the court has found that the merger would violate Section 7)

Merger parties' strategy

1. Expand relevant product market to all tax preparation methods to negate the use of the *PNB* presumption
   - Argue functional substitutability for expanded market
2. Shares in expanded market too low to trigger *PNB* presumption
   - All tax preparation methods: 140 million returns total
   - HRB
     - ≈ 6.69 million DDIY (4.8%) + 14.7 million assisted (10.5%)
     - ≈ 21.39 million returns (15.3%)
   - TaxACT ≈ 5 million returns (3.6%)

   Combined share: 18.9%
   Delta: 110
3. Rebut explicit theories of anticompetitive effect
   - Market not susceptible to coordinated effects
   - Merger would not create anticompetitive unilateral effects
4. Offer downward pricing pressure defenses
   - Entry defense
   - Post-merger efficiencies offset any upward pricing pressure
5. Largely ignore equities—Cannot defeat the DOJ on this element

The trial

- DOJ complaint
  - Filed May 23, 2011
  - In the District of Columbia
- Judge Beryl A. Howell
  - Nominated by President Barack Obama
  - Sworn in: December 27, 2010
  - Chief Judge (March 17, 2016, to March 17, 2023)
  - Senior judge: February 1, 2024
- Trial
  - Parties stipulated to a TRO—proceeded to trial on the merits
    - Court consolidated proceedings under Rule 65(a)(2)
  - Trial began on September 6, 2011 (nine days)— 4 months after complaint filed
    - 8 fact witnesses/3 expert witnesses
    - Additional testimony by affidavit and deposition
    - 800 exhibits from each side
  - Decision: Permanent injunction ordered on October 31, 2011 (originally filed under seal)
    - < 6 months after complaint filed

A Little Law

Clayton Act § 7

- Clayton Act § 7 provides the U.S. antitrust standard for mergers

> No person engaged in commerce or in any activity affecting commerce shall acquire, directly or indirectly, the whole or any part of the stock or other share capital and no person subject to the jurisdiction of the Federal Trade Commission shall acquire the whole or any part of the assets of another person engaged also in commerce or in any activity affecting commerce, where in **any line of commerce** or in any activity affecting commerce **in any section of the country**, **the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly**. [1]

- Essential elements of a Section 7 violation
  1. Acquisitions of stock or assets that,
  2. "in any line of commerce" (product market)
  3. "in any part of the country" (geographic market)
  4. the effect of the acquisition "may substantially lessen competition or tend to create a monopoly"

Called the *relevant market*

Called the *anticompetitive effects test*

[1] 15 U.S.C. § 18 (emphasis added; remainder of section omitted).

Proving the prima facie case

- Three elements:
  1. *Product market definition*: Courts broadly look at two types of indicia in evaluating evidence on the relevant product market—
     a. The "*Brown Shoe* factors"
     b. The "hypothetical monopolist test"
  2. *Geographic market definition*: Courts broadly look at two types of indicia in evaluating evidence on the relevant geographic market—
     a. "The area of effective competition"
        i. The area where customers of the merging firms can practically turn to alternative suppliers (when customers travel to suppliers—think retail stores)
        ii. The area where alternative suppliers exist that can practically service the customers of the merging firm (when suppliers travel to customers—think plumbers)
     b. The "hypothetical monopolist test"
  3. *Gross anticompetitive effect*: Courts broadly look at two types of indicia in evaluating evidence on the relevant market
     a. The *Philadelphia National Bank* presumption
     b. Explicit theories and supporting direct and circumstantial evidence of likely anticompetitive harm resulting from the merger

Before turning to market definition, we need to examine the Philadelphia National Bank *presumption*

The *PNB* presumption

> "This intense congressional concern with the trend toward concentration warrants dispensing, in certain cases, with elaborate proof of market structure, market behavior, or probable anticompetitive effects. Specifically, we think that a merger which **produces a firm controlling an undue percentage share of the relevant market**, and **results in a significant increase in the concentration of firms** in that market is so inherently likely to lessen competition substantially that it must be enjoined in the absence of evidence clearly showing that the merger is not likely to have such anticompetitive effects."[1]

- Requires—
  - The combined firm to pass some (unspecified) threshold of *market share*, *and*
  - The transaction to result in a *significant increase in market concentration*

  NB: The opinion was careful to note that it was not setting a lower bound and that some commentators had suggested 20% as a threshold of "undue" market share
- Supposed to reflect the latest in economic thinking in the then-prevailing *structure-conduct-performance paradigm*
  - "[T] the test is fully consonant with economic theory."[2]
  - "[C]ompetition is greatest when there are many sellers, none of which has any significant share."[3]

[1] United States v. Philadelphia National Bank, 374 U.S. 321, 363 (1963).
[2] *Id*. (citing extensively to structure-conduct-performance literature).
[3] *Id*.

The *PNB* presumption: Background

- Application in *Philadelphia National Bank*
  - Combined firm had at least a 30% share in the relevant market
    - Enough for an "undue market share"
  - The share of the two largest banks in the relevant market increased from 44% to 59%:
    - Enough for a "significant increase" in market concentration
  - Supreme Court
    - The combined firm's share and the increase in market concentration was sufficient to predicate the *PNB* presumption
    - There was nothing in the record to rebut the presumption
      - The district court misplaced reliance on testimony that competition was vigorous and would continue to be vigorous (problem too complex; witnesses failed to give "concrete reasons" for their conclusions)

The *PNB* presumption: Background

- The Supreme Court in the 1960s was very aggressive on the market share thresholds of the *PNB* presumption
- Some (infamous) early Supreme Court precedents
  - Brown Shoe/Kinney (1962)[1] (pre-*PNB*)
    - Combined share of as little as 5% in an unconcentrated market
  - Von's Grocery/Shopping Bag Food Stores (1966)[2]
    - 4.7% (#3) + 4.2% (#6) → 8.9% (#2) in an unconcentrated market
  - Pabst Brewing/Blatz Brewing (1966)[3]
    - 3.02% (#10) + 1.47% (#18) → 4.49% (#5) in an unconcentrated market

Bottom line: Through the 1960s and into the 1970s, antitrust law prohibited most significant horizontal mergers and acquisitions

[1] Brown Shoe Co. v. United States, 370 U.S. 294 (1962).
[2] United States v. Von's Grocery Co., 384 U.S. 270 (1966).
[3] United States v. Pabst Brewing Co., 384 U.S. 546 (1966).

The *PNB* presumption: Background

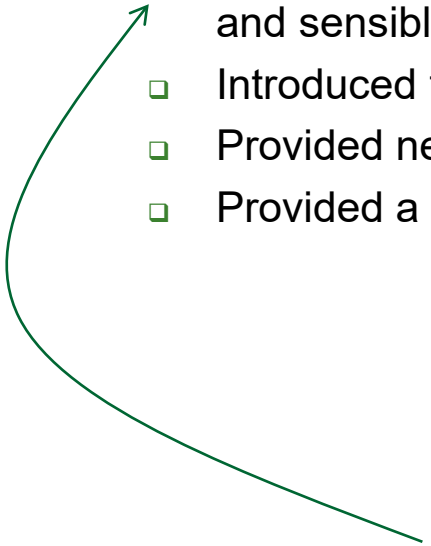
- Status of the *PNB* presumption as of the late 1970s
  - *General Dynamics* (1974) had returned to a rebuttable presumption
  - BUT
    - The law provided no meaning test of market definition
    - The market share triggers for the presumption remained very low
    - The evidence sufficient to rebut the presumption remained generally undefined
    - Courts tended to defer to the market definitions advanced by the DOJ and FTC
    - The "Potter Stewart rule" continued to hold not withstanding *General Dynamics:*

> The sole consistency that I can find is that in litigation under [Section 7], the Government always wins.[1]

[1] United States v. Von's Grocery Co., 384 U.S. 270, 301 (1966) (Stewart, J., dissenting).

The *PNB* presumption: Background

- 1982 DOJ Merger Guidelines
  - Introduced the *hypothetical monopolist test* to provide an economically rigorous and sensible means of defining markets in the context of the *PNB* presumption
  - Introduced the HHI as the measure of market concentration
  - Provided new market share thresholds to be used by the DOJ
  - Provided a catalog of defenses to rebut the presumption



This is why we needed to introduce the PNB *presumption before examining market definition*

Baker-Hughes[1]

- Uses a three-step burden-shifting approach:
  1. The plaintiff bears the burden of proof in market definition and in market shares and market concentration within the relevant market sufficient to trigger the *PNB* presumption and thereby prove a prima facie Section 7 violation
     - More generally, this should be the burden of proving a prima facie case (whether or not the *PNB* presumption or other evidence is invoked to show anticompetitive effect)
     - You can think of the burden here as the *burden of production*, that is, the plaintiff must adduce sufficient evidence to allow the trier of fact to find each and every (contested) essential element of a Section 7 violation
     - Essential elements
       1. The relevant product market
       2. The relevant geographic market
       3. The requisite anticompetitive effect in the relevant market

     Also need to satisfy the interstate commerce element, but this is rarely contested
  2. If the plaintiff satisfies this burden, the *burden of production* shifts to the defendants to adduce evidence sufficient to rebut *PNB* presumption and create a genuine issue for the trier of fact
     a. Negate the plaintiff's market definition
     b. Rebut the predicates of the *PNB* presumption and other evidence of gross anticompetitive effect
     c. If applicable, provide evidence of one or more downward-pricing pressure defenses

[1] United States v. Baker Hughes Inc., 908 F.2d 981, 982-83 (D.C. Cir. 1990).

Baker-Hughes[1]

- Uses a three-step burden shifting approach:
  3. *The burden of persuasion* then returns to plaintiff to prove in light of all of the evidence in the record that the merger is reasonably probable to have an anticompetitive effect in the relevant market

Market Definition Generally

Some basic points

- Question of fact
  - The determination of the boundaries of the relevant market is a question of fact
- Burden of proof on the plaintiff
  - Bears the burden of proving a *prima facie* relevant market in Step 1 of *Baker Hughes*
    - Essentially a burden of production
  - Bears the *burden of persuasion* on relevant market in Step 3 of *Baker Hughes*
- Motion to dismiss: *Twombly* applies
  - The complaint must contain sufficient factual allegations to make the alleged market definition plausible under the market definition standards in the case law
  - The plaintiff's failure in a complaint to adequately plead the factual predicates of market definition will result in the complaint's dismissal under FRCP 12(b)(6)
  - However, *Twombly* challenges are typically not brought where—
    1. The defendants are not likely to ultimately challenge the plaintiff's definition of the relevant market, *or*
    2. It is easy for the plaintiff to replead the complaint and supply the missing factual allegations to support its alleged market definition
  - More generally, motions to dismiss are rare in preclosing merger antitrust challenges
    - Merging parties want to proceed to the merits as quickly as possible

Some basic points

- Forward looking
  - Since merger antitrust law is forward-looking—that is, it makes unlawful mergers and acquisitions that are likely to lessen competition substantially in the future as compared to what competitive conditions would have been absent the transaction—market definition equally must be forward-looking
  - Product market definition, for example, should account for new products that shortly will be released or old products that will soon be obsolete
  - Likewise, geographic market definition should account for the construction of new facilities, changing transportation modes or patterns, or new methods of purchasing or distribution
- Appeal: As a finding of fact—
  - District court findings on market definition are reviewed under the *clearly erroneous rule*
    - To set aside, requires the reviewing court, after considering the entire evidence, to have a definite and firm conviction that a mistake has been committed even though some evidence supports the finding
  - FTC findings are reviewed under the *substantial evidence rule*
    - Must uphold where the supporting evidence is "more than a mere scintilla" and a reasonable mind could accept it as adequate to support the finding

Market definition: A debate

- Is the proof of a relevant market really necessary?
  - Some commentators argue that direct evidence of anticompetitive harm should obviate the need to prove the relevant market
    - For example, say the challenge is to a consummated merger and that the plaintiff can prove the merger resulted in a substantial price increase
  - Opponents of this view argue that the terms of Section 7 explicitly require the showing of the product and geographic dimensions of a relevant market
  - Views of the DOJ and FTC
    - The DOJ and FTC agree that the determination of a relevant market is not necessary in order to prove the requisite anticompetitive effect in the vast majority of mergers
    - BUT they have not been willing to test whether they can dispense with market definition in court
  - Courts
    - Have not had to decide a case precisely on point
    - BUT some courts have held that the rigor with which a relevant market needs to be defined may depend on whether market shares will play a significant role in the competitive effects analysis
  - WDC view
    - Courts will require proof of a relevant market in all Section 7 cases
    - BUT will not be too demanding on the dimensions of the market if market shares and market concentration statistics are not being using to prove anticompetitive effect

Product Market Definition
Part 1: The judicial tests

Introduction

- Two dimensions
  - Every relevant market has two dimensions:
    - *The product dimension*: The products within the market (the *relevant product market*)
    - *The geographic dimension*: The geographic area covered by the market (the *relevant geographic market*)
- The relevant market in H&R Block/TaxACT
  - The parties stipulated that the relevant geographic market was the United States
    - It is common for the parties to stipulate to one dimension of the relevant market
  - BUT the dimension of the product market was the central issue in the case

One or both market dimensions almost always will be a major issue in any litigated case. Empirically, disproof of the plaintiff's market definition is the major reason plaintiffs fail in merger antitrust cases.

We will focus on product market definition in this unit and geographic market definition in the next unit

Product markets generally

- What is a relevant product market?
  - A relevant product market defines the product boundaries within which competition meaningfully exists[1]
  - Although discussed in terms of products, the product market concept equally applies to services or a mixed combination of a product with accompanying services
- Modern concept of relevant markets
  - Products in the relevant market should exert significant price or other competitive pressure on one another
    - For example, an increase in the price of one of the products in the market should cause customers to switch to other products in the market, and this loss of sales should result in the price increase being unprofitable
  - On the other hand, products outside the relevant market should not exert significant price or other competitive pressure on products within the market
    - For example, an increase in the price of one of the products in the market should not cause customers to switch substantially to other products outside of the market and hence should not affect the profitability of the price increase

[1] United States v. Continental Can Co., 378 U.S. 441, 449 (1964).

Product market tests

- Two complementary tests in judicial analysis:
  1. The "outer boundaries" and "practical indicia" criteria of *Brown Shoe*[1]
  2. The hypothetical monopolist test of the Merger Guidelines
- The Merger Guidelines
  - The 1982, 1992, and 2010 Merger Guidelines recognized only the hypothetical monopolist test for defining markets
  - BUT the 2023 Merger Guidelines provide four methods for defining markets:[2]
    1. Direct evidence of substantial competition between the merging parties
    2. Direct evidence of the exercise of market power
    3. The *Brown Shoe* "practical indicia"
    4. The hypothetical monopolist test

Show only that a market exists, but do not define market boundaries

Subject to problems to be discussed in the next section

[1] Brown Shoe Co. v. United States, 370 U.S. 294, 325 (1962).
[2] U.S. Dep't of Justice & Fed. Trade Comm'n, Merger Guidelines § 4.3 (rev. Dec. 18, 2023); *see* U.S. Dep't of Justice & Fed. Trade Comm'n, Horizontal Merger Guidelines § 4 (rev. Aug. 19, 2010).

The *Brown Shoe* Tests

Brown Shoe "outer boundaries" test

- *Brown Shoe*:

> The outer boundaries of a product market are determined by **the reasonable interchangeability of use** or the **cross-elasticity of demand** between the product itself and substitutes for it.[1]

  - This remains the prevailing definition of a relevant product market in the case law
  - Key indicia—
    1. Reasonable interchangeability of use
    2. [High] cross-elasticity of demand
  - Modern usage
    - Reasonable interchangeability of use has largely come to mean high cross-elasticity of demand and is no longer a distinct "outer boundary" factor
    - NB: When courts use "cross-elasticity of demand," they almost never have in mind the technical quantitative definition—they think about it more as a qualitative measure of substitutability

[1] Brown Shoe Co. v. United States, 370 U.S. 294, 325 (1962) (emphasis added).

Brown Shoe "outer boundaries" test

- General idea
  - In a horizontal merger, the relevant product market should—
    1. *Start* with the overlapping substitute products of the merging firms
    2. *Contain* all products that exhibit a reasonable interchangeability of use and a high cross-elasticity of demand with one another
    3. *Exclude* all products that lack reasonable interchangeability of use and have a low cross-elasticity of demand with products in the relevant product market

The Brown Shoe *test is intended to isolate all and only those products that exert significant price-constraining force on the overlapping products of the merging parties*

[1] Brown Shoe Co. v. United States, 370 U.S. 294, 325 (1962) (emphasis added).

Brown Shoe "practical indicia" test

- Submarkets and "practical indicia" of relevant markets

> However, within this broad market [defined by reasonable interchangeability of use and high cross-elasticity of demand], well-defined **submarkets** may exist which, in themselves, constitute product markets for antitrust purposes. The boundaries of such a submarket may be determined by examining such **practical indicia** as
>
> [1] industry or public recognition of the submarket as a separate economic entity,
>
> [2] the product's peculiar characteristics and uses,
>
> [3] unique production facilities,
>
> [4] distinct customers,
>
> [5] distinct prices,
>
> [6] sensitivity to price changes, and
>
> [7] specialized vendors.[1]

[1] Brown Shoe Co. v. United States, 370 U.S. 294, 325 (1962).

Brown Shoe "practical indicia" test

- The *Brown Shoe* list of "practical indicia" was not intended to be exhaustive
  - Examples of additional factors that courts have considered—
    1. Relative prices of products in the candidate market
       - A Timex and a Rolex both tell time, but they are unlikely to exhibit a high cross-elasticity of demand with on another
    2. Different functional attributes that might appeal to different classes of buyers
       - Consider the functional difference between a Ferrari 812 (0-60 mph: 2.8 sec.; top speed: 211 mph) and a Nissan Versa S (0-60 mph: 10.2 sec.; top speed: 119 mph)
       - Differences in functionality are often accompanied by differences in price (Ferrari 812 base price: $ 401,500; Nissan Versa S base price: $15,080)
    3. Differences in reputation
       - Even without functional differences
    4. Switching costs
       - Indicates practical hurdles to reasonable interchangeability of use or high cross-elasticity
    5. Price discrimination
       - Indicates barriers that prevent arbitrage and isolate customers into distinct markets
    6. Intellectual property rights
       - Provides legal barriers to entry and competition

Brown Shoe "practical indicia" test

- Major problems with the *Brown Shoe* "practical indicia" test
  1. *Vague and subjective factors*: The indicia are not precisely defined, leading to high levels of subjectivity in their application
  2. *Lack of metrics*: There is no clear indication of how each factor should be measured or weighted relative to the others
  3. *Unclear threshold for market definition*: The framework does not specify how many indicia need to be satisfied to define a market or submarket
  4. *Undefined methodology*: The framework fails to provide a structured or quantitative approach for applying the indicia to define market boundaries
  5. *Lack of economic foundation*: The indicia are not grounded in economic theory, potentially leading to economically unsound market definitions
  6. *Insufficient focus on consumer substitution*: The indicia do not prioritize consumer substitution patterns, which are central to determining competitive constraints
  7. *Susceptibility to manipulation*: Agencies or industry participants can strategically present evidence to fit or contradict the indicia, skewing market definitions
  8. *Inconsistent outcomes*: Due to the subjective nature of the indicia, different courts and analysts may define markets differently even with the same set of facts

Result: An enormous amount of confusion, bad analysis, and bad decisions

Brown Shoe submarkets: The modern view

- Submarkets (surprisingly) remain a valid concept in antitrust law
  - Courts still employ the concept, but with decreasing regularity
- But most courts view submarkets as no different than a relevant market (and no longer use the term)
  - Under this view, the *Brown Shoe* "practical indicia" are simply circumstantial qualitative evidence probative of reasonable interchangeability of use and cross-elasticity of demand
  - Modern courts routinely rely on the *Brown Shoe* factors to define the relevant product market in merger and other antitrust cases
    - BUT typically confirm with a hypothetical monopolist test

Brown Shoe submarkets: The modern view

- Merger Guidelines
  - The 1982, 1992, and 2010 Merger Guidelines have rejected submarkets as distinct from markets
  - BUT the 2023 Merger Guidelines appears to attempt to revive them as a distinct relevant market concept:

> A relevant market can be identified from evidence on observed market characteristics ("practical indicia"), such as industry or public recognition of the submarket as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors. Various practical indicia may identify a relevant market in different settings.[1]

[1] U.S. Dep't of Justice & Fed. Trade Comm'n, Merger Guidelines § 4.3 (rev. Dec. 18, 2023) (method 3 of 4 for defining markets).

The Hypothetical Monopolist Test

Hypothetical monopolist test (HMT)

- The original idea
  - The relevant market should be—
    1. the *smallest group of products* containing the products of interest (say, the products of the merging firms in a horizontal merger)
    2. in which a hypothetical monopolist of those products *could raise prices profitably* over the current level
    3. by at least "*small but significant nontransitory*" amount
  - Observations
    - Introduced in the 1982 DOJ Merger Guidelines
    - Designed to introduce some economic sense and analytical rigor into market definition
    - Continued in the subsequent merger guidelines (although with some important modifications)
    - "SSNIP" = "Small but significant nontransitory increase in price"
      - Under the Merger Guidelines, a SSNIP is usually taken to be a price increase of 5% for at least one year
  - General idea
    - If a hypothetical monopolist—effectively the merger of all firms in the candidate market—could not anticompetitively affect prices, then a fortiori a merger of only two firms in the candidate market could not affect prices
    - Accordingly, the candidate market should be accepted as a relevant market only if a hypothetical monopolist could raise prices profitably
      - Is this a *necessary condition* or a *necessary and sufficient condition* for a relevant market?

HMT: Example

- Example:
  - Say a hypothetical monopolist—
    - Faces an (inverse) demand: p = 10 – ½ q
    - Has no fixed costs and constant marginal costs of 4 per unit of production
    - Prevailing (premerger) price: $p_1 = 5$

    Question: If the current market price is 5, would a SSNIP—usually taken to be 5%—be profitable?

  - We know how to do this:
    - Apply the incremental profitability test we examined in Unit 8 to determine if the gross loss in profits from the lost marginal sales are outweighed by the gross gain in profits from the higher profit margins earned on the retained inframarginal sales
    - Steps
      1. Set up the problem with what you know
      2. Figure out what you need
      3. Solve for the variables you need using the parameters given in the problem and the demand curve
      4. Solve for net incremental profits

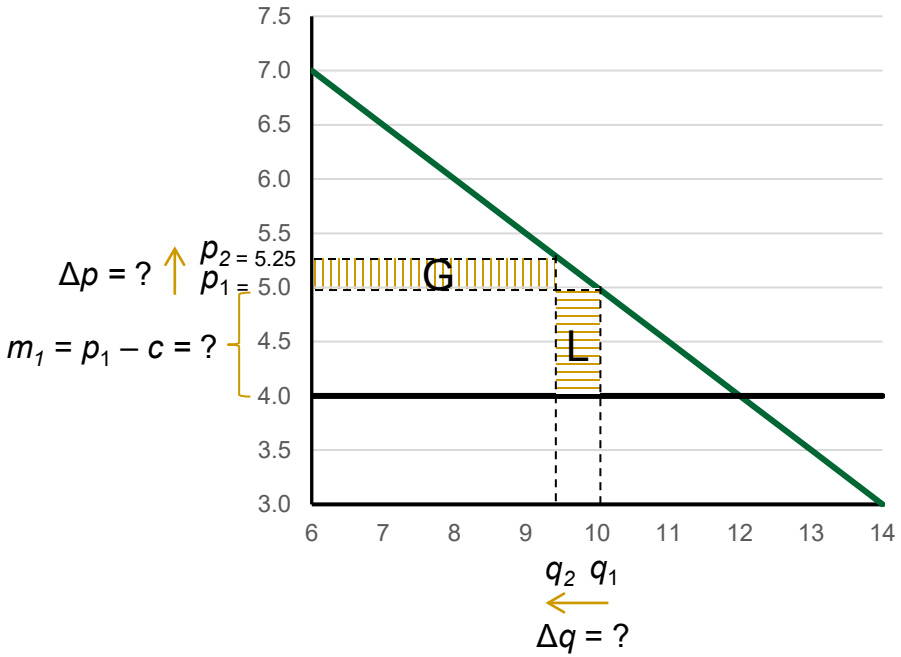
If incremental profits are positive, the hypothetical monopolist can profitably increase price by 5% and the product grouping satisfies the HMT

HMT: Example

- Step 1. Set up the problem with what you know:
  - (Inverse) demand: p = 10 – ½ q
  - Prevailing (premerger) price: $p_1 = 5$
  - SSNIP = 5%
  - Constant marginal cost c = 4

HMT: Example

- Step 1. Set up the problem:
  - (Inverse) demand: $p = 10 - \frac{1}{2} q$
  - Prevailing (premerger) price: $p_1 = 5$
  - SSNIP = 5%
  - Constant marginal cost $c = 4$



Step 2: Figure out what you need:

1. Need the gross gain on inframarginal sales that will be retained (Area G):

   Area G = price increase (Δp)
   times inframarginal sales (q_2)
   $= \Delta p q_2$

2. The gross loss on marginal sales that will be lost (Area L):

   Area L = gross margin on marginal sales (m_1)
   times (lost) marginal sales (Δq)
   $= m_1 \Delta q$

So need q_1, q_2, Δq, Δp, p_2, and m_1

HMT: Example

- Set up the problem:
  - (Inverse) demand: $p = 10 - ½\ q$
  - Prevailing (premerger) price : $p_1 = 5$
  - SSNIP = 5%
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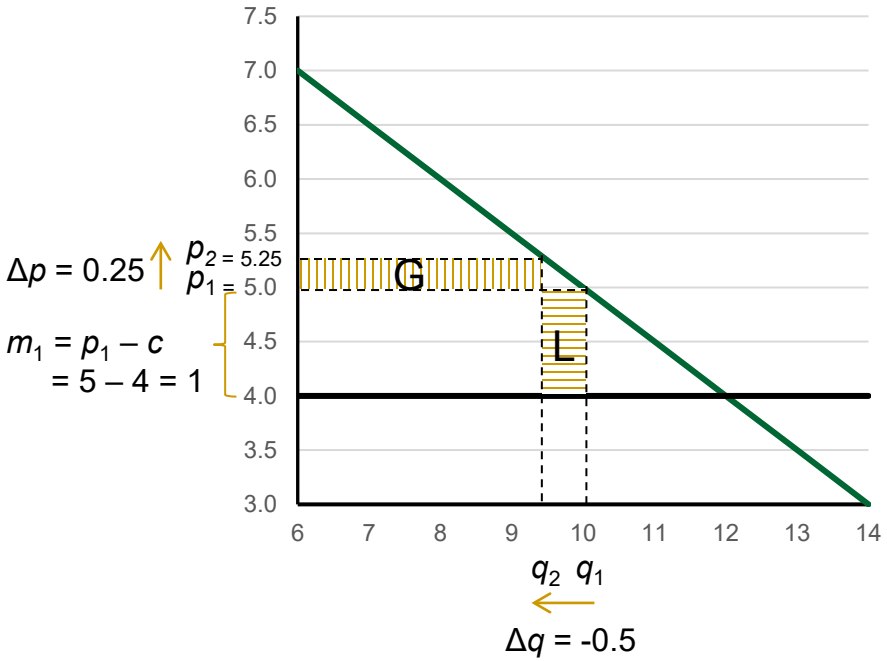


Step 3. Solve for the variables you need using the parameters given in the problem and the demand curve:

$q = 20 - 2p$ (from the inverse demand curve)

$q_1 = 10$ (when $p_1 = 5$)

$\Delta p = 0.25$ (applying 5% SSNIP to $p_1 = 5$)

$p_2 = 5.25$ (= $p_1 + \Delta p$)

$q_2 = 9.5$ (from demand curve with $p_2 = 5.25$)

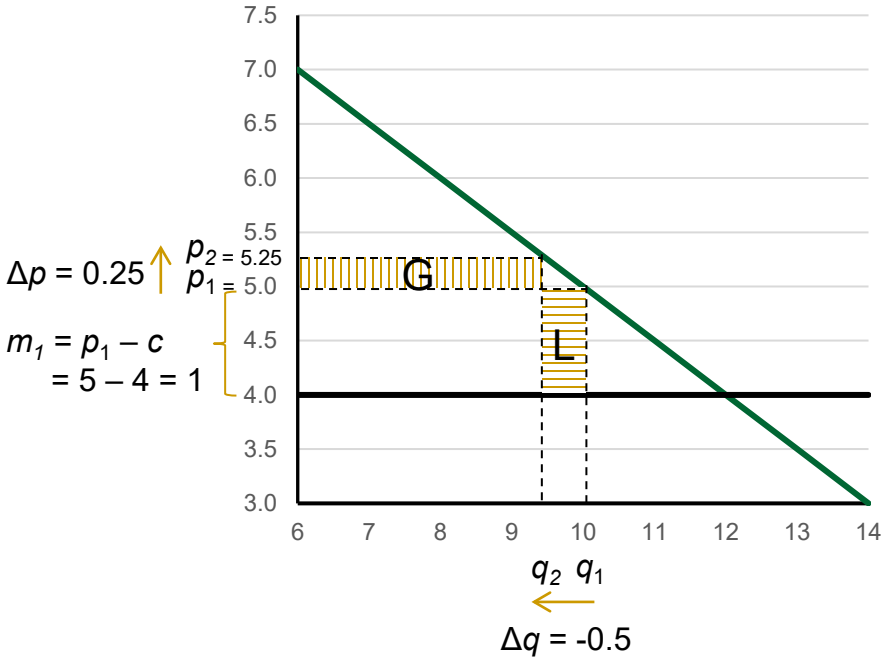
$\Delta q = q_2 - q_1 = 9.5 - 10 = -0.5$

$m_1 = p_1 - c = 5 - 4 = 1$

HMT: Example

- Set up the problem:
  - (Inverse) demand: $p = 10 - \frac{1}{2} q$
  - Starting point: $p_1 = 5$
  - SSNIP = 5%
  - Constant marginal cost $c = 4$

$q = 20 - 2p$ (from the inverse demand curve)
$q_1 = 10$ (when $p_1 = 5$)
$\Delta p = 0.25$ (applying 5% SSNIP to $p_1 = 5$)
$p_2 = 5.25$ (= $p_1 + \Delta p$)
$q_2 = 9.5$ (from demand curve with $p_2 = 5.25$)
$\Delta q = q_2 - q_1 = 9.5 - 10 = -0.5$
$m_1 = p_1 - c = 5 - 4 = 1$



Step 4. Solve for net incremental profits

Area G = $q_2 \Delta p = (9.5)(0.25) = 2.375$
Area L = $m_1 \Delta q = (1)(-0.5) = -0.5$

Incremental profits = Area G – Area L
= 2.375 – 0.5 = 1.875

Therefore, a price increase of 5 percent above the current level is profitable and the HMT is satisfied

HMT: Recap

- The question
  - Can a hypothetical monopolist of a group or products (a *candidate market*) profitably increase the price of those products by a small but significant nontransitory amount (a *SSNIP*)?
- The test: If the incremental profits from the price increase are—
  - *Positive*: The price increase is profitable and the HMT is satisfied
  - *Negative*: The price increase is unprofitable and the HMT fails
- The accounting: Incremental profits
  - = The gain from the increased margin (Δp) on the inframarginal sales (q_2) *minus* the dollar loss of margin ($p_1 - c$) on the marginal sales (Δq):

$$= \underbrace{\Delta p \times q_2}_{\text{Gain on inframarginal sales}} - \underbrace{(p_1 - c) \times \Delta q}_{\text{Loss on marginal sales}}$$

- The data
  - The statement of the problem will give you p_1, q_1, c, the SSNIP, and some indication of how demand changes with an increase in price
  - Those variables will permit you to calculate Δp, q_2, Δq, and net incremental profits

Hypothetical monopolist test

- Example—Uniform price increase on all products in the candidate market

> Consider blue cars (a homogeneous product) as a candidate market. Say blue cars are priced at $20,000 per car, cost $17,000 per car to produce, and sell 50,000 cars per year. If the price is increased by 5% on all blue cars, blue cars will only sell 45,000 cars per year. Are blue cars a relevant market under the hypothetical monopolist test for a 5% SSNIP?

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Data		
Unit sales (q1)	50,000	From problem
Price (p1)	$20,000	From problem
Unit cost (c)	$17,000	From problem
$Margin ($m)	$3,000	Calculated
Retained sales (q2)	45,000	From problem
Lost (marginal) sales (Δq)	5,000	Calculated
%SSNIP	5%	From problem
$SSNIP	$1,000	Calculated
		Calculated

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Incremental profit on inframarginal sales (area G)		
Inframarginal sales (q2)	45,000	
$SSNIP	$1,000	
Incremental gross profits	$45,000,000	q2 times $SSNIP
Incremental loss of profit on marginal sales (area L)		
Marginal sales (Δq)	-5,000	
$Margin ($m)	$3,000	
Incremental gross losses	-$15,000,000	$m times Δq
Incremental net profits	**$30,000,000**	Difference

Hypothetical monopolist test

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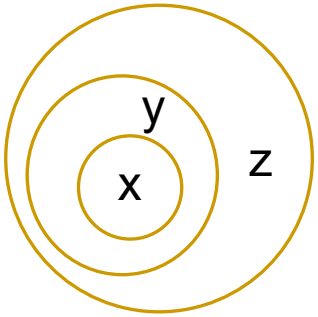
Incremental gross profits	$45,000,000	q2 times $SSNIP
Incremental loss of profit on marginal sales (area L)		
Marginal sales (Δq)	-5,000	
$Margin ($m)	$3,000	
Incremental gross losses	-$15,000,000	$m times Δq
Incremental net profits	**$30,000,000**	Difference

- Incremental net profits are positive, so blue cars are a relevant market under the hypothetical monopolist test
- This is a *"brute force" accounting* implementation of a uniform SSNIP test

HMT: Merger Guidelines Algorithm[1]

1. Start with the product of a merging firm as the starting candidate market.
   - In practice (and in the courts), the starting market may include multiple products selected for reasons outside the HMT test (such as industry recognition)
2. Ask whether a hypothetical monopolist of the candidate market could profitably increase price by a SSNIP. If so, then that candidate market satisfies the HMT. If not, go to Step 3.
3. Expand the market to include the next closest substitute to the products in the prior candidate market and repeat Step 2.



1. Start with candidate market x. Apply HMT.
   If HMT is satisfied, this is the relevant market
   If HMT fails, expand market to y
2. Apply HMT to new candidate market
   If HMT is satisfied, this is the relevant market
   If HMT fails, expand market to z
3. Apply HMT to new candidate market
   If HMT is satisfied, this is the relevant market
   If HMT fails, expand market . . .

[1] 1992 Horizontal Merger Guidelines § 1.11.

HMT: Some questions

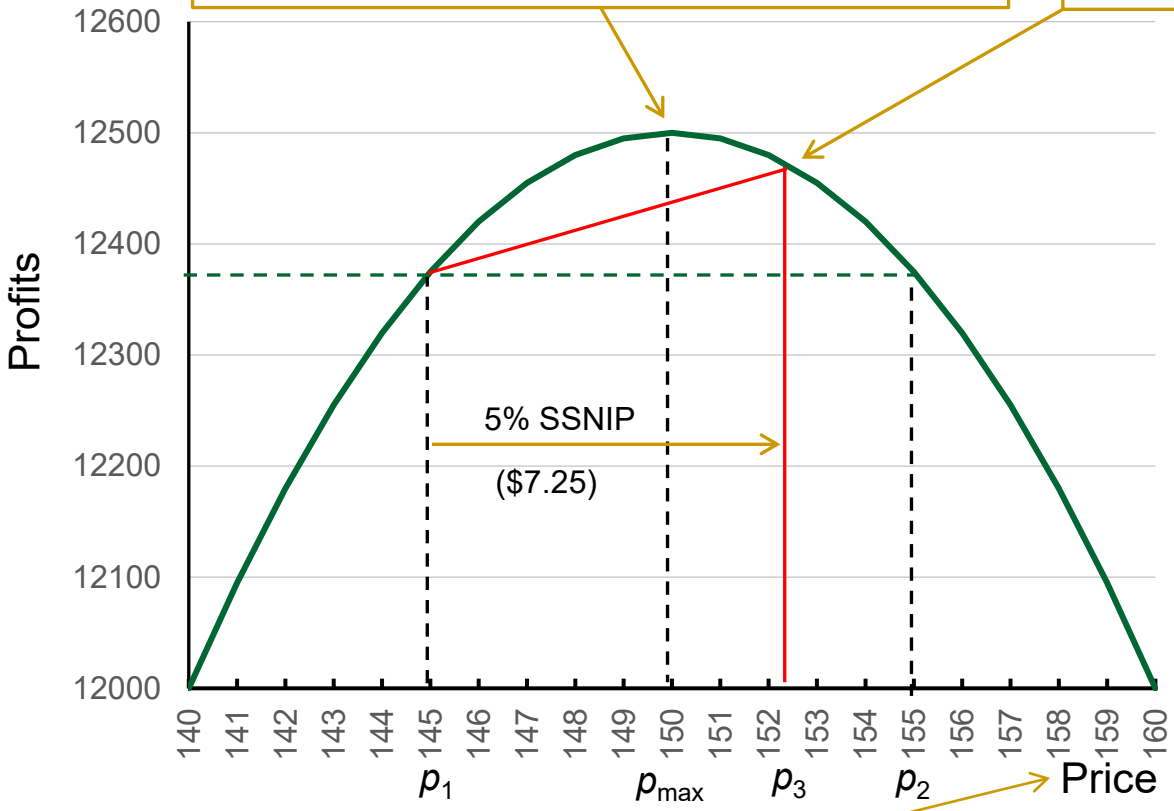
1. Should the test be whether the SSNIP is profitable for the hypothetical monopolist (the *profitability* or *breakeven test*) or whether the hypothetical monopolist's profit-maximizing price is equal to or greater than the SSNIP (the *profit-maximization test*)?
   - The practice under the 1982 and 1992 Merger Guidelines in the agency and the courts was to use the profitability test
     - The profitability test is sometimes called the *breakeven test*
     - Moreover, notwithstanding that change in verb from "could" to "would" in the 1992 Merger Guidelines, the agencies did not change from a profitability test to a profit-maximization test either in their investigations or in their briefs in court
   - After the 2010 Merger Guidelines were released, the DOJ and FTC chief economists began to emphasize the profit-maximization test as the proper one in economic analysis as well as the one prescribed by the language of the Guidelines
     - The 2023 Merger Guidelines continue to state the HMT in terms of the profit-maximization test
   - Practice in the courts
     - As the courts were adopting the hypothetical monopolist test in the 1980s and early 1990s, the 1982 and 1992 guidelines were in effect
     - As a result, the agencies urged the courts to adopt, and the courts did adopt in fact, the profitability version of the hypothetical monopolist test
     - Today, the profitability test remains the judicial test in most courts

HMT: Some questions

- *Example*: HMT profitability and profit maximization tests in a close-to-monopolized market

The HMT profit maximization test is not satisfied—Hypothetical monopolist would price at $150, less than SSNIP price of $152.25

The HMT profitability test is satisfied—a 5% SSNIP would be profitable



Model:
$q = 1000 - 5p$
$p_1 = 145$
$q_1 = 275$
$F = 0$
$mc = 100$
$\pi_1 = 12{,}375$

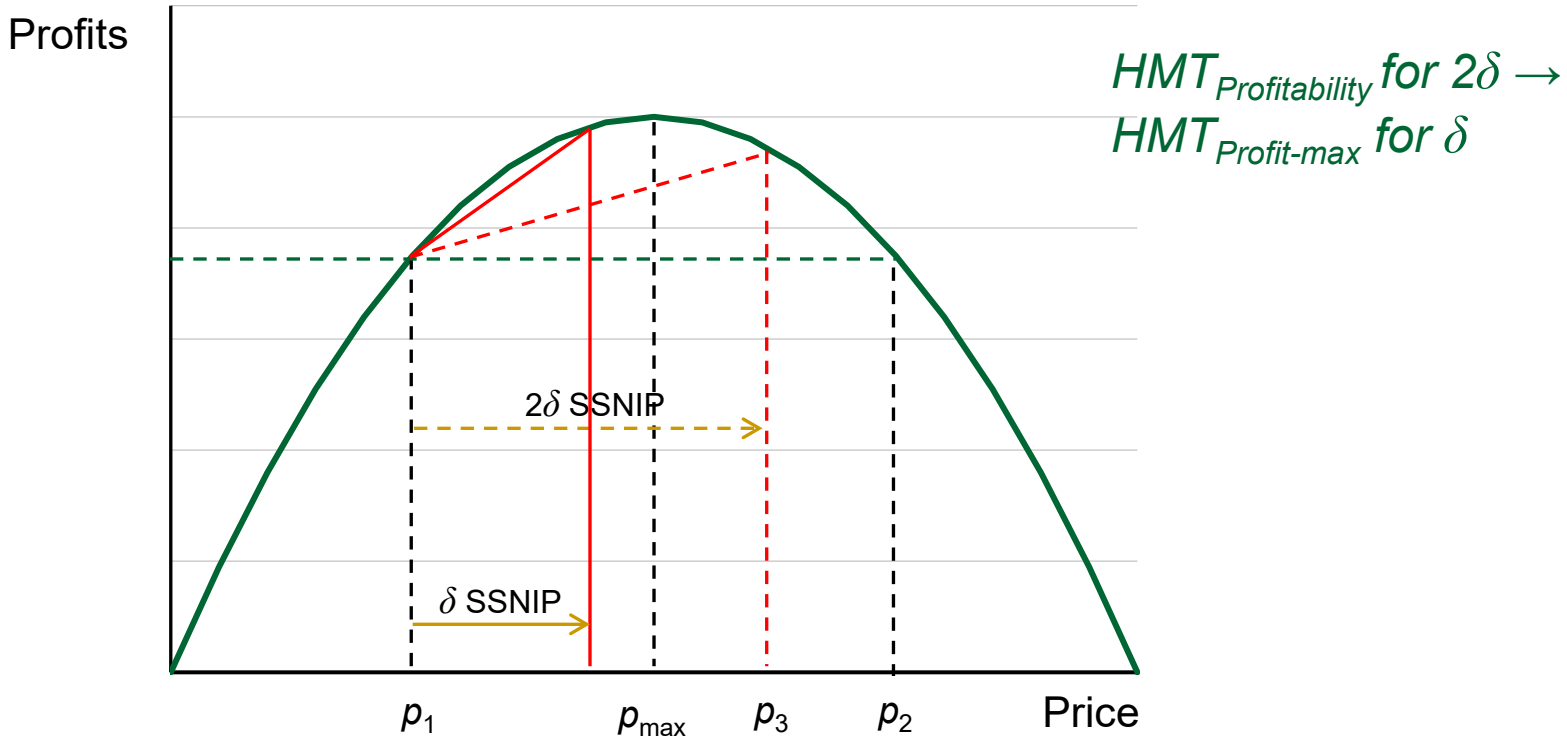
$p_{max} = 150$
$q_{max} = 250$
$\pi_{max} = 12{,}500$

%SSNIP = 5%
$SSNIP = $7.25
$p_2 = 152.25$
$q_2 = 238.75$
$\pi_2 = 12{,}475$

NB: The x-axis is *price*, not quantity

HMT: Some questions

- Testing for profit-maximization
  - *Proposition*: Given the symmetry in the profit curve when demand is linear, a candidate market will satisfy the profit-maximization test for a SSNIP of δ if the candidate market satisfies the profitability test of 2δ



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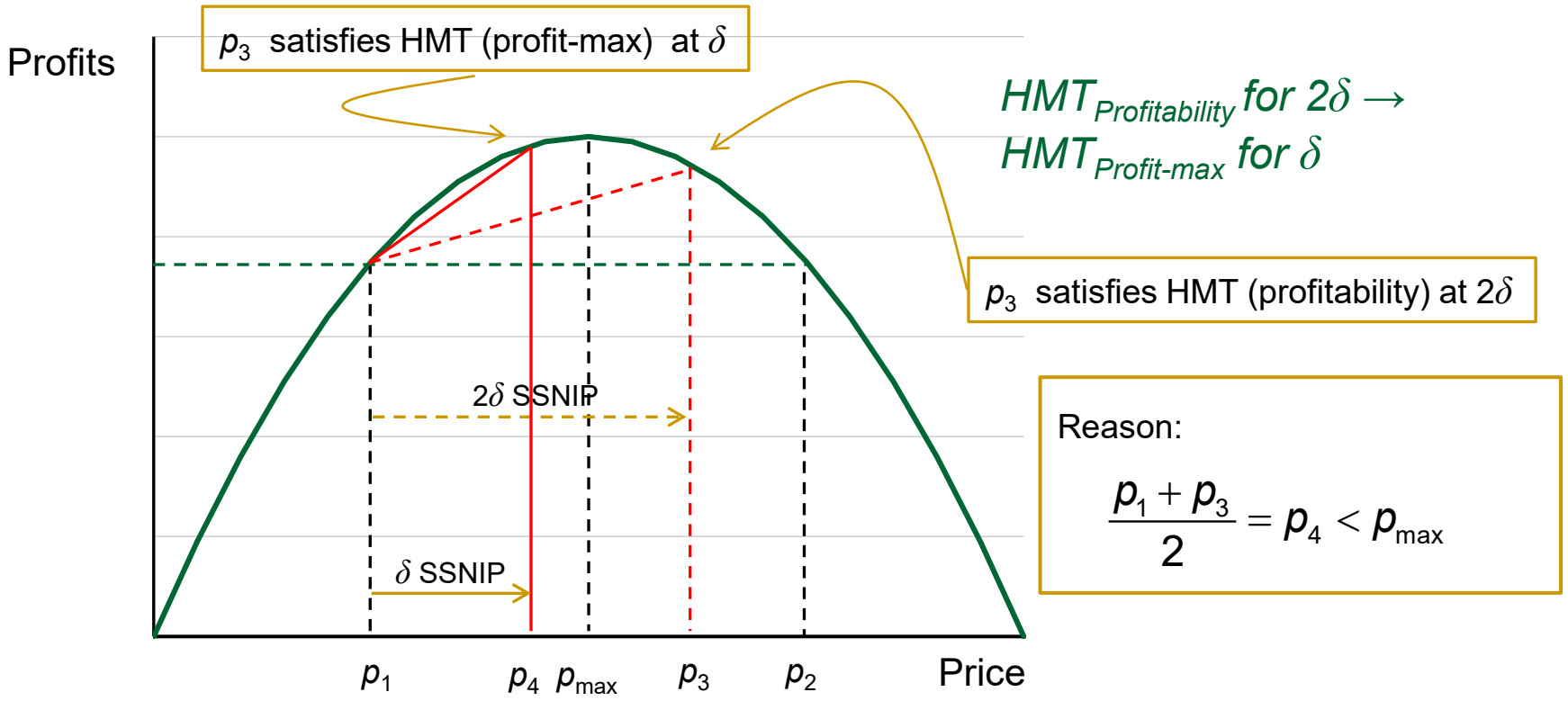


HMT: Some questions

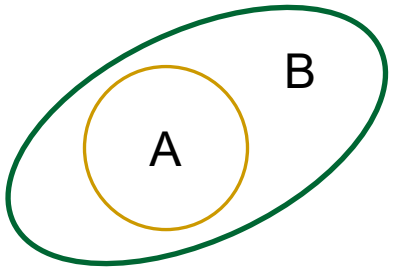
- Profitability v. profit-maximization: Does it matter?
  - *Not really*: The profit-maximization test will fail only if the prevailing market price is within 5 percent of the monopolist's profit-maximizing price
    - Empirically, this should occur only rarely

In this course, the default is the profitability *version of the HMT although we will see the profit-maximization in some case studies*

HMT: Some questions

2. Uniform or selective SSNIP

- Should the hypothetical monopolist increase the prices of all products in the relevant market by the same percentage SSNIP or should the monopolist be allowed to selectively increase the prices of one or more products in the relevant market?
  - *The 1982 Merger Guidelines*: Required a uniform SSNIP
  - *The 1992 Merger Guidelines*: Allowed a selective SSNIP; the practice was to use a selective SSNIP when the product in question was already selectively priced under prevailing market conditions
  - *The 2010 and 2023 Merger Guidelines*: Allowed a selective SSNIP; the practice is to use a selective SSNIP when the product in question was already *or* could be selectively priced
- *Proposition*: If a candidate market satisfies the HMT, then any superset of that market will satisfy the HMT
  - Use selective pricing and keep the added products at their original price



If A satisfies the HMT, then A + B satisfies the HMT (just keep the B products at their original prices)

HMT: Some questions

3. Should the relevant market identified by the HMT be the smallest market that satisfies the test or should any (reasonable) candidate market that satisfies the test be a relevant market?
   - The 1982 and 1992 Merger Guidelines imposed a “smallest market” requirement
     - In principle, this makes the relevant market unique
   - The 2010 and 2023 Merger Guidelines rejected the smallest market requirement
     - Also rejects unique relevant markets and allows multiple relevant markets for the same pair of overlapping merger products
   - The courts have never applied the HMT strictly algorithmically and have accepted larger relevant markets that also satisfied the *Brown Shoe* tests
     - We see this in H&R Block/TaxAct
     - Courts, however, do sometimes state that they do apply the smallest market principle
   - NB: When using a selective or one-product SSNIP, any superset of a relevant market will satisfy the HMT profitability test

HMT: Some questions

4. Is passing the HMT a necessary or a necessary and sufficient condition for a relevant market?
   - Originally, the HMT was widely considered by the agencies and the bar as a necessary and sufficient condition
   - But courts did not accept the HMT as a sufficient test when the product grouping did not comport with the "commercial realties" of a market—typically when:
     - Close substitutes were excluded, *or*
     - The industry did not recognize the product grouping as a market
   - The 2010 Horizontal Merger Guidelines implicitly weakened the HMT to more of a necessary test when they eliminated the smallest market requirement:

> The hypothetical monopolist test ensures that markets are not defined too narrowly, but it does not lead to a single relevant market. The Agencies may evaluate a merger in any relevant market satisfying the test, guided by the overarching principle that the purpose of defining the market and measuring market shares is to illuminate the evaluation of competitive effects. Because the relative competitive significance of more distant substitutes is apt to be overstated by their share of sales, when the Agencies rely on market shares and concentration, they usually do so in the smallest relevant market satisfying the hypothetical monopolist test.[1]

[1] 1992 Horizontal Merger Guidelines § 4.11.

HMT: Some questions

5. Is passing the HMT even a necessary condition for a relevant market?

Not anymore

- *2023 Merger Guidelines*: The 2023 Merger Guidelines abandoned the HMT as the sole means of defining markets and adopted three other methods
- *Courts*: Although courts typically use the HMT in analyzing markets, some courts have held that an HMT is not necessary[1]

[1] *See, e.g.*, Illumina, Inc. v. FTC, 88 F.4th 1036, 1050 n.8 (5th Cir. 2023) (holding that Commission was not required to use the hypothetical monopolist test to define the relevant product market); United States v. United States Sugar Corp., No. CV 21-1644 (MN), 2022 WL 4544025, at *24 (D. Del. Sept. 28, 2022) ("The Court recognizes the important role that the hypothetical monopolist test plays in antitrust cases but, regardless of how articulated, the process of identifying the relevant geographic market must conform to the economic realities of the industry to recognize competition where competition exists. Any rigid application of the hypothetical monopolist test must yield to the economic realities of the industry. Here, the economic reality is that sugar flows easily across the country from areas of surplus to deficit in response to prices and demand."), *aff'd*, 73 F.4th 197 (3d Cir. 2023). Courts hold similarly in Section 2 cases. See, e.g., United States v. Google LLC, No. 20-CV-3010 (APM), 2024 WL 3647498, at *68 (D.D.C. Aug. 5, 2024) ("There is no legal requirement that a plaintiff supply quantitative proof to define a relevant market.")

Market Definition
Part 2: Qualitative evidence

Evidence

- Types of probative evidence
  1. Qualitative evidence probative of consumer substitutability: cross-elasticity of demand, diversion, reasonable interchangeability of use
     - *Brown Shoe* "practical indicia"-type evidence
  2. Quantitative evidence implementing the Hypothetical Monopolist Test (HMT)
- Sources of evidence
  1. Business documents of the merging parties and other companies
  2. Testimony of fact witnesses
  3. Analysis by expert economists
- Some key questions
  1. Which products does the company regard as its primary competitors when setting prices, deciding on products attributes or improvements, or considering strategy?
  2. Which products does the company track for prices, product offering, product attributes?

We are going to look first at the qualitative evidence in H&R Block

Evidence: DDIY belong in the market

1. When setting prices and product attributes, the merging parties—
   - Look almost exclusively at other DDIY firms and rarely look at other firms
   - Rarely consider loss of DDIY customers to other tax preparation methods
2. TaxACT CIM identified HRB and TurboTax as the main competitors
   - A "CIM" is a *Confidential Information Memorandum*—a sales document prepared by the investment bankers designed to attract interest at the highest price
   - Can be a serious problem for the antitrust defense if not carefully written (as here)
3. TaxACT strategy documents: "Freemium" strategy designed to attract customers from other DDIY competitors (especially HRB and TurboTax)

Evidence: Other methods do not belong

1. Consumer experience is very different from DDIY experience
   - Different technology
   - Different prices
   - Different convenience levels
   - Different time investments
   - Different type of interaction by the customer with the product
2. DDIY prices differ significantly from assisted preparation
   - TurboTax: $55
   - HRB: $25 (average)
   - TaxACT: Freemium

   } DDIY average price: $44.13
   - Assisted: $150-$200 (not within SSNIP)

But note that the court ignored the significant percentage differences in prices of products within the DDIY candidate market

3. No detectable switching based on small changes in relative price
   - *Testimony*: Switching that does occur appears the result of changes in tax condition
     - Not price driven
   - HRB and third-party executives testified that they do not believe that their DDIY compete closely with manual or assisted

Conclusion

Qualitative evidence indicates that DDIY tax software products are the relevant product market

Market Definition
Part 3: Quantitative evidence

Experts

- DOJ: Frederick R. Warren-Boulton
  - Ph.D in economics (Princeton University)
  - Private consultant (Ankura)
  - Formerly ATD chief economist
  - Expert witness in multiple cases

- Merging parties: Christine Meyer
  - Ph.D in economics (MIT)
  - Private consultant (NERA)
  - First merger case as a testifying expert

Federal Rules of Evidence

- Rule 602: General rule

Called a *percipient witness* or a *fact witness*

"A witness may testify to a matter only if evidence is introduced sufficient to support a finding that the witness has *personal knowledge* of the matter."

- Rule 702: Exception for expert opinion evidence[1]

Personal qualifications:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify *in the form of an opinion* or otherwise if:

[1] Rule 702 was amended in 2000 in response to Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993), and to the many cases applying *Daubert*, including Kumho Tire Co. v. Carmichael, 526 U.S. 137 (1999). In *Daubert* the Court charged trial judges with the responsibility of acting as gatekeepers to exclude unreliable expert testimony. In *Kumbo*, the Court clarified that this gatekeeper function applies to all expert testimony, not just testimony based on science.

Federal Rules of Evidence

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- Rule 702: Exception for expert opinion evidence

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Relevance and helpfulness:

> (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;

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Sufficiency of data:

> (b) the testimony is based on sufficient facts or data;

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- Rule 702: Exception for expert opinion evidence

Personal qualifications:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify *in the form of an opinion* or otherwise if:

Relevance and helpfulness:

(a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;

Sufficiency of data:

(b) the testimony is based on sufficient facts or data;

Reliability of methods:

(c) the testimony is the product of reliable principles and methods; and

Federal Rules of Evidence

- Rule 602: General rule

> A witness may testify to a matter only if evidence is introduced sufficient to support a finding that the witness has *personal knowledge* of the matter.

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Reliability of application:

(d) the expert has reliably applied the principles and methods to the facts of the case.

Federal Rules of Civil Procedure

- Discovery: Rule 26(a)(2)—Disclosure of expert testimony: Requires—
  1. Disclosure of the identity of any witness who may be used at trial to present expert opinion testimony
  2. A written report prepared and signed by each testifying expert containing—
     a. a complete statement of all opinions the witness will express and the basis and reasons for them;
     b. the facts or data considered by the witness in forming them;
     c. any exhibits that will be used to summarize or support them;
     d. the witness's qualifications, including a list of all publications authored in the previous 10 years;
     e. a list of all other cases in which, during the previous 4 years, the witness testified as an expert at trial or by deposition; *and*
     f. a statement of the compensation to be paid for the study and testimony in the case

Federal Rules of Civil Procedure

- Departures from the expert report
  - New evidence not contained within the expert's report or testimony that significantly departs from the report is objectionable and the court may stricken from the record
- Observations
  - Rule 26(a)(2) expert reports are discovery products and are not given to the court as a matter of course
    - But can be submitted as a declaration in support of a preliminary injunction
      - Frequently, the expert submits a new declaration and not the entire expert report
  - Experts typically testify at trial
    - But courts can require written reports or written direct testimony
    - So you sometimes see expert reports in the record (although they are almost always under seal)

Federal Rules of Civil Procedure

- Usual procedure
  - Expert provides Rule 26(a)(2) report to opposing party
    - Usually both sides have experts—Depending on the case management order (CMO), initial reports may be exchanged simultaneously or provided sequentially (with the plaintiff going first with its report)
  - Opposing side takes the expert's deposition
  - Opposing expert submits rebuttal report
  - Expert submits a reply report responding to criticisms
    - NB: The reply report cannot introduce "new" analysis or opinions
      - *Query*: What does "new" mean in this context?
      - A frequently litigated issue
- Challenges to the admissibility of expert testimony
  - Based on the expert reports and deposition, the opposing side may file a pretrial motion in limine to exclude from trial some or all of the expert's analysis and opinions for failure to satisfy the requirement of Rule 702
    - This is called a *Daubert* motion
  - Usually decided on the papers, but the court can hear live testimony and question the expert at a *Daubert* hearing
    - Daubert hearings are common in jury trials and reasonably rare in bench trials

DOJ's expert evidence

- Warren-Boulton conclusions: The relevant product market is DDIY
  1. A hypothetical monopolist of DDIY products could profitably impose a uniform SSNIP profitably for all DDIY products, *and*
  2. Consumer substitution to assisted methods or pen-and-paper would be insufficient to defeat the SSNIP
- Organization of testimony
  1. Results of review of regular course of business documents
  2. Hypothetical monopolist test
  3. Merger simulation

DOJ's expert evidence

1. Started with DDIY as the initial provisional market
   - Functionally similar from user perspective
     - Fundamentally similar service
     - Similar user experience: User sits at computer and interacts with the DDIY software, which prompts user for information
   - Review of defendants' documents indicated they viewed DDIY products in same market
   - *Court*: Agreed that this is an appropriate starting place

Note that Warren-Boulton was not applying any formal economic tools here. He was simply looking at the practice as evidenced by what he reviewed in the documents and the (deposition) testimony. Still, he opined as an economist that economists look at these things when determining the starting point of the market definition analysis. Then the exercise becomes what else—if anything—to include in the market.

DOJ's expert evidence

2. Ruled out manual preparation (in the initial provisional market)
   - Some facts
     - "Gradual migration of customers to DDIY from more traditional methods like pen-and-paper"
     - DDIY growing in share while manual declining
   - But—
     - No correlation of switching to manual with changes in yearly average DDIY prices
     - IRS data indicates that switching to manual from DDIY appeared to be driven by decreases in tax return complexity, not relative prices
       - That is, a shift of the taxpayer's demand curve, *not* a shift along the demand curve

DOJ's expert evidence

3. Ruled out assisted preparation (in the initial provisional market)
   - Growth in DDIY not at expense of assisted (from documents and testimony)
   - HRB internal studies and IRS data indicate that switching from DDIY to assisted is correlated to increases in tax complexity
   - Using IRS switching data from 2004-2009, increase in relative price of assisted was not associated with—
     - Decreases in relative share of assisted, *or*
     - Increases in relative share of DDIY

Remember the relationships: If two products are substitutes, then an increase in the relevant price of one product will—

1. *Decrease the demand for that product,* and
2. *Increase the demand of the other product*

DOJ's expert evidence

- Used two quantitative tests to confirm DDIY as the relevant market
  1. A *critical loss implementation* of the hypothetical monopolist test
  2. *Merger simulation*

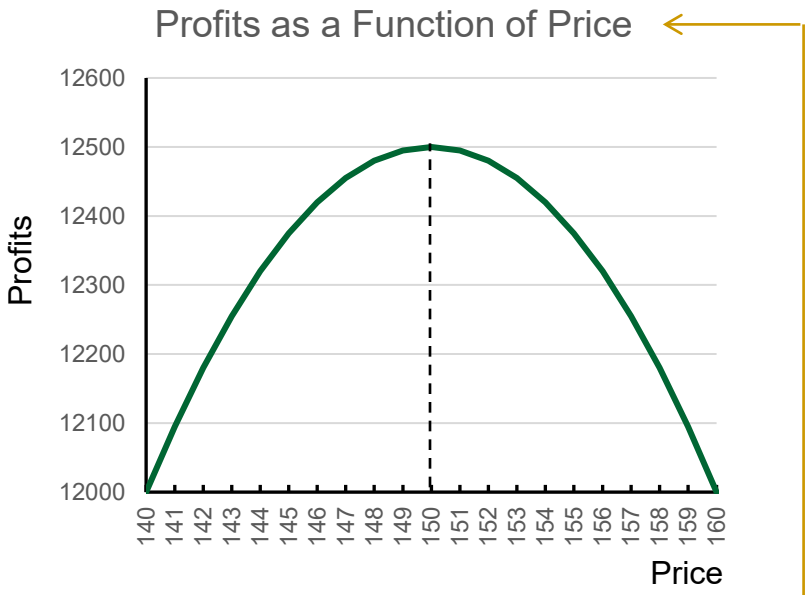
Implementations of the Hypothetical Monopolist Test:
Critical Loss

Critical loss

- The basic idea
  - When demand is linear, the profit curve as a function of price is a parabola

Model:
$q = 1000 - 5p$
$F = 0$
C = 100

$p_{max} = 150$
$q_{max} = 250$
$\pi_{max} = 12{,}500$



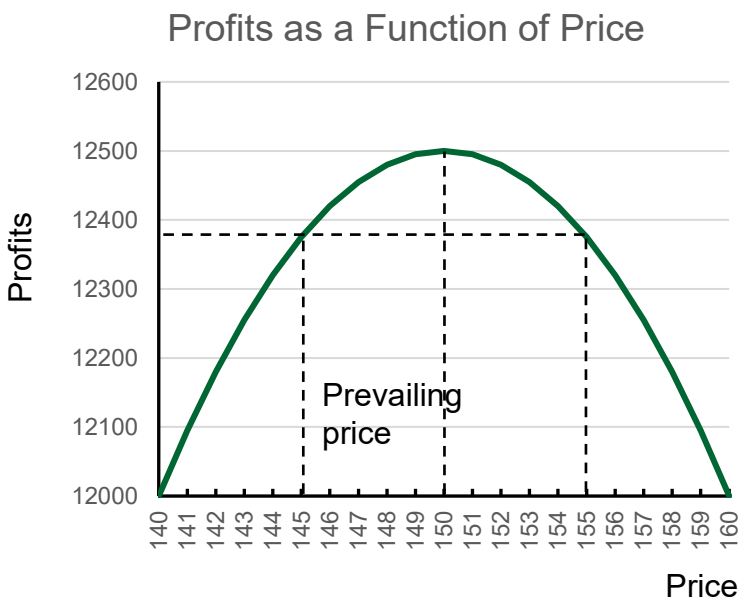
NB: We typically do this graph as a function of quantity, but this time we are doing it as a function of price because the HMT as whether a *price increase* (a SSNIP) would be profitable

Critical loss

- Say the prevailing price is 145
- Then a price of 155 would yield the same profits

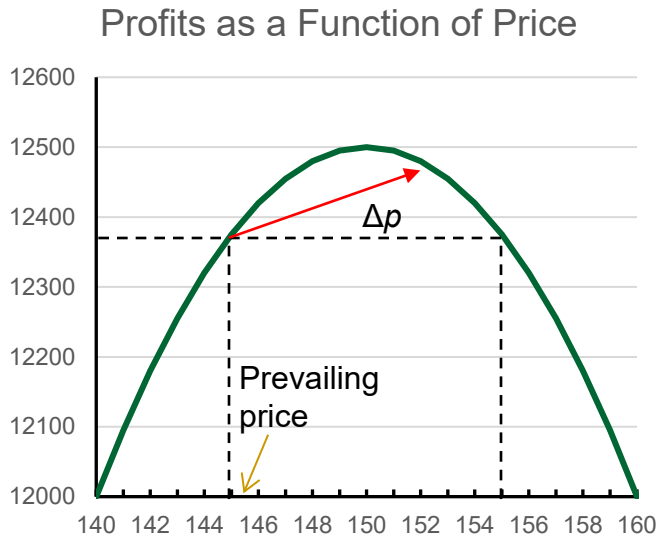
p	q	π
145	275	12,375
155	225	12,375

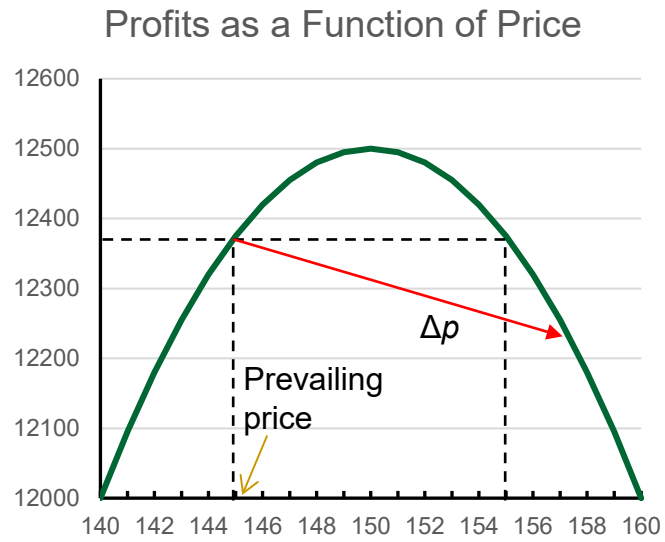
- Any price strictly between 145 and 155 would yield higher profits
- Note that 150 is the profit-maximizing price



Critical loss

- Δ*p* is profitable in the first graph and unprofitable in the second graph



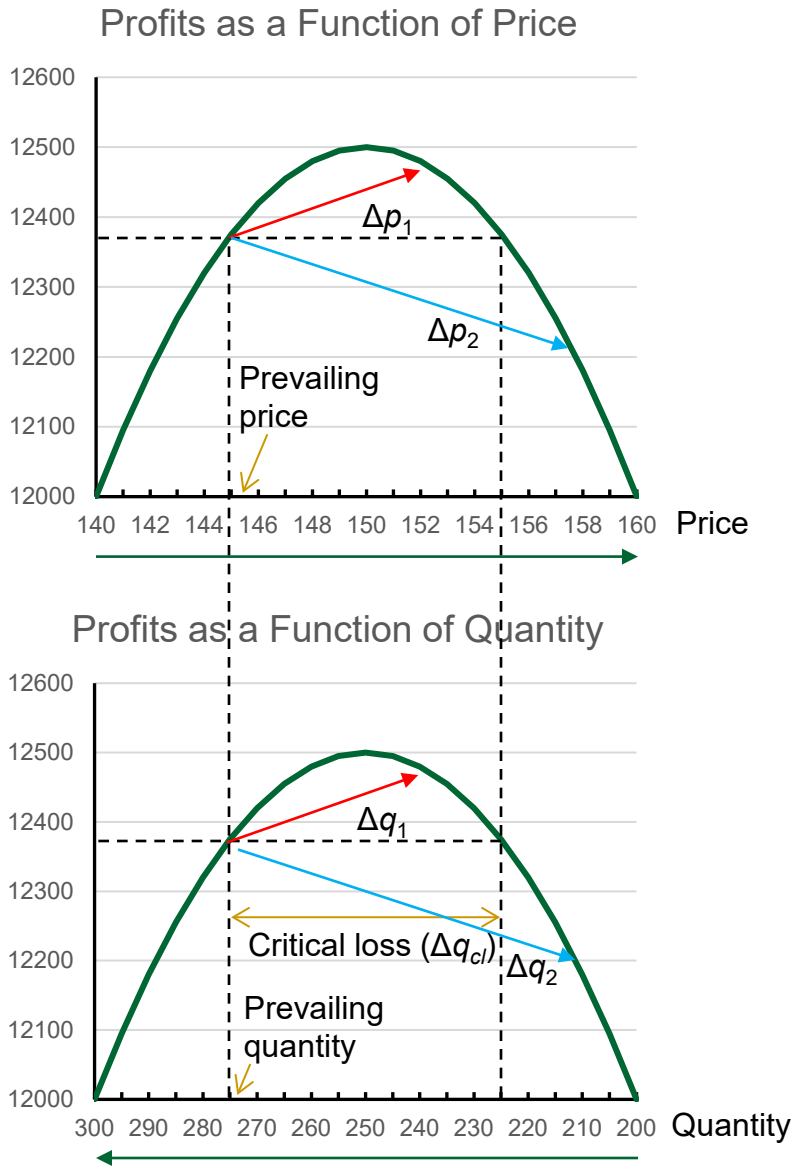


Critical loss

- Implementing the hypothetical monopolist test
  - The *critical loss* for Δp will be the maximum quantity Δq_{cl} the hypothetical monopolist could lose and still make at least as much in profit as it did before the SSNIP was implemented
  - We can associate an actual loss Δq with a price increase of Δp

Whether the price increase is profitable will depend on whether the associated quantity decrease is less than the critical loss, that is whether $\Delta q \leq \Delta q_{cl}$

- This is called the *critical loss test*
  - Δp_1 is profitable because $\Delta q_1 \leq \Delta q_{cl}$
  - Δp_2 is unprofitable because $\Delta q_2 \geq \Delta q_{cl}$



Critical loss

- The *critical loss rule*:

  If actual loss is less than the critical loss,
  the candidate market satisfies the HMT

- The idea
  - When actual loss is less than critical loss, this means that for a given SSNIP the hypothetical monopolist is able—
    - to capture enough incremental profits on the $margin increase on its inframarginal sales
    - to offset the incremental profit decrease on the loss of all margin on the marginal sales
  - In other words—
    - The number of actual lost marginal sales as a result of the SSNIP is smaller, and
    - The number of actual inframarginal sales is larger

    than those necessary to defeat the profitability of the SSNIP

- Two cautions
  1. Actual loss and critical loss are functions of the magnitude of the SSNIP
  2. A hypothetical monopolist that satisfies the HMT at a 5% SSNIP may fail the HMT for a different SSNIP (e.g., 10%)

Critical loss

- The basic idea
  - The critical loss for Δp will be the maximum quantity Δq_{cl} the hypothetical monopolist could lose and still make at least as much in profit as it did before the SSNIP was implemented:

Post-price increase profits: $(\underbrace{p+\Delta p}_{p_2}-c)(\underbrace{q-\Delta q_{cl}}_{q_2})$ $\underbrace{\qquad\qquad}_{m_2}$ $=$ Pre-price increase profits: $\underbrace{(p-c)}_{m_1}q$

Breakeven condition with constant marginal costs

  - Rearranging this equality, we can also express this condition as an equality of the gross gain in profits on retained sales and the gross loss in profits from lost sales:

Gain on inframarginal sales: $\Delta p(q-\Delta q_{cl})$ $=$ Loss of margin on marginal sales: $(p-c)\Delta q_{cl}$

Note: Critical loss is a function of the starting point q as well as p, Δp, and c

Critical loss

- A little more algebra: Three formulas for critical loss
  1. Solving for Δq_{cl} provides a formula for the *critical loss in units*:

1. Unit critical unit loss formula:

$$(CL =)\Delta q_{cl} = \frac{q\Delta p}{(p + \Delta p) - c}$$

In an HMT, Δp is the $SSNIP

- Requirements—
  - The same price (and hence the same Δp) for all products in the candidate market
  - The same dollar margin for all products in the candidate market

NB: Make sure that the requirements are satisfied before you apply the formula

Critical loss

- A little more algebra: Three formulas for critical loss
  2. Divide Equation 1 by q and divide the numerator and denominator of the resulting fraction by p to obtain *percentage critical loss*:

$$\left(\%\Delta q_{cl} \equiv\right)\frac{\Delta q_{cl}}{q} = \frac{\Delta p}{(p+\Delta p)-c} = \frac{\frac{\Delta p}{p}}{\frac{\Delta p}{p}+\frac{p-c}{p}}$$

2. Percentage critical loss formula:

$$= \frac{\delta}{\delta + m}$$

where

δ is the percentage price increase: $\delta = \frac{\Delta p}{p}$

In an HMT, δ is the %SSNIP

m is the percentage gross margin: $m = \frac{p-c}{p}$

Sometimes written %m

- Requirements —
  - A constant percentage margin m for all products in the candidate market

Critical loss

- A little more algebra: Three formulas for critical loss
  3. We can also define the *critical elasticity* ε_{cl} as the maximum elasticity that will profitably support a price increase of δ:

Definition of own-elasticity:
$$\left|\varepsilon_{cl}\right| = \frac{\frac{\Delta q_{cl}}{q}}{\frac{\Delta p}{p}} = \frac{\Delta q_{cl}}{q}\frac{1}{\delta} \Rightarrow \frac{\Delta q_{cl}}{q} = \delta\left|\varepsilon_{cl}\right|$$

NB: By convention, Δq_{cl} is a *positive* number. To make the signs work, we must use the absolute value of the elasticity. *Always watch for the sign of Δq in any equation.*

Percentage critical loss formula:
$$\frac{\Delta q_{cl}}{q} = \frac{\delta}{\delta + m} \Rightarrow \delta\left|\varepsilon_{cl}\right| \cong \frac{\delta}{\delta + m},$$

Cancelling the δs:
$$\left|\varepsilon_{cl}\right| \cong \frac{1}{\delta + m}$$

3. Critical elasticity formula

  - Accordingly, when the actual own-elasticity of demand ε is less than the critical elasticity ε_{cl} (i.e., ε is more *in*elastic than ε_{cl} or equivalently $\left|\varepsilon\right| < \left|\varepsilon_{cl}\right|$), then for a small enough %SSNIP the price increase will be profitable
    - We can express this as:

$$\left|\varepsilon\right| < \frac{1}{\delta + m}$$ means the HMT is satisfied

NB: To be clear, the elasticity here is that faced by the hypothetical monopolist

Critical loss and market definition

- The basic idea
  - Recall that under the hypothetical monopolist test, a candidate market is a relevant market if a hypothetical monopolist could profitably raise prices in the candidate market by a SSNIP
  - So for any candidate market with prevailing aggregate output q and price p and a \$SSNIP Δp—
    - if the associated change in output Δq is less than the critical loss Δq_{cl} ,
    - then a hypothetical monopolist could profitably raise price by the SSNIP
    - and the candidate market is a relevant market (more, more technically, satisfies the HMT)

Critical loss and market definition: Example 1

Products A and B are being tested as a candidate market. Each has a price of $100, has an incremental cost of $60, and sells 1200 units. When the price for both products is increased by $5, each firm loses 100 units to outside the market. Do A and B constitute a relevant market under the 2023 Guidelines?

Given the actual loss, so think unit critical loss

Critical loss and market definition: Example 1

Products A and B are being tested as a candidate market. Each has a price of $100, has an incremental cost of $60, and sells 1200 units. When the price for both products is increased by $5, each firm loses 100 units to outside the market. Do A and B constitute a relevant market under the 2023 Guidelines?

Given actual loss, so think unit critical loss

Parameters		
Price	p	100
Cost	c	60
Gross margin	m	40
Market output	Q	2400
SSNIP	Δp	5
Customer loss	ΔQ	-200

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Given the actual loss, so think unit critical loss

Parameters		
Price	p	100
Cost	c	60
Gross margin	m	40
Market output	Q	2400
SSNIP	Δp	5
Customer loss	ΔQ	-200

Critical loss

$$\Delta q^* = \frac{q\Delta p}{(p+\Delta p)-c}$$

Unit critical loss formula

qΔp	12000
(p+Δp)-c	45
CL	266.6667

Actual loss (200) is less than the critical loss (266.67), so A and B are a relevant market

Critical loss and market definition: Example 1

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Given the actual loss, so think unit critical loss

Parameters			**"Brute force" profit calculations**			**Critical loss**	
Price	p	100	Gain = (Q+ΔQ)Δp			$\Delta q^* = \frac{q\Delta p}{(p+\Delta p)-c}$	
Cost	c	60		Q + ΔQ	2200		
Gross margin	m	40		Δp	$5		
Market output	Q	2400		Gain	$11000		
SSNIP	Δp	5	Loss = mΔQ				
Customer loss	ΔQ	−200		ΔQ	−200	qΔp	12000
				m	$40	(p+Δp)−c	45
				Loss	−$8000	CL	266.6667
			Net		$3000		

Actual loss (200) is less than the critical loss (266.67), so A and B are a relevant market

Brute force profit calculations confirmation: Since the gain exceeds the loss, a hypothetical monopolist of A and B could profitably raise price by 5% and so A and B are a relevant market

Critical loss and market definition: Example 2

Premium cupcakes sell for $1.50 apiece and cost $0.90 to make. At this price, producers collectively sell 10,000 premium cupcakes. When the price for all premium cupcakes is increased by 5%, 15% of the customers switch to regular cupcakes. Do premium cupcakes constitute a relevant market under the 2023 Guidelines?

You are given the percentage loss, so think percentage critical loss

- *Step 1*: Summarize the variables
  - $p = 1.50$ — %SSNIP = 5%
  - $c = 0.90$ — $Q = 10{,}000$
  - $m = \frac{1.50 - 0.90}{1.50} = 40\%$ — $\%\Delta Q = 15\%$
- *Step 2*: Calculate the percentage critical loss:

$$(\%CL =)\frac{\Delta q_{cl}}{q} = \frac{\delta}{\delta + m} = \frac{5\%}{5\% + 40\%} = 11.11\%$$

- *Step 3*: Compare percentage actual loss to percentage critical loss
  - Percentage actual loss = 15%
  - Percentage critical loss = 11.11%
- *Answer*: Since $\%\Delta Q > \% \Delta Q_{cl}$, premium cupcakes are NOT a relevant product market

Homework problem 1

Products A and B are being tested as a candidate market. The market price for each unit of either product is $300, each type of product has a constant incremental cost of $160 per unit and aggregate sales of 1000 units. When the price for both products is increased by $15, each firm loses 100 units to products other than A and B. What is the critical loss for the candidate market of products A and B? Do A and B constitute a relevant market under the hypothetical monopolist test using critical loss analysis and SSNIP of 5%?

You are given the actual unit loss, so think the unit critical loss test

- "Brute force" method
  - *Step 1*: Summarize the variables
    - $p = 300$ $Q = 1000 + 1000 = 2000$ (two firms each selling 1000 units)
    - $c = 160$ $\Delta Q = -100 + -100 = -200$
    - $SSNIP = 15
  - *Step 2*: Set up and solve the breakeven condition:

$$pq - cq = (p + \Delta p)(q - \Delta q_{cl}) - c(q - \Delta q_{cl})$$

    - Rearranging:

$$(p - c)q = (p + \Delta p - c)(q - \Delta q_{cl})$$

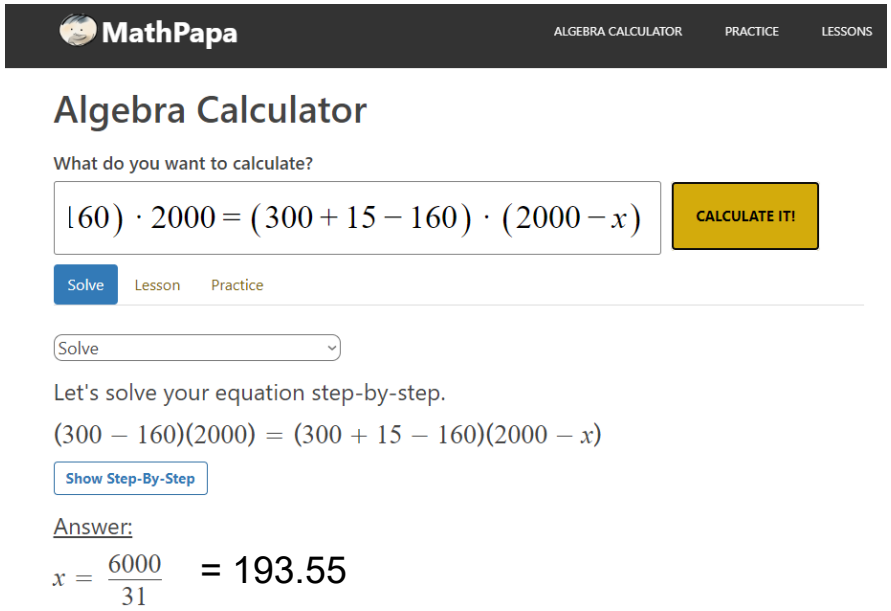
Profits = $margin times quantity

    - Substituting parameters:

$$(300 - 160)2000 = (300 + 15 - 160)(2000 - \Delta q_{cl})$$

Homework problem 1

- "Brute force" method (con't)
  - *Step 2*: Set up and solve the breakeven condition for ΔQ_{cl} (con't)



  - *Step 3*: Compare actual loss to unit critical loss
    - Actual loss: $\Delta Q = 100 + 100 = 200$ units
    - Unit critical loss $\Delta Q_{cl} = 193.55$
  - *Answer*: Since $\Delta Q > \Delta Q_{cl}$, Products A and B are technically NOT a relevant product market under the Merger Guidelines

Neither precision nor accuracy is a hallmark of market definition. Although actual loss is greater critical than critical loss, the difference is so small that it is unlikely a court would reject A and B as a relevant market if the qualitative evidence had convinced the judge that A and B are a proper relevant market

Homework problem 1

Products A and B are being tested as a candidate market. The market price for each unit of either product is $300, each type of product has a constant incremental cost of $160 per unit and aggregate sales of 1000 units. When the price for both products is increased by $15, each firm loses 100 units to products other than A and B. What is the critical loss for the candidate market of products A and B? Do A and B constitute a relevant market under the hypothetical monopolist test using critical loss analysis and SSNIP of 5%?

- Unit critical loss formula
  - *Step 1*: Summarize variables
    - p = 300
    - c = 160
    - $SSNIP = 15
    - Q = 1000 + 1000 = 2000
    - ΔQ = 100 + 100 = 200
  - *Step 2*: Apply the *unit critical loss formula* to find unit critical loss

$$\Delta Q_{cl} = \frac{Q\Delta p}{(p + \Delta p) - c} = \frac{2000 * 15}{(300 + 15) - 160} = 193.55$$

  - *Step 3*: Compare actual loss to unit critical loss
    - Actual loss: ΔQ = 100 + 100 = 200 units
    - Unit critical loss ΔQ_{cl} = 193.55
  - *Answer*: Since $\Delta Q > \Delta Q_{cl}$, Products A and B are technically NOT a relevant product market under the Merger Guidelines

Homework problem 2

In *FTC v. Occidental Petroleum Corp*., No. 86-900, 1986 WL 952 (D.D.C. Apr. 29, 1986), the FTC challenged the pending acquisition by Occidental Petroleum, a major producer of polyvinyl chloride ("PVC"), of Tenneco's PVC business. Both companies produced PVC in plants in the United States. The parties agreed that the relevant product markets were suspension homopolymer PVC and dispersion PVC, and the PI proceeding focused largely on the relevant geographic market. The FTC alleged that the relevant geographic market was the United States for both types of products; the merging parties argued that the relevant geographic market was worldwide. In the Section 13(b) proceeding for a preliminary injunction, the evidence showed that if the price of all suspension homopolymer PVC produced in the United States was increased by 5%, U.S. customers would divert about 17% of their purchases to imports from foreign suppliers (who were ready to serve these customers). The evidence also showed that that if the price of all dispersion PVC produced in the United States was increased by 5%, U.S. customers would divert about 12% of their purchases to imports from foreign suppliers (again, who were ready to serve these customers). The evidence in the hearing also showed that the percentage gross margins for homopolymer PVC and dispersion PVC were 28% and 45%, respectively. Was the FTC correct that the relevant geographic market was the United States using the hypothetical monopolist test and a SSNIP of 5%?

You are given the percentage loss, so think percentage critical loss

Homework problem 2

- Use percentage critical loss method
  - *Step 1*: Summarize the variables

Suspension PVC	Dispersion PVC
%SSNIP = 5%	%SSNIP = 5%
%m =28%	%m = 45%
%ΔQ = 17%	%ΔQ = 12%

  - *Step 2*: Calculate the percentage critical loss:
  - $$\%\Delta q_{cl-suspension\ PVC} = \frac{\delta}{\delta + m} = \frac{5\%}{5\% + 28\%} = 15.15\%$$

$$\%\Delta q_{cl-dispersion\ PVC} = \frac{\delta}{\delta + m} = \frac{5\%}{5\% + 45\%} = 10.00\%$$

  - *Step 3*: Compare percentage actual loss to percentage critical loss:
    - Suspension PVC: 17% actual 15.15% percentage critical loss
    - Dispersion PVC: 12% actual 10.00% percentage critical loss
  - *Answer*: The percentage actual loss is greater than the percentage critical loss for both product types, so neither product type technically is its own relevant product market

Homework problem 3

Premium ice cream sells at $4.00/pint and has a constant marginal cost of $2.25/pint. The own-elasticity of aggregate demand for premium ice cream is −1.9, with almost all diversion going to regular ice cream. Two premium ice cream manufacturers proposed to merge. Is premium ice cream a relevant product market under the hypothetical monopolist test under a 5% SSNIP, or should the market be expanded to include regular ice cream?

You are given an actual elasticity, so think critical elasticity

- *Step 1*: Summarize variables
  - $p = 4.00$ %SSNIP = 5%
  - $c = 2.25$ $\varepsilon = -1.9$
  - $\%m = \frac{4.00 - 2.25}{4.00} = 43.75\%$
- *Step 2*: Calculate the absolute value of the critical elasticity:

$$|\varepsilon_{cl}| = \frac{1}{\delta + m} = \frac{1}{0.05 + 0.4375} = 2.05$$

In calculating critical elasticity, be sure to convert the percentages into decimal numbers!

- *Step 3*: Compare the actual elasticity with the critical elasticity:
  - Actual elasticity (absolute value) = 1.9
  - Critical elasticity (absolute value) = 2.05
- *Answer*: Since $|\varepsilon| < |\varepsilon_{cl}|$, premium ice cream is a relevant market (inelastic enough)

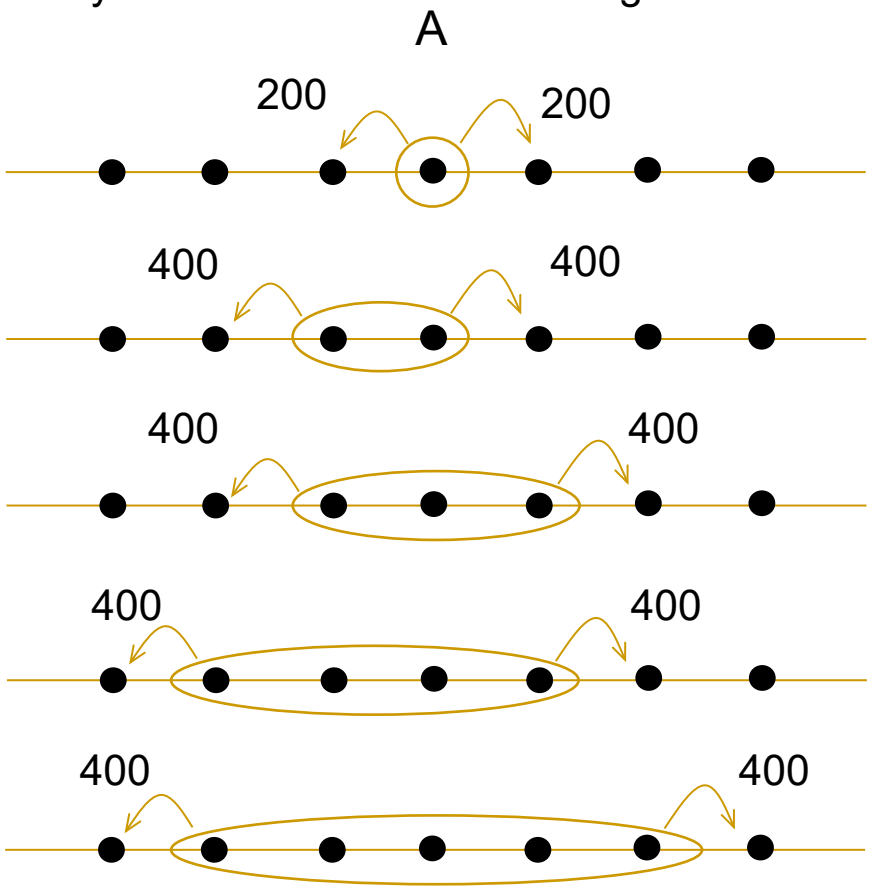
Critical loss and market definition: Example 3

Assume that there is an identical gas station every mile on a straight road. Each gas stations charges $3.25 per gallon, has an incremental costs of $2.50, and sells 1000 gallons. When the price at a station is increased by 5% (holding the price at all other gas stations constant), the station loses customers who in the aggregate buy 400 gallons. No customer will travel more than one mile, however, to avoid a 5% price increase. For a given station A and assuming a SSNIP of 5%, what is the relevant market?

We'll do this step by step

Critical loss and market definition: Example 3

- Example 4: Gas stations on a road
  - Step 0: Make sure you understand the switching behavior!



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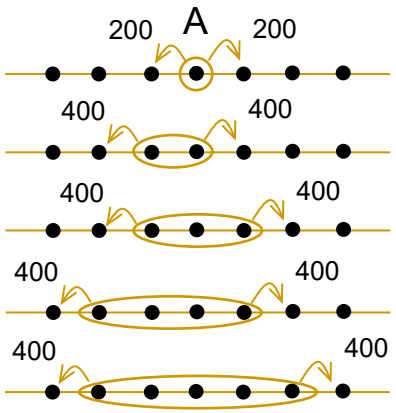
This is complicated, so think brute force

- Step 1: Summarize the variables
  - $p = 3.25$
  - $c = 2.50$
  - $\$m = 3.25 - 2.50 = 0.75$
  - Customers/station = 1000
  - Customer loss per station = 400

%SSNIP = 5%

$\$SSNIP = 0.05 * 3.25$

$= 0.1625$



- Step 2: Calculate net profit gain as the market expands

Stations in the market	Q	ΔQ	Gain	Loss	Net
1	1000	400	97.50	300.00	-202.50
2	2000	800	195.00	600.00	-405.00
3	3000	800	357.50	600.00	-242.50
4	4000	800	520.00	600.00	-80.00
5	5000	800	682.50	600.00	82.50

Five stations, with Station A in the middle, is the relevant geographic market

Critical loss and market definition

- Estimating actual loss (Δq)
  - We can estimate the percentage critical loss if we know the aggregate own-elasticity of demand for the candidate market when:
  - First-order approximation of the percentage actual loss:

$$\frac{\frac{\Delta q}{q}}{\frac{\Delta p}{p}} \equiv \varepsilon \Rightarrow \frac{\Delta q}{q} \approx \frac{\Delta p}{p}\varepsilon = \delta\varepsilon,$$

"≈" means approximately

where ε is the residual own-elasticity of demand for the candidate market (i.e., of the hypothetical monopolist)

that is, the percentage actual loss is approximately equal to the percentage price change times the own-elasticity of demand

  - First-order approximation of the actual loss for an arbitrary downward-sloping demand curve:

4. Percentage actual loss formula

$$\frac{\Delta q}{q} \approx \delta\varepsilon$$

NB: This is exact in the case of linear demand

  - Calculating exact actual loss for a linear demand curve from own-elasticity:

5. Unit actual loss formula

$$\varepsilon = \frac{\Delta q}{\Delta p}\frac{p}{q} \Rightarrow \Delta q = \varepsilon\frac{q}{p}\Delta p = \varepsilon\delta q$$

Critical loss: Differentiated margins

- Multiple margins in homogeneous product markets
  - In the percentage critical loss formulas in the earlier slides, the percentage margins of the various products in the candidate markets were all assumed to be equal
  - In many homogeneous candidate markets, however, the percentage margins will differ among firms
    - Production technologies may differ among firms resulting in different marginal costs and hence different margins even when all products are homogeneous and sell at the same price
  - Since the products are homogeneous, the market is single-priced and the hypothetical monopolist must increase the prices of all firms in the candidate market by a SSNIP
- There are three ways to handle homogeneous product markets with differentiated margins
  - Brute force accounting
  - Using diversion ratio-weighted average margins
  - Using sufficiency tests

Critical loss: Differentiated margins

- Diversion share-weighted margins
  - Replace *m* in the above formulas with the diversion share-weighted average margin of the products in the candidate market
  - Revenue shares as a proxy for diversion shares
    - In the absence of better information on actual diversions, a standard assumption used by economists in critical loss analysis is that unit losses by the hypothetical monopolist as a result of a uniform SSNIP are equal to revenue shares
    - NB: Critical loss are applied to homogeneous product markets, so all diversions are to outside products

Critical loss: Differentiated margins

- Setting up the problem
  - Without loss of generality, assume that there are three firms in the candidate homogeneous product market:

Firm	Sales (q_i)	Share (s_i)	%Margin (m_i)	Diversion (Δq_i)
1	500	0.5	0.4	60
2	300	0.3	0.6	30
3	200	0.2	0.2	10

    - The market price p is \$10
    - The diversion Δq_i for firm i is the quantity that diverts outside the candidate market for a uniform 5% SSNIP (presumably there is no intramarket diversion with a uniform price increase)
    - Total division from the market for a uniform 5% SSNIP is $\sum_{i=1}^{3} \Delta q_i = 100$
  - HMT: Is a uniform 5% SSNIP profitable? YES
    - As in all cases, the answer depends on whether the gain to the monopolist on the increased margin on the inframarginal sales is greater than the loss of margin on the marginal sales

Brute force calculation

Gain on Inframarginal Sales				Loss on Marginal Sales			
Firm	$q_i - \Delta q_i$	\$SSNIP	Gain	Δq_i	%Margin	\$Margin	Loss
1	440	0.5	220	60	0.4	4	240
2	270	0.5	135	30	0.6	6	180
3	190	0.5	95	10	0.2	2	20
			450	100			440

Critical loss: Differentiated margins

1. Diversion share-weighted average margins—Example

A homogeneous candidate market contains three products with different margins given in the table below. For a uniform 5% SSNIP, the hypothetical monopolist would lose 8% of its sales. Is the candidate market a relevant market?

- The data:

Product	Revenue share	Margin	
A	0.5	0.4	Contributes 50% to the average margin
B	0.3	0.7	Contributes 30% to the average margin
C	0.2	0.3	Contributes 20% to the average margin

Note the use of revenue shares as a proxy for marginal sales unit loos

- We are not given marginal sales unit loss for each product. Use revenue share as a proxy and calculate the revenue share-weighted average margin:

$$m_{ave} = (0.5)(0.4) + (0.3)(0.7) + (0.2)(0.3) = 0.47$$

- Calculate the percentage critical loss using m_{ave}:

$$(\%CL =)\frac{\Delta q_{cl}}{q} = \frac{\delta}{\delta + m_{ave}} = \frac{0.05}{0.05 + 0.47} = 9.62\%$$

- Since the actual percentage loss (8%) is less than the percentage critical loss calculated using revenue share-weighted margins, the candidate market is a relevant market

Critical loss: Differentiated margins

2. The maximum margin as a *sufficient* condition
   - Replace *m* in the above formulas with the *maximum margin* of the products in the candidate market
   - A *sufficient* condition for the candidate market to be a relevant market is if the actual loss by the hypothetical monopolist is less than the critical loss using the maximum margin
     - This approach essentially assumes the worst case: all unit losses by the hypothetical monopolist as a result of a unform SSNIP come from the product with the highest margin and hence yields the maximum profit loss on marginal sales
     - May use this test if data for a diversion-share-weighted margin is not available or cannot be estimated

This is a sufficient condition only*: Failure to satisfy the test does* not *mean that the candidate market is not a relevant market, since if some losses come from lower margin products the true critical loss is lower than the critical loss calculated using the maximum margin*

Critical loss: Differentiated margins

2. Maximum margin approach (sufficient condition)

The homogeneous candidate market contains three products with different margins given in the table below. For a 5% SSNIP, the hypothetical monopolist would lose 8% of its sales. Is the candidate market a relevant market?

- The data:

Product	Revenue share	Margin
A	0.5	0.4
B	0.3	0.7
C	0.2	0.3

- Identify the maximum margin: $m_{max} = 0.7$
- Calculate the percentage critical loss using m_{max}:

$$(\%CL =)\frac{\Delta q_{cl}}{q} = \frac{\delta}{\delta + m_{\max}} = \frac{0.05}{0.05 + 0.7} = 6.67\%$$

- Since the actual percentage loss (8%) is greater than the critical loss calculated using the maximum margin, the candidate market fails this sufficiency test
- BUT this does *not* mean that the candidate market is not a relevant market, since it assumes the worst possible losses for the hypothetical monopolist. Using a revenue share-weighted margin (prior slide), we saw that the candidate market is a relevant market

Critical loss

NB: By convention, Δq_{cl} is a *positive* number. *Always watch for the sign of Δq in any equation.*

- Summary of formulas[1]
  - *Absolute terms (brute force):*

Gain on inframarginal sales

$$\Delta p\left(q-\Delta q_{cl}\right)=\left(p-c\right)\Delta q_{cl}$$

Loss of margin on marginal sales

  - *Unit critical unit loss*:

$$\left(CL=\right)\Delta q_{cl}=\frac{q\Delta p}{\left(p+\Delta p\right)-c}$$

All variables are in units

  - *Percentage critical loss*:

$$\left(\%CL=\right)\frac{\Delta q_{cl}}{q}=\frac{\delta}{\delta+m}$$

All variables are in percentages

where δ is the percentage price increase: $\delta=\frac{\Delta p}{p}$

Often the %SSNIP

m is the percentage gross margin: $m=\frac{p-c}{p}$

[1] This is for the profitability implementation of the HMT and assumes constant marginal costs.

Critical loss

- Summary of formulas[1]
  - *Critical elasticity*:

$$\left|\varepsilon_{cl}\right| \cong \frac{1}{\delta + m}$$

All variables are in decimals because of the "1" in the numerator (If you want to use percentages, use "100" in the numerator)

where ε is the own-elasticity of demand of the monopolist (i.e., the aggregate demand curve)

  - *Percentage actual loss*:

$$\frac{\Delta q}{q} \cong \delta\varepsilon$$

Exact when the demand curve is linear

[1] This is for the profitability implementation of the HMT and assumes constant marginal costs.

Critical loss: Summary

- Points to remember
  - In the standard models, the hypothetical monopolist increases price by reducing output, which creates a scarcity in the product. Inframarginal customers then bid up the price in order to clear the market.
  - While small reductions in output may increase profits, sufficiently large reductions will reduce profits below the prevailing level
  - The maximum output reduction at which the hypothetical monopolist just breaks even on profits is called the *critical loss*
    - The critical loss is the output reduction where the profits gained from the increase in margin in the inframarginal sales just equal the profits lost from the loss of the marginal sales
  - *Test*: If the actual loss of sales due to a SSNIP is less than the critical loss, the SSNIP will be profitable and the candidate market will satisfy the HMT
  - Implementations
    - "Brute force" accounting
      - Calculate the additional profit gain from the increase in margin on inframarginal sales ($SSNIP times inframarginal sales ($q - \Delta q$))
      - Calculate the profit loss from the lost marginal sales ($margin times marginal sales Δq)
      - Compare: If the gains exceed the losses, then the product grouping is a relevant market under the HMT
    - Use a critical loss formula

When in doubt, use "brute force" accounting—It is the most intuitive and will always work!

One-Product SSNIPs and Aggregate Diversion Analysis

Aggregate diversion analysis

- Basic idea
  - When firms supply *differentiated products*, prices as well as margins can differ among products in a candidate market
  - When products are differentiated, is there any reason to require the hypothetical monopolist to increase price uniformly in applying the hypothetical monopolist test?
- Evolution in the guidelines
  - 1982 Merger Guidelines
    - Required that the prices of all products in the provisional market be increased by the same percentage SSNIP
  - 1992 Merger Guidelines
    - Technically allowed the hypothetical monopolist to increase the prices of some but not all products in a candidate market
    - But not applied in practice except in cases where the premerger market already exhibited price differences (and sometimes when the postmerger market arguably would exhibit different prices even if the premerger market did not)
  - 2010 Merger Guidelines
    - After the 2010 Merger Guidelines, some economists—including agency economists in court proceedings—used product-specific SSNIPs in any differentiated products markets
    - A *one-product SSNIP* usually creates the narrowest relevant markets since it internalizes the maximum amount of diversion

Diversion ratios

- The idea
  - *Definition*: The percentage of total sales lost by Firm A (Δq_A) that divert (switch) to Firm B (Δq_B) when Firm A increases its price by some given amount (Δp_A) and all other firms hold their prices constant
  - Mathematically:

$$D_{A \to B} \equiv D_{AB} = \left. \frac{\Delta q_B}{\Delta q_A} \right|_{\text{for some } \Delta p_A}$$

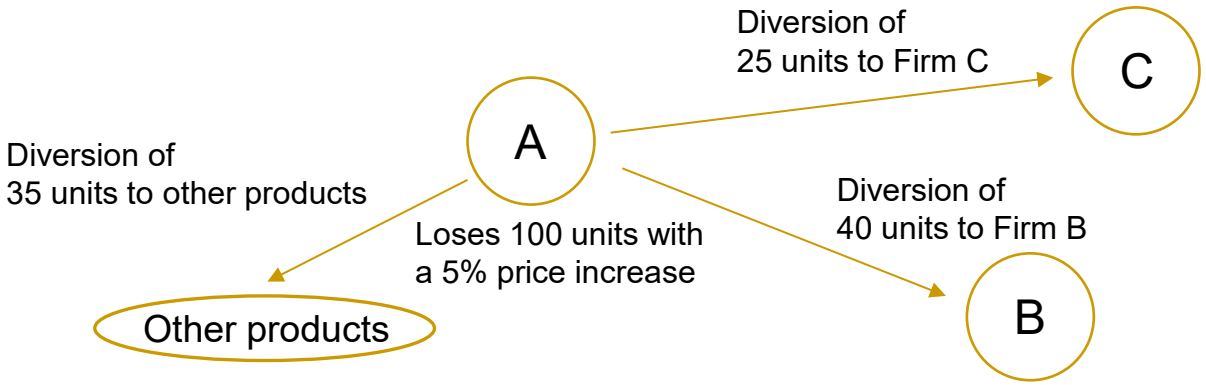
  - *Keep in mind*: The definition of diversion ratios is motivated by Firm A's price *increasing* and a corresponding loss of A's sales, some of which divert to Firm B
    - More formally:

$$D_{AB} = \frac{\frac{\Delta q_B}{\Delta p_A}}{\frac{\Delta q_A}{\Delta p_A}} = \left. \frac{\Delta q_B}{\Delta q_A} \right|_{\text{for some } \Delta p_A}$$

NB: The subscript notation for diversion ratios is not standardized in the literature. I write so that the first subscript (A) is the firm increasing its price and the second subscript (B) is the firm to which the sales of interest divert.

Diversion ratios

- Example
  - Firm A raises its price by 5% and loses 100 units (all other firms hold their price constant)
    - 40 units divert to Firm B
    - 25 units divert to Firm C
    - 35 units divert to other products



  - Then:

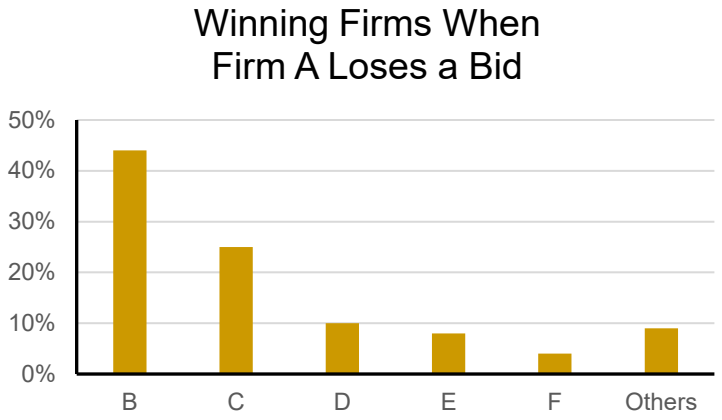
$$D_{A\to B} = \frac{40}{100} = 0.40 \text{ or } 40\%$$

$$D_{A\to C} = \frac{25}{100} = 0.25 \text{ or } 25\%$$

Since $D_{A\to B} > D_{A\to C}$, B is generally regarded as a closer substitute to A than C

Diversion ratios

- How are diversion ratios estimated? (Usually not very accurately)
  1. Data collected during the regular course of business (including win/loss data)



Firm	Loss Percentage
B	44%
C	25%
D	10%
E	8%
F	4%
Others	9%
	100%

- The data is for losses on similar projects
  - That is, projects that are likely to be in the same relevant market
- The loss percentages are taken as estimates of the diversion ratios
  - So the estimated D_{AB} is 44%
- But may be inaccurate: For example—
  - Some bids may be evaluated on nonprice and well as price factors
    - This can result in the data overestimating either actual recapture or diversion outside of the candidate market, making the relevant market appear smaller or larger (respectively) than it actually is
  - Some firms may be engaged in strategic bidding (e.g., bidding to lose)

Diversion ratios

- How are diversion ratios estimated? (Usually not very accurately)
  2. Indications in the company documents
  3. Consumer surveys
     - But very sensitive to survey design and customer ability to accurately predict product choice in the presence of a price increase
     - Often given little weight in court, especially when there are better alternative methods of estimating diversion ratios (as was the case in *H&R Block*)
  4. Switching shares as proxies
     - Where switching behavior is not limited to reactions to changes in relative price
     - Use only when better estimates are not available
     - *Example*: H&R Block/TaxACT (where the court accepted a diversion analysis based on IRS switching data only as corroborating other evidence)
  5. Demand system estimation/econometrics
     - Econometric estimation of all own- and cross-elasticities of all interacting firms
     - Very demanding data requirements—Usually possible only in retail deals where point-of-purchase scanner data is available
  6. Market shares as proxies: Relative market share method
     - Commonly used method when other data is not available
     - Assumes that customers divert in proportion to the market shares of the competitor firms (after adjusting for any out-of-market diversion)
       - So that the largest competitors (by market share) get the highest diversions

Diversion ratios

- Relative market share method: Application
  - When all diversion is to products within the candidate market:

$$D_{A\to B} = \frac{s_B}{s_B + s_C + \cdots + s_N} = \frac{s_B}{1 - s_A},$$

That is, $D_{A\to B}$ is the share of firm B divided by the sum of the shares of the firms other than A in the candidate market

where s_A and s_B are the market shares of firms A and B, respectively

  - *Example*: Candidate market—
    - Firm A 40%
    - Firm B 30%
    - Firm C 24%
    - Firm D 6%

60% points to be allocated to three firms pro rata by their market shares

    - No diversion outside the candidate market

Then:

$$D_{A\to B} = \frac{0.30}{1 - 0.40} = 50.0\%$$

$$D_{A\to C} = \frac{0.24}{1 - 0.40} = 40.0\%$$

$$D_{A\to D} = \frac{0.06}{1 - 0.40} = 10.0\%$$

Adds to 100%, to account for 100% of the diverted sales

Diversion ratios

- Relative market share method: Application (con't)
  - When there is some diversion to products outside the candidate market:

$$D_{A\to B} = \left(1 - \frac{\Delta q_{outside}}{\Delta q_A}\right)\frac{s_B}{1 - s_A},$$

where $\frac{\Delta q_{outside}}{\Delta q_A}$ is the percentage of Firm A's lost sales that are diverted to firms outside of the market

  - *Example*: Candidate market—
    - Firm A 50%
    - Firm B 25%
    - Firm C 15%
    - Firm D 10%

    Shares in the candidate market (= 100%)
    - Outside diversion: 15%

    → 85% points to be allocated to the firms in the candidate market

The outside diversion is data (say, from empirical analysis) and not to be estimated

Then:

$$D_{A\to B} = (1 - 0.15)\frac{0.25}{1 - 0.50} = 42.5\%$$

$$D_{A\to c} = (1 - 0.15)\frac{0.15}{1 - 0.50} = 25.5\%$$

$$D_{A\to D} = (1 - 0.15)\frac{0.10}{1 - 0.50} = 17.0\%$$

$$D_{A\to O} = 15\%$$

Total 85% to firms B, C, and D
With outside diversion: 100%

Diversion ratios in *H&R Block*

- Warren-Boulton's derivation of diversion ratios in H&R Block/TaxACT
  - Used market shares to estimate diversion ratios
  - Recall
    - s_{HRB} = 15.6%
    - s_{TaxACT} = 12.8%
  - So

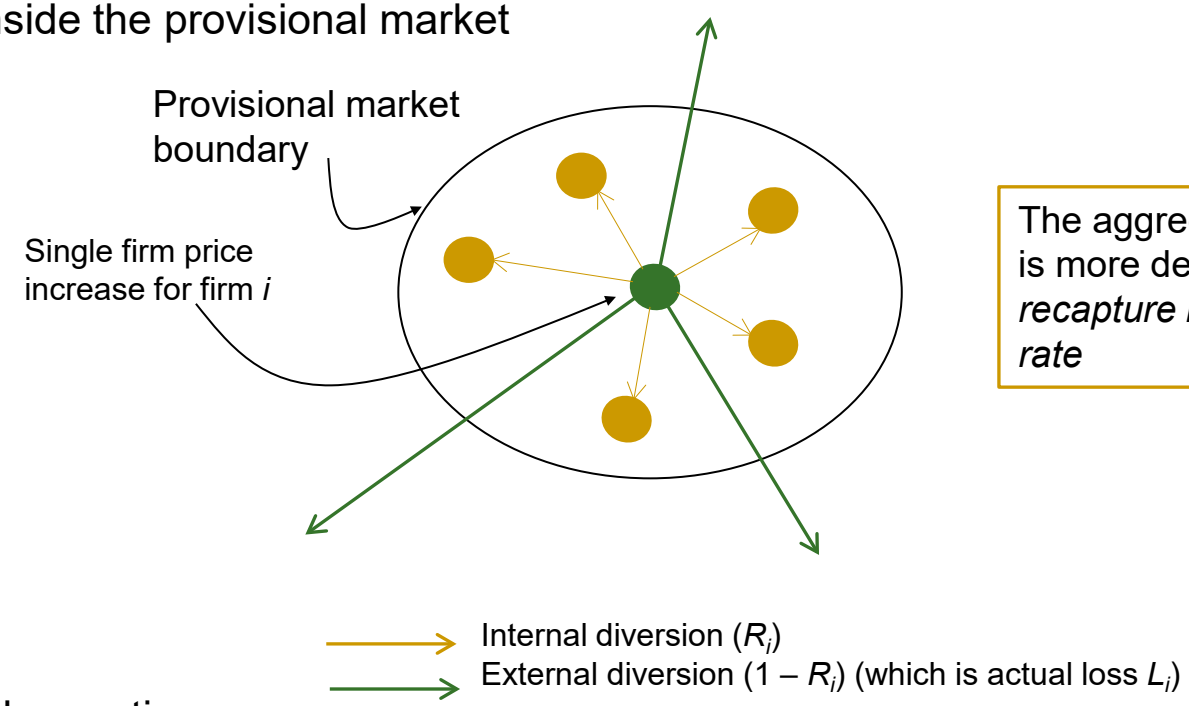
$$D_{HRB \to TaxACT} = \frac{12.8\%}{1 - 15.6\%} = 15.2\%$$

$$D_{TaxACT \to HRB} = \frac{15.6\%}{1 - 12.8\%} = 17.9\%$$

  - Interestingly, the court reported these diversion ratios as 14% and 12%
    - Warren-Boulton probably had some diversion to an outside option that was not given in the court opinion
      - An outside option (assisted and manual) of 17% for HRB gives $D_{HRB \to TaxACT} = 14\%$
      - An outside option (assisted and manual) of 10% for TaxAct gives $D_{TaxACT \to HRB} = 12\%$

One-product SSNIP recapture test

- Definition: Aggregate diversion ratio
  - The percentage R_i of total sales lost by a given product in the wake of a SSNIP applied only to product *i* that is recaptured by the aggregate of the other products inside the provisional market



The aggregate diversion ratio is more descriptively call the *recapture ratio* or the *recapture rate*

  - Observation
    - 100% of the total loss of sales by firm *i* is equal to the recapture percentage R_i that are diverted to firms in the candidate market plus the percentage loss of sales L_i to all firms outside the market (that is, $R_i + L_i = 100\%$ for all firms in the market)

One-product SSNIP recapture test

- The 2010 Merger Guidelines and the one-product SSNIP

> The hypothetical monopolist test requires that a product market contain enough substitute products so that it could be subject to post-merger exercise of market power significantly exceeding that existing absent the merger. Specifically, the test requires that a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present and future seller of those products ("hypothetical monopolist") likely would impose at least a small but significant and non-transitory increase in price ("SSNIP") on **at least one product in the market, including at least one product sold by one of the merging firms**. For the purpose of analyzing this issue, the terms of sale of products outside the candidate market are held constant.[1]

This is an important requirement

  - This creates the *one-product SSNIP test*:

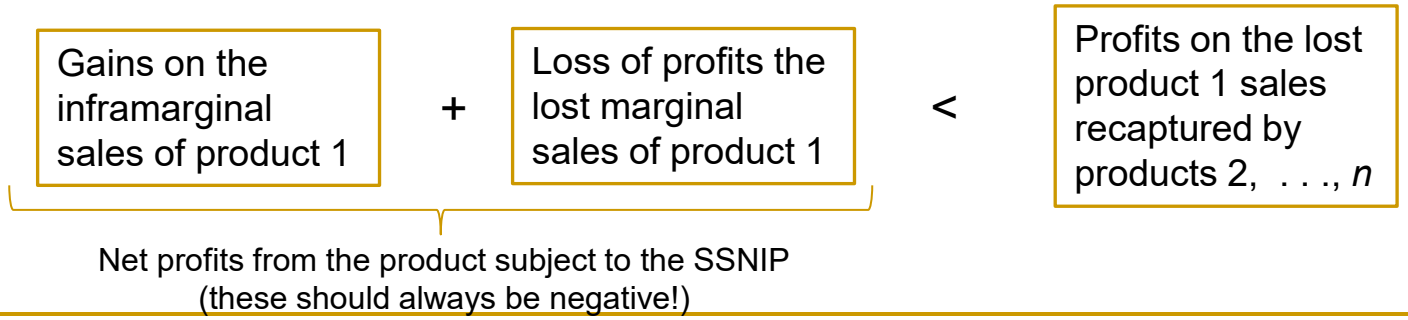
    A provisional market is a relevant market under the Merger Guidelines if a hypothetical monopolist could profitably increase the price of one of the merging firm's products by a SSNIP holding the prices of all other product constant

    - This is the *profitability* version of the test (as opposed to the profit-maximization version)
    - NB: Just because one product in the candidate market fails the one-product SSNIP test does not preclude another product from passing it

[1] U.S. Dep't of Justice & Fed. Trade Comm'n, Horizontal Merger Guidelines § 4.1.1 (rev. 2010) (emphasis added); *see* U.S. Dep't of Justice & Fed. Trade Comm'n, Merger Guidelines § 4.3.A (rev. 2023) (but may not require the SSNIP to be applied to a product of a merging firm).

The one-product SSNIP recapture test

- The idea
  - When the hypothetical monopolist increases the price of only one product in the candidate market, its lost sales divert both to—
    - Products outside of the market ("external diversion"), *and*
    - Other products inside the market ("internal diversion)
  - As always, the profitability of a one-product SSNIP will depend on whether the hypothetical monopolist profit gains from the price increase outweigh its losses
  - But in the case of a one-product SSNIP, the gains will be—
    - The increase in margin on the inframarginal sales of the product subject to the SSNIP
    - PLUS the profits earned by all other products in the candidate market on recaptured sales from internal diversion
  - *The test*: Assume that there are *n* products in the candidate market. A one-product SSNIP in the price of product 1 is profitable for the hypothetical monopolist if and only if:



Recapture analysis for single-product SSNIP

- "Brute force" method for single product price increase—Example 1
  - Example 1: (Differentiated) Gourmet pizzas
    - Assume that for a single product price increase of 5%, the hypothetical monopolist would retain 90 out of every 100 customers. Of the 10 lost customers, 7 would divert to another gourmet pizza and 3 would go to a standard pizza. Assume that the price of gourmet pizzas is $3.00 and that the dollar margin is $1.50 per pie for all producers.
    - *Query*: Under the single-product 5% SSNIP test, are gourmet pizzas a relevant product market?

Data

Out of every	100	Price	$3.00
units sold:		$Margin	$1.50
Units retained	90	SSNIP (%)	5.00%
Total units lost	10	SSNIP ($)	$0.15
Units recaptured	7		

Analysis

Gain on inframarginal	$13.50	Units retained (90) times $SSNIP ($0.15)
Loss on marginal sales	-$15.00	Total units lost (10) times $margin ($1.50)
Gain on recapture	$10.50	Recaptured units (7) times $margin ($1.50)
Net gain	$9.00	

- Since the 5% price increase results in a net profit gain, gourmet pizzas are a relevant market

Relation to critical loss: When the dollar margins on the recapture sales are the same as the lost sales, those recaptured sales wash out the associated loss. Hence, you might think that you can look only at the sales not recaptured within the market (i.e., those that go to the "outside option") and do a critical loss analysis.

BUT this is not quite right. The inframarginal sales of Product 1 post-SSNIP earn an additional margin, but the recaptured sales earn the original margin. So you cannot use a critical loss test to test a one-product SSNIP.

One-product SSNIP recapture test

- "Brute force" method for single product price increase—Example 2
  - We can use the brute force method for a single product price when *dollar margins* differ among products within the candidate market (here, $\$m_2 = 1.75$; $\$m_3 = 1.35$)
    - Of firm G1's 10 marginal customers, 4 divert to firm G2 and 3 divert to firm G3
    - A "brute force" accounting calculation is almost always the best way to analyze the profitability of a single-product SSNIP when dollar margins differ in the candidate market

Gourmet pizza--Single product price increase

(brute force method--different margins for candidate market of three firms)

Out of every 100 units sold by Firm G1 (the firm experiencing the price increase):

Data

For Firm G1:		**For Firm G2:**		**For Firm G3:**	
Total units retained	90				
Total unit diverted	10	Total units recaptured	4	Total units recaptured	3
G1 price	$3.00				
G1 margin	$1.50	G2 $margin	$1.75	G2 $margin	$1.35
SSNIP (%)	5.00%				
SSNIP ($)	$0.15				
Gain on retained units	$13.50	Gain on recaptured units	$7.00	Gain on recaptured units	$4.05
Loss on diverted units	-$15.00				
Total gross gain to HM	$24.55	= $13.50 + $7.00 + $4.05			
Total gross loss to HM	-$15.00				
NET GAIN	**$9.55**				

Since the net gain to the hypothetical monopolist is positive, the candidate market is a relevant market

One-product SSNIP recapture test formulas

- The test
  - *Proposition*: A candidate market is a relevant market under a one-product SSNIP recapture test for Product 1 if:

$$R_1 > R^1_{Critical} = \frac{\delta p_1}{\$m_{RAve}} \quad \left(= \frac{\$SSNIP_1}{\$m_{RAve}} \right)$$

That is, if this condition is satisfied, a hypothetical monopolist could profitably increase the price of Product 1 by δ

where $\$m_{RAve}$ is the *recapture share-weighted average* of the products in the candidate market that are not subject to the SSNIP and may recapture lost marginal sales from the products subject to the SSNIP

  - *Observations*:
    1. NB: Any product in the candidate market can be Product 1
       - I assume that the SSNIP would apply to Product 1 to simplify the notation
    2. Under the Merger Guidelines, as long a one product satisfies the one-product SSNIP recapture test, the candidate market is a relevant market
       - This is true even if all the other products in the candidate market fail the test

The one-product SSNIP test

Optional

- Corollaries
  - *Corollary 1*: When the *percentage margins* $\%m_o$ of the other products are the same (m_o), the test becomes:

$$R_1 > \frac{\delta}{\%m_o}\frac{p_1}{p_{RAve}},$$

That is, if this condition is satisfied, a hypothetical monopolist could profitably increase the price of Product 1 by δ

where p_{RAve} is the recapture share-weighted average of the prices of the other products in the candidate market (i.e., all the products except for product 1)

  - *Corollary 2*: When the prices of the other products are the same (p_o), the test becomes:

$$R_1 > \frac{\delta}{m_{RAve}}\frac{p_1}{p_o},$$

where m_{RAve} is the recapture share-weighted average of the percentage gross margins of the other products in the candidate market (i.e., all the products except for product 1)

  - *Corollary 3:* When the prices of all products in the candidate market are the same but the margins differ, the test becomes:

$$R_1 > \frac{\delta}{m_{RAve}}.$$

Exam hint: You will not have to apply any of the formulas on this slide. If the exam question calls for the use of a one-product SSNIP test, you will be able to apply it using brute force.

The one-product SSNIP test

- Corollaries
  - *Corollary 4 (symmetric products)*: When all products in the candidate market have the same prices p and margins m_o, the test becomes:

You should know this

$$R_1 > \frac{\delta}{m_o}.$$

- NB: Even when the prices and margins of all products are identical in the premerger market equilibrium, if the products can be differentiated by other attributes such as quality or reputation, prices and margins may divert postmerger
  - In such markets, a one-product SSNIP test can be used even when all prices and margins in the candidate market are identical because the hypothetical monopolist could increase the price of only one product and still retain some sales from that product (so that there will be some gross gain on that product's inframarginal sales)

One-product SSNIP recapture test

- Technical caution
  - $R^{1}_{Critical}$ is specific to product 1 and is a function of the quantity of marginal sales lost by product 1 in the wake of a SSNIP
  - This is because $\$m$ for any firm depends on $\%m$, which in turn depends on the elasticity of demand to satisfy the Lerner condition for a profit-maximizing firm
  - Changing the quantity of lost marginal sales changes the elasticity and implies a different profit-maximizing margin and hence a different critical recapture ratio

One-product SSNIP recapture tests: Examples

- Example 1A: Single-product SSNIP test (symmetric products)
  - Gourmet pizzas
    - Assume that for a single product price increase of 5%, the hypothetical monopolist would retain 10 out of every 100 customers. Of the 10 lost customers, 7 would divert to another gourmet pizza and 3 would go to a standard pizza. Assume that the price of gourmet pizzas is $3.00 and that the dollar margin is $1.50 per pie for all producers.
    - *Query*: Under the single-product 5% SSNIP test, are gourmet pizzas a relevant product market?
    - *Answer*:

      The products are symmetrical (identical prices and margins), so use the one-product SSNIP test for symmetric products: The one-product SSNIP is profitable if $R_1 > \delta/m$.

      δ = 0.05
      m = 0.5%
      So δ/m = 10%

      R_1 = 70%

      $R_1 > \delta/m$, so the one-product SSNIP test is satisfied, the hypothetical monopolist can profitably increase the price of product 1 by 5%, and gourmet pizzas satisfy the HMT. (The same result as we obtained earlier).

      Generally, if R_1 > 10% in this problem, the one-product SSNIP test will be satisfied.

One-product SSNIP recapture tests: Examples

- Example 2A: Single-product SSNIP test (same price, different margins)
  - We can use Corollary 3 when the prices of the products in the candidate market are the same but the margins differ
    - Product 2 recaptures 2 units at $\$m_2 = 1.75$
      Product 3 recaptures 5 units at $\$m_3 = 1.05$
  - *Answer*:

The products different dollar margins, so one-product SSNIP for Product 1 is profitable for a hypothetical monopolist if:

$$R_1 > \frac{\delta}{m_{RAve}}.$$

where m_{RAve} is the recapture share-weighted average of the percentage margins of the other products in the candidate market (i.e., all the products except for product 1)

	Gourmet pizzas				
	1	2	3		
Price	3	3	3		From problem
$margin	1.5	1.75	1.05		From problem
Loss	10				From problem
#Recapture (units)		2	5		From problem
%Recapture		28.57%	71.43%	100.00%	Recapture shares (% of total recapture)
$margin contribution		0.5000	0.7500		%Recapture times $margin
Average m_{RAVE}				1.2500	Sum of $margin contributions
$\%m_{RAve}$				0.416666667	Average m_{RAVE}/price
δ	5%				From problem
δ/m_{RAve}	12.00%				Calculated
R_1	70.00%				From problem

$R_1 > \delta/m_{RAve}$, so the one-product SSNIP test is satisfied, the hypothetical monopolist can profitably increase the price of product 1 by 5%, and gourmet pizzas are a relevant market (The same result as we obtained earlier).

One-product SSNIP recapture test

- A caution
  - In a well-known paper, Katz and Shapiro derived a different condition for a one-product SSNIP recapture test:

$$R_1 > \frac{\delta}{\delta + m_{RAve}},$$

where the prevailing prices for all products are equal.[1]

This condition is INCORRECT for a one-product SSNIP test!

  - The problem is that the Katz-Shapiro proof assumed that the recaptured sales would be sold at the original price of the recapturing product *increased* by the SSNIP, but in a one-product SSNIP recapture test the recaptured sales would be sold at the *original* prices charged by the other firms in the market
    - I note this only because this incorrect condition is still in circulation
    - However, it is the correct test when all the products in the candidate market are increased by the same SSNIP

[1] *See* Michael Katz & Carl Shapiro, *Critical Loss: Let's Tell the Whole Story*, Antitrust, Spring 2003, at 53 & n.25.

Uniform SSNIPs and the Aggregate Diversion Ratio Test

Uniform SSNIP recapture test

- Extension to a uniform SSNIP
  - Some economists have attempted to create a recapture test for hypothetical monopolist imposing a *uniform* SSNIP in a differentiated candidate market
  - *Remember*: With recapture, the net profits of the hypothetical monopolist from a price increase in each product *i* taken individually comprise—
    - The net gain on the inframarginal sales of product *i* resulting from the price increase
    - MINUS the net loss on the sales of product *i* resulting from the price increase
    - PLUS all incremental profits earned by other firms in the candidate market from the capture of sales diverted from product *i*
  - When the hypothetical monopolist increases all prices in the candidate market by a SSNIP, its overall profit is the sum of the net profits from each of the individual products

Uniform SSNIP recapture test

- Extension to a uniform SSNIP
  - Observations:
    1. In a single-product SSNIP test, the price of only one product in the candidate market is increased and the diversion and recapture ratios are determined holding the prices of all other firms in the candidate market constant
    2. In a uniform SSNIP test, the price of all products in the candidate market are increased and the diversion and recapture ratios are determined using these higher prices for all products in the candidate market
    3. The diversion ratios are likely to be different in the two situations
       - With the one-product SSNIP, the diversion ratios are from the higher priced SSNIP product to the originally priced other products
       - With a uniform SSNIP, the diversion ratios are from one higher-priced SSNIP product to (now less attractive) other higher-priced SSNIP products

       In general, we can expect the diversion ratios with a one-product SSNIP to be higher than the diversion ratios for a uniform SSNIP

    4. Whether you use a one-product SSNIP recapture test or a uniform SSNIP recapture test will depend on whether you have data on one-product SSNIP recapture rates or on uniform SSNIP recapture rates

Uniform SSNIP recapture test

- The aggregate diversion ratio test for a uniform SSNIP
  - *Proposition 1*. A hypothetical monopolist earns positive profits on product *i* from a uniform SSNIP in the candidate market if:

$$R_i^U > \frac{p_1\delta}{\$m_{RAve} + \$SSNIP_{RAve}} = \frac{\$SSNIP_1}{\$m_{RAve} + \$SSNIP_{RAve}} \equiv R_{Critical}^U$$

Call the right-hand side the *critical recapture rate* for a uniform SSNIP.

New term accounting for higher margins for recapturing products

  - *Corollary (symmetric products)*: If the products in the candidate market are symmetric (same prices *p* and percentage margins *m*), then a hypothetical monopolist earns positive profits on product *i* from a uniform SSNIP in the candidate market if:

$$R_i^U > \frac{p_i\delta}{\$m_{RAve} + \$SSNIP_{RAve}} = \frac{p\delta}{pm + p\delta} = \frac{\delta}{\delta + m}$$

The critical recapture rate in the symmetric case is the same as the percentage critical loss

    - In the literature and some cases, the symmetric case is the variation most commonly discussed
      - True in some cases even when the prices and dollar margins of the products in the candidate market differ (presumably when the price differences within the candidate market are small relative to the price differences between product inside and outside the candidate market)

Uniform SSNIP recapture test

- A sufficiency test
  - *Proposition 2 (sufficiency)*: If:

$$R_i^U \geq R_{Critical}^U \quad \text{for all firms } i \text{ in the candidate market}$$

$$R_j^U > R_{Critical}^U \quad \text{for some firm } j \text{ in the candidate market}$$

then the uniform SSNIP will be profitable for the hypothetical monopolist and the candidate market will be a relevant market

  - Proposition 2 simply says that if, in the wake of a uniform SSNIP, the hypothetical monopolist at least breaks even on every product in the candidate market and makes strictly positive profits on at least one product, the uniform SSNIP is profitable
  - Proposition 2 only states a *sufficient* condition
    - Failure to satisfy the test does not mean that the candidate market is not a relevant market
    - It is possible for a hypothetical monopolist to make positive profits from a uniform SSNIP even if it losses money in some products as long as it offsets those losses from positive profits in other products

This test is often misleadingly called the "aggregate diversion ratio test" in the literature and in cases (fails to distinguish the one-product SSNIP recapture test)

Uniform SSNIP recapture test

- Example: Aggregate diversion ratio test
  - Differentiated three-product candidate market
    - Parameters (symmetric products)
      - Each product has the same price of $100
      - Each product has a margin of 60%
      - Assume a uniform SSNIP of 5% across all products
    - Then use the symmetric version of the aggregate diversion ratio test:

$$R^{U}_{Critical} = \frac{\delta}{\delta + m} = \frac{0.05}{0.05 + 0.60} = 0.0769 \text{ or } 7.69\%$$

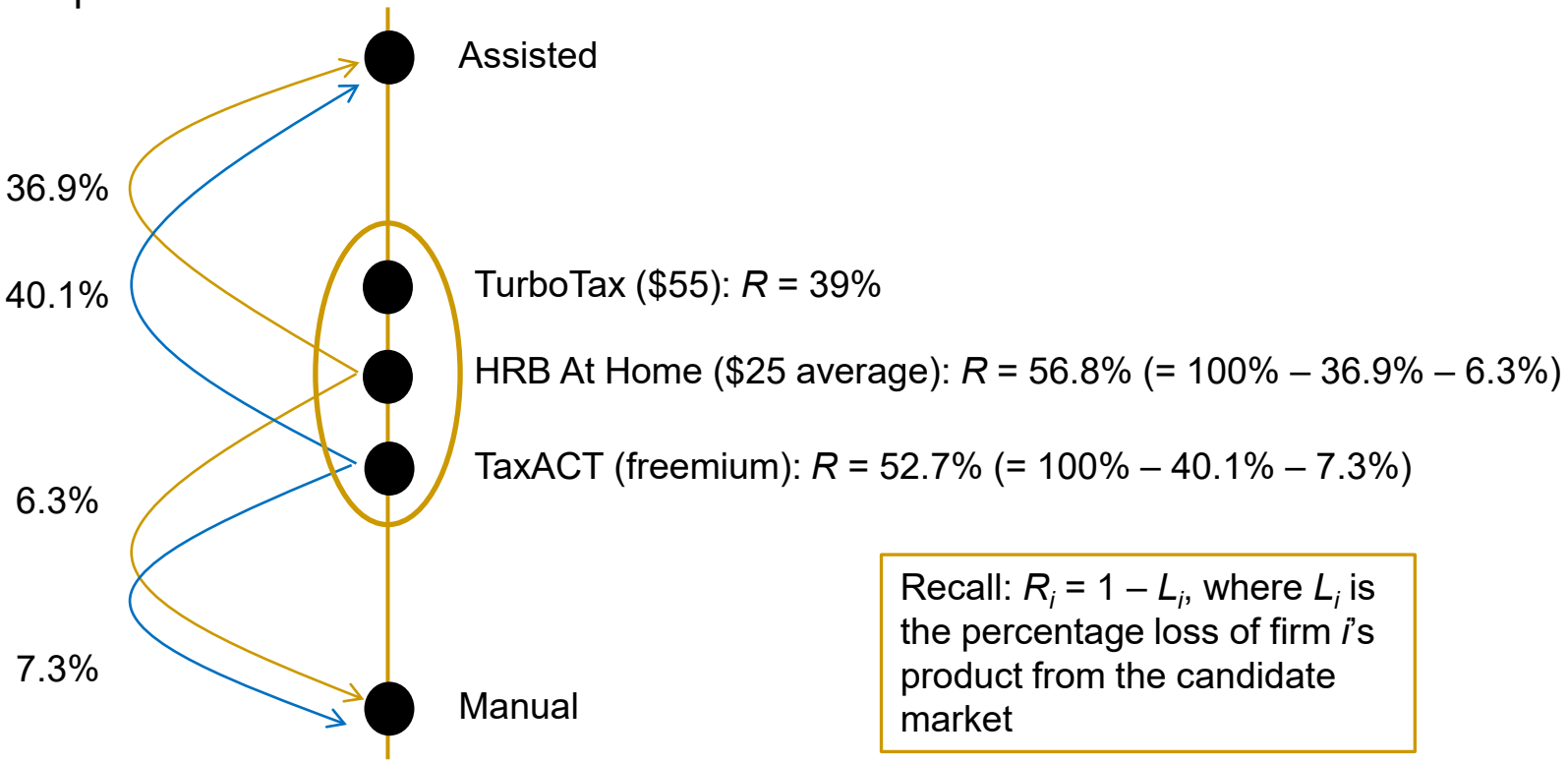
    - Suppose that the uniform SSNIP generates the following actual recapture rates:

Product	q	Δq	Recapture Units	Recapture Rate (R^{U}_{i})
A	1200	100	30	30.00%
B	900	75	12	16.00%
C	600	50	10	20.00%

    - *Result*: Since the smallest R^{U}_{i} (16.00%) is greater than $R^{U}_{Critical}$ (7.69%), a hypothetical monopolist can profitably sustain a 5% uniform price and so the three products is a relevant market

Uniform SSNIP recapture test

- Warren-Bolton analysis in H&R Block/TaxACT
  - Recall that Warren-Boulton relied on IRS switching data to estimate aggregate recapture ratios



Recall: $R_i = 1 - L_i$, where L_i is the percentage loss of firm *i*'s product from the candidate market

  - *Query*: Does the use of switching data indicated that the estimated R_i's are for a single-product SSNIP or a uniform SSNIP?

"Aggregate diversion ratio"

- Warren-Bolton analysis in H&R Block/TaxACT
  1. *Question*: Is DDIY a relevant market under a uniform SSNIP test?
  2. *Critical aggregate diversion ratio* ($R^U_{Critical}$)
     - Starting point: Start with DDIY products (HRB, TaxACT, and TurboTax)
     - SSNIP (δ): 10%
     - Gross margin (m): 50% on each product (Warren-Bouton assumption)
     - Then:

$$R^U_{Critical} = \frac{\delta}{\delta + m} = \frac{10\%}{10\% + 50\%} = 16.7\%$$

  3. *Actual loss*: Determine aggregate diversion ratios (recapture rates R^U_i) for each product
     - *Test*: If each $R^U_i \geq R^U_{Critical}$ for all products in the candidate market and $R^U_i > R^U_{Critical}$ for at least one product i, then product grouping is a market
     - Using IRS switching data as a proxy for R, Warren-Bolton found:
       - HRB: R_{HRB} = 57%
       - TaxACT: R_{TaxACT} = 53%
       - TurboTax: $R_{TurboTax}$ = 39%

       } > 16.7%
  4. *Conclusion* (Warren-Boulton)
     - Since each $R^U_i > R^U_{Critical}$, a hypothetical monopolist of the DDIY product could profitably raise price by a uniform SSNIP and therefore DDIY was a relevant product market

Uniform SSNIP recapture test

- A "presumptive" test
  - Some commentators suggest that in a uniform SSNIP test, *the single-product SSNIP diversion and recapture rates* can be used in Proposition 2 to create a *presumption* that the condition is satisfied and the candidate market is a relevant market[1]
  - But the recapture ratios across products in the candidate market will at least as high and likely higher using a single-product SSNIP than a uniform SSNIP because of the prices of substitute products will be lower in the former situation. Therefore, we should expect:

$$R_i^S \geq R_i^U.$$

    - As one analyst noted:

> Unless the different products within a candidate antitrust market increase prices by different amounts, it is likely there will be little substitution among the products within the candidate market. Consequently, when there is a price increase across all products in the candidate market the value of the Aggregate Diversion Ratio is likely to be close to zero.[2]

    - Consequently, the presumptive test must be used with great care, if used at all

[1] Michael Katz & Carl Shapiro, *Critical Loss: Let's Tell the Whole Story*, Antitrust, Spring 2003, at 54 (footnote omitted).
[2] Barry Harris, *Recent Observations About Critical Loss Analysis* (undated), https://www.justice.gov/atr/recent-observations-about-critical-loss-analysis.

Implementations of the Hypothetical Monopolist Test: SUMMARY

Summary

1. Prevailing (premerger) conditions
   - Competitive interactions establish premerger equilibrium in prices and production quantities
   - Also establishes other competitive variables such as product attributes, but we do not have good models for this
2. Hypothetical monopolist test
   - Seeks to identify a product grouping (relevant market) that contains the product of one or both of the merging firms in which market power could be exercised
   - *Test*: Whether a hypothetical monopolist of the product grouping could profitably implement "small but significant nontransitory increase in price" (SSNIP) above the prevailing prices in one or more products in the grouping, including at least one of the products of the merging firms
   - The test is satisfied when the profits gained from the increase in margin in the inframarginal sales outweigh the profits lost from the loss of the marginal sales

Summary

3. Critical loss in homogeneous product markets
   - A homogeneous product market supports only one price
     - All producers sell an identical product and purchasers buy from the seller that offers the lowest price—this forces all sellers to sell at the same price
     - There is no recapture in this market of lost marginal sales
   - In the standard models, the hypothetical monopolist increases price by reducing output, which creates a scarcity in the product. Inframarginal customers then bid up the price in order to clear the market.
   - While small reductions in output may increase profits, sufficiently large reductions will reduce profits below the prevailing level
   - The output reduction beyond which any further reduction is unprofitable is called the *critical loss*
     - The critical loss is the output reduction where the profits gained from the increase in margin in the inframarginal sales just equal the profits lost from the loss of the marginal sales
   - *Test*: If the actual loss of sales due to a SSNIP is less than the critical loss, the SSNIP will be profitable and the candidate market will be a relevant market

Summary

4. One-product SSNIP tests in differentiated products markets
   - In differentiated products market, different products can have different prices and margins
   - The Merger Guidelines recognize as relevant markets products grouping where the hypothetical monopolist can profitably increase the price of one product, provided it is a product of one of the merging firms
   - The same basic critical loss analysis applies with one significant modification: When the product with the SSNIP loses marginal sales, some of those lost sales are "recaptured" by other products in the candidate market
   - The hypothetical monopolist earns profits on the recaptured sales that can be used to offset profit losses from lost marginal sales due to the SSNIP
     - The profit for each unit recaptured by any "other" product is the other product's original dollar margin (since the price of the recapturing product is not increased by the SSNIP)
   - The recapture rate on the lost marginal units that is just necessary for the hypothetical monopolist to break even with a SSNIP on one product is called the (one-product) *critical recapture rate*
     - The critical recapture rate is specific to the product on which the SSNIP is imposed, the diversion ratios from that product to other products in the market, and the dollar margins of all products
   - *Test*: For the product on which the SSNIP is imposed, if the actual recapture rate exceeds the critical recapture rate, the SSNIP will be profitable and the candidate market will be a relevant market

Summary

4. One-product SSNIP tests in differentiated products markets
   - In differentiated products market, different products can have different prices and margins
   - The Merger Guidelines recognize as relevant markets products grouping where the hypothetical monopolist can profitably increase the price of one product, provided it is a product of one of the merging firms
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   - *Test*: For the product on which the SSNIP is imposed, if the actual recapture rate exceeds the critical recapture rate, the SSNIP will be profitable and the candidate market will be a relevant market

Summary

5. Uniform SSNIP tests in differentiated products markets
   - In some differentiated products markets, we may not have information on *one-product SSNIP recapture ratios*
     - A one-product SSNIP recapture ratio is the recapture ratio for the product with the SSNIP holding the prices of all other products in the candidate market constant
   - Instead, we may only have data on *uniform SSNIP recapture ratios*
     - A uniform SSNIP recapture ratio is the recapture ratio for a given product when all the products in the candidate market are subject to the SSNIP
     - Switching data usually provides information on uniform SSNIP recapture ratios, not one-product recapture ratios
   - *Rule*:
     - Use a one-product SSNIP recapture test when you have one-product SSNIP recapture ratios
     - Use a uniform SSNIP recapture test when you only have uniform SSNIP recapture ratio
       - Switching data is likely to be a better proxy for uniform SSNIP recapture ratios than for one-product SSNIP recapture ratios
   - *The test*:
     - The analysis and the test is the same for a uniform SSNIP recapture test as it is for the one-product SSNIP recapture test *except* that the margins of the recapturing products in the candidate market are increased by the SSNIP

Merger Simulation

Merger simulation

- Warren-Boulton
  - In addition to critical loss analysis, used "merger simulation" to predict price increases resulting from the merger to test whether a hypothetical monopolist would increase prices postmerger more than a SSNIP
- Warren–Boulton results
  - Used Bertrand pricing model
  - Predicted price increases as a result of the merger—
    - TaxACT 83%
    - HRB 37%
    - TurboTax 11%
- Court
  - Confirms DDIY as a relevant market
    - But discusses in competitive effects analysis

As did the Court, we will defer an examination of the Warren-Boulton simulation model until the anticompetitive effects analysis

Defendants' Market Definition Rebuttal

Dr. Christine Meyer

- Three lines of attack:
  1. Warren-Boulton's analysis is unreliable
  2. Warren-Boulton's analysis failed the smallest market principle
  3. More reliable analysis shows that the relevant product market is all tax preparation methods

Warren-Boulton's analysis is unreliable

1. IRS switching data did not test for cross-price elasticity
   - Merging parties' primary critique
   - Court:
     - Agreed, but still probative when keeping the limitations in mind (especially since it is the best data available)—but not conclusive
2. DDIY excludes assisted (closest substitute to HRB) and manual (closest to TaxACT)
   - Meyer used "simulated diversion data" (from survey) to detect close substitutes
   - Court:
     - Survey data unreliable (omitted prices for many choices)
     - Meyer erred in aggregating all assisted into one product and all manual into one product, while disaggregating within DDIY
3. Even using IRS switching data, RWB did not include all closest substitutes
   - Court: Not correct if products are properly disaggregated:
     - HRB: 56.8% to DDIY; 36.9% to assisted; 6.3% to manual
     - TaxACT: 52.7% to DDIY; 40.1% to assisted; 7.3% to manual

Failed the "smallest market principle"

- Merging parties' criticism:
  - Using critical loss analysis, HRB+Intuit and TaxACT+Intuit alone are both smaller relevant markets
    - Presumably, HRB+Intuit was not a market under the HMT because of the large diversions to Intuit
  - Tried to discredit Warren-Boulton's initial provisional market of all DDIY products
- Warren-Boulton response:
  - Markets need to make sense
  - These smaller markets do not make sense
    - Presumably in light of functional similarities and document evidence
- Court:
  - Warren-Boulton's critical loss analysis is supportive of DDIY as the relevant market, but not dispositive

Meyer's affirmative market definition case

1. Review of party documents (rejected by court)
2. Assisted is the most popular method across complexity levels
   - Simple returns: 44% assisted
     37% DDIY
   - Court:
     - Still correlates with complexity
     - Says nothing about how consumers would switch in the wake of a SSNIP

Meyer's affirmative market definition case

3. "Pricing simulator" (dynamic excel spreadsheet)
   - Developed by HRB in 2009—uses discrete choice survey of 6119 respondents
   - Choices:
     - Online DIY
     - Software DIY
     - CPA/accountant
     - Manual (including friends/family)
   - Meyer
     - Used simulator to calculate diversion ratios
     - Found HRB largest diversion to CPA/accountant, second largest to manual
   - Court: Analysis critically flawed
     - Not all of the options in the survey had prices associated with them (including CPA/accountant HRB retail office, pen & paper)
     - Respondents appear not to have appreciated or considered price differences → renders analysis unreliable
   - Warren-Boulton
     - Pricing simulator also has demand increasing for some products (TaxCut Online Basic) with price increases (violates assumption of downward-sloping demand curve)
     - Some results inconsistent and anomalous

Meyer's affirmative market definition case

4. 2011 email survey of TaxACT customers
   - Jointly commissioned by TaxACT and HRB
   - *One primary question*: "If you had become dissatisfied with TaxACT's price, functionality, or quality, which of these products or services would you have considered using to prepare your federal taxes?"
   - Provided a list of options and asked respondent to select—
     - All applicable alternative options, and
     - The respondent's top choice
   - Sent out 46,899 requests—ultimately 1089 responded
   - Survey results showed that—
     - 27-34% would switch to manual
     - 4-10% to HRB At Home
   - Meyer: Shows that TaxACT and HRB are not close substitutes
   - Dr. Ravi Dhar (FTC's rebuttal expert)
     - Survey asks about switching, not diversion in response to price changes
     - IRS data does same and is much more complete and extensive
   - Court:
     - Survey is not reliable – REJECTED
     - Other critiques (e.g., high level of nonresponses (>98%) could have biased result)

Conclusion on expert testimony

- Court:
  - Viewed Warren-Boulton analysis as more persuasive generally
  - With Meyer's testimony based on the pricing simulator and email survey rejected, little else remains of her affirmative market definition testimony
  - Although RWB analysis is not conclusive, it tends to confirm conclusions drawn from other evidence in the case

Court finding of fact: DDIY is the relevant product market

Unit 9: H&R Block/TaxACT

Part 2. Anticompetitive Effect in Horizontal Mergers

a. *PNB* presumption
b. Coordinated effects
c. The elimination of a "maverick"
d. Unilateral effects

Professor Dale Collins
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October 17, 2024


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Section 7 of the Clayton Act

- Section 7 supplies the antitrust standard to test acquisitions:

> No person engaged in commerce or in any activity affecting commerce shall acquire, directly or indirectly, the whole or any part of the stock or other share capital and no person subject to the jurisdiction of the Federal Trade Commission shall acquire the whole or any part of the assets of another person engaged also in commerce or in any activity affecting commerce, where in any line of commerce or in any activity affecting commerce in any section of the country, *the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly.*[1]

- Test of anticompetitive effect under Section 7
  - Whether "the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly" in any relevant market
  - *Incipiency standard*: The Supreme Court has interpreted the "may be" and "tend to" language in the anticompetitive effects test to—
    - Require proof only of a *reasonable probability* that the proscribed anticompetitive effect will occur as a result of the challenged acquisition
    - *Not* require proof that an actual anticompetitive effect will occur

[1] 15 U.S.C. § 18.

"May be to substantially lessen competition"

- No operational content in the statutory language itself
  - What does it mean to "substantially lessen competition"?
  - Judicial interpretation has varied enormously over the years
- *Modern view*:[1] Transaction threatens—with a reasonable probability—to hurt some identifiable set of customers through:
  - Increased prices
  - Reduced market output
  - Reduced product or service quality
  - Reduced rate of technological innovation or product improvement
  - (Maybe) reduced product diversity[2]

These are called *anticompetitive effects*

A firm that has the power to produce or strengthen an anticompetitive effect is said to have *market power*

- Forward-looking analysis
  - Compare the postmerger outcomes with and without the deal
  - Can view potential competitors today as future competitors tomorrow

[1] The modern view dates from the late 1980s or early 1990s, after the agencies and the courts had assimilated the 1982 DOJ Merger Guidelines.

[2] The idea that reduced product diversity may be a cognizable customer harm was formally introduced in the 2010 DOJ/FTC Horizontal Merger Guidelines.

"May be to substantially lessen competition"

- The 2023 Merger Guidelines
  - The Neo-Brandeisians who currently head the FTC and the Antitrust Division believe that the antitrust laws should protect the *competitive process,* rather than solely focusing on preventing consumer (or supplier) harm from the exercise of market power
    - Neo-Brandeisians focus on long-term effects of market concentration, including threats to democracy and wealth inequality, not just short-term consumer impacts
    - As a result, they believe that high-concentration mergers should be unlawful under Section 7, even if they offer short-term efficiencies or consumer benefits
  - However, the 2023 Merger Guidelines do not adopt a Neo-Brandeisian approach but rather largely preserve the consumer welfare standard as the primary framework for interpreting and enforcing antitrust laws, although with some adjustments:
    1. Expands the consumer welfare standard to include effects on suppliers, especially labor
    2. Emphasizes the anticompetitive potential of mergers on nonprice factors—including reduced product quality, reduced product variety, reduced service, or diminished innovation—and not just price
    3. Broadens concerns to include potential long-run effects, rather than focusing on short-run effects as previous guidelines did
    4. Establishes new presumptions and tests that expand the reach of antitrust law—at least presumptively—to find mergers anticompetitive that the previous guidelines would not
       - Including lower HHI thresholds for triggering a presumption of anticompetitive harm in horizontal mergers

The Prima Facie Case: The *PNB* Presumption

Introduction

- Likely competitive effect
  - Having established the dimensions of the relevant market in which to assess the merger, the next step in the proof of the prima facie case is to assess the merger's likely competitive effect in this market
- *Baker Hughes*
  - Recognizes that a prima facie showing of the requisite anticompetitive effect may made be made through the *Philadelphia National Bank* presumption
- The *PNB* presumption

> Specifically, we think that a merger which **produces a firm controlling an undue percentage share of the relevant market**, and **results in a significant increase in the concentration of firms** in that market is so inherently likely to lessen competition substantially that it must be enjoined in the absence of evidence clearly showing that the merger is not likely to have such anticompetitive effects.[1]

[1] United States v. Philadelphia National Bank, 374 U.S. 321, 363 (1963).

The *PNB* presumption

- The *H&R Block* court uses the Merger Guidelines thresholds as triggers for the *PNB* presumption

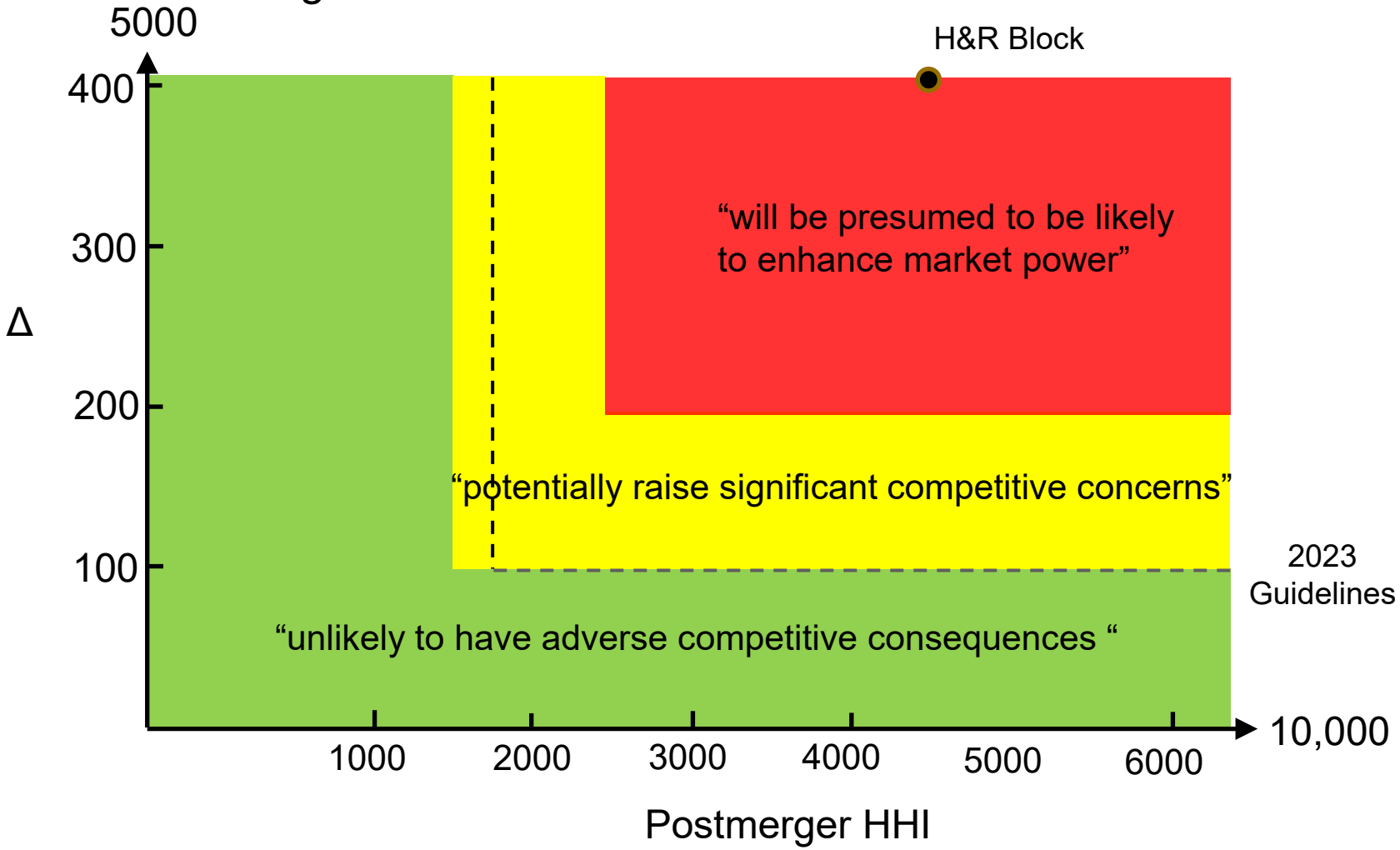
	Premerger Shares	HHI Contribution	
Intuit	62.2%	3869	The square of the firm's market share
HRB	15.6%	243	
TaxACT	12.8%	164	
Others (6)	9.4%	15	Residual share (9.4%) divided by 6 firms and added six times
	100.0%	4291	The sum of the squared shares of all of the firms in the market
Combined share	28.4%		
Premerger HHI		4291	
Delta (Δ)		400	2 × HRB share × TaxACT share
Postmerger HHI		4691	Sum of the premerger HHI + Δ

"Violates" the 2010 Guidelines:
Postmerger HHI exceeds 2500 and delta exceeds 200
2023 Guidelines: 1800 100

Note: The court appears to have assumed that six equal-sized firms are in the "other" category

The *PNB* presumption

- The 2010 Merger Guidelines thresholds



HHIs in Successful DOJ/FTC Challenges

- The DOJ and FTC have not brought "close" cases in alleged markets

Agency	Complaint	Defendant	Combined share[1]	PreHHI	PostHHI	Delta	Deal Status
DOJ	2021	Bertelsmann	49	2220	3111	891	Preclosing
FTC	2020	Hackensack	≈50	1994	2835	841	Preclosing
FTC	2020	Peabody Energy	68	2707	4965	2258	Preclosing
FTC	2018	Wilhelmsen	84.7	3651	7214	3563	Preclosing
FTC	2017	Sanford Health	98.6[2]	5333	9726	4393	Preclosing
DOJ	2017	Energy Solutions	100	6040	10000	3960	Preclosing
DOJ	2016	Anthem	47	2463	3000	537	Preclosing
DOJ	2016	Aetna			>5000[3]		Preclosing
FTC	2016	Penn State Hershey	64	3402	5984	2582	Preclosing
FTC	2015	Advocate Heath	55	2094	3517	1423	Preclosing
FTC	2015	Staples	75[4]	3036	5836	2800	Preclosing
FTC	2015	Sysco	71[5]	3153	5519	1966	Preclosing

[1] When the complaint alleged multiple markets, the market with the most problematic highest HHIs is reported.
[2] Pediatricians market. The FTC alleged three other physician markets. The lowest problematic delta was in OB/GYN with a premerger HHI of 6211, a postmerger HHI of 7363, and a delta of 1152.
[3] The DOJ challenged Aetna's proposed acquisition of Humana in 17 geographic markets. The complaint did not provide HHI statistics for each market, although it noted that in 75% of the markets, the post-HHI would be greater than 5000.
[4] The FTC also challenged the transaction in 32 alleged relevant local geographic markets, with the smallest combined share being 51% and the largest being 100%.
[4] The complaint alleged multiple markets in food distribution. The numbers given are for national broadline distribution.

HHIs in Successful DOJ/FTC Challenges

- The DOJ and FTC have not brought "close" cases in alleged markets

Agency	Complaint	Defendant	Combined Share[1]	PreHHI	PostHHI	Delta	Deal Status
DOJ	2015	Electrolux		3350[2]	5100	1750	Preclosing
DOJ	2013	Bazaarvoice	68	2674	3915	1241	Consummated
FTC	2013	Saint Alphonsus	57	4612	6129	1607	Consummated
DOJ	2013	US Airways	100[3]	5258	10000	4752	Preclosing
DOJ	2013	ABInbev	100	5114	10000	4886	Preclosing
FTC	2011	OSF Healthcare	59	3422	5179	1767	Preclosing
FTC	2011	ProMedica	58	3313	4391	1078	Preclosing
DOJ	2011	H&R Block	28	4291	4691	400	Preclosing
FTC	2009	CCC	65	4900	5460	545	Preclosing
FTC	2008	Polypore	100	8367	10000	1633	Consummated
FTC	2007	Whole Foods	100[4]		10000		Preclosing
FTC	2004	Evanston	35	2355	2739	384	Consummated
DOJ	2003	UPM-Kemmene	20	2800	2990	190	Preclosing

[1] When the complaint alleged multiple markets, the market with the most problematic highest HHIs is reported.
[2] The complaint alleged three markets. The numbers given are for ranges. Cooktops and wall ovens were similar
[3] The complaint alleged 1043 markets.
[4] In some local geographic markets, this was a merger to monopoly in the FTC's alleged product market of premium, natural, and organic supermarkets.

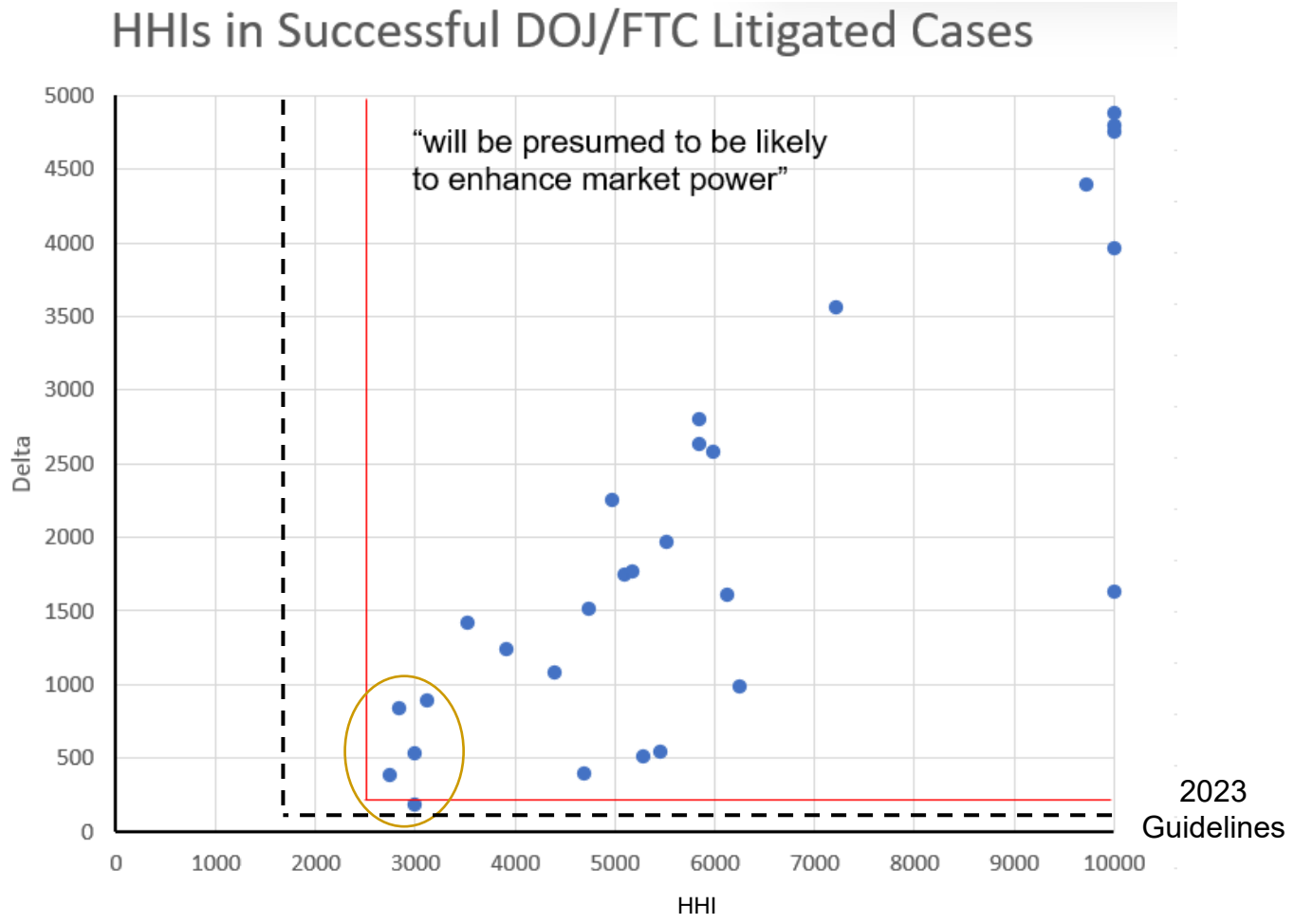
HHIs in Successful DOJ/FTC Challenges

- The DOJ and FTC have not brought "close" cases in alleged markets

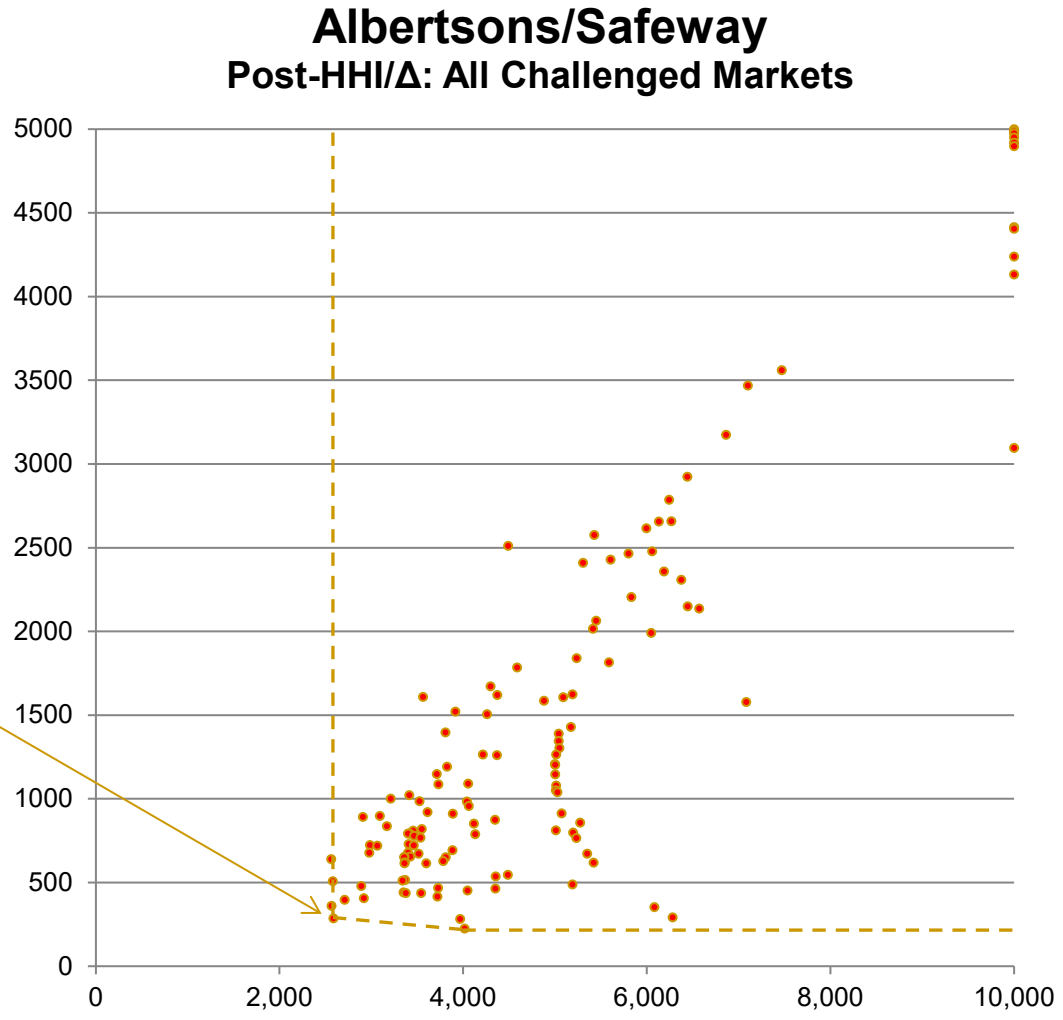
Agency	Complaint	Defendant	Combined Share[1]	PreHHI	PostHHI	Delta	Deal Status
FTC	2002	Libbey	79	5251	6241	990	Preclosing
FTC	2001	Chicago Bridge	73	3210	5845	2635	Consummated
FTC	2000	Heinz	33	4775	5285	510	Preclosing
FTC	2000	Swedish Match	60	3219	4733	1514	Preclosing
DOJ	2000	Franklin Electric	100	5200	10000	4800	Preclosing

[1] When the complaint alleged multiple markets, the market with the most problematic highest HHIs is reported.

HHIs in Successful DOJ/FTC Challenges



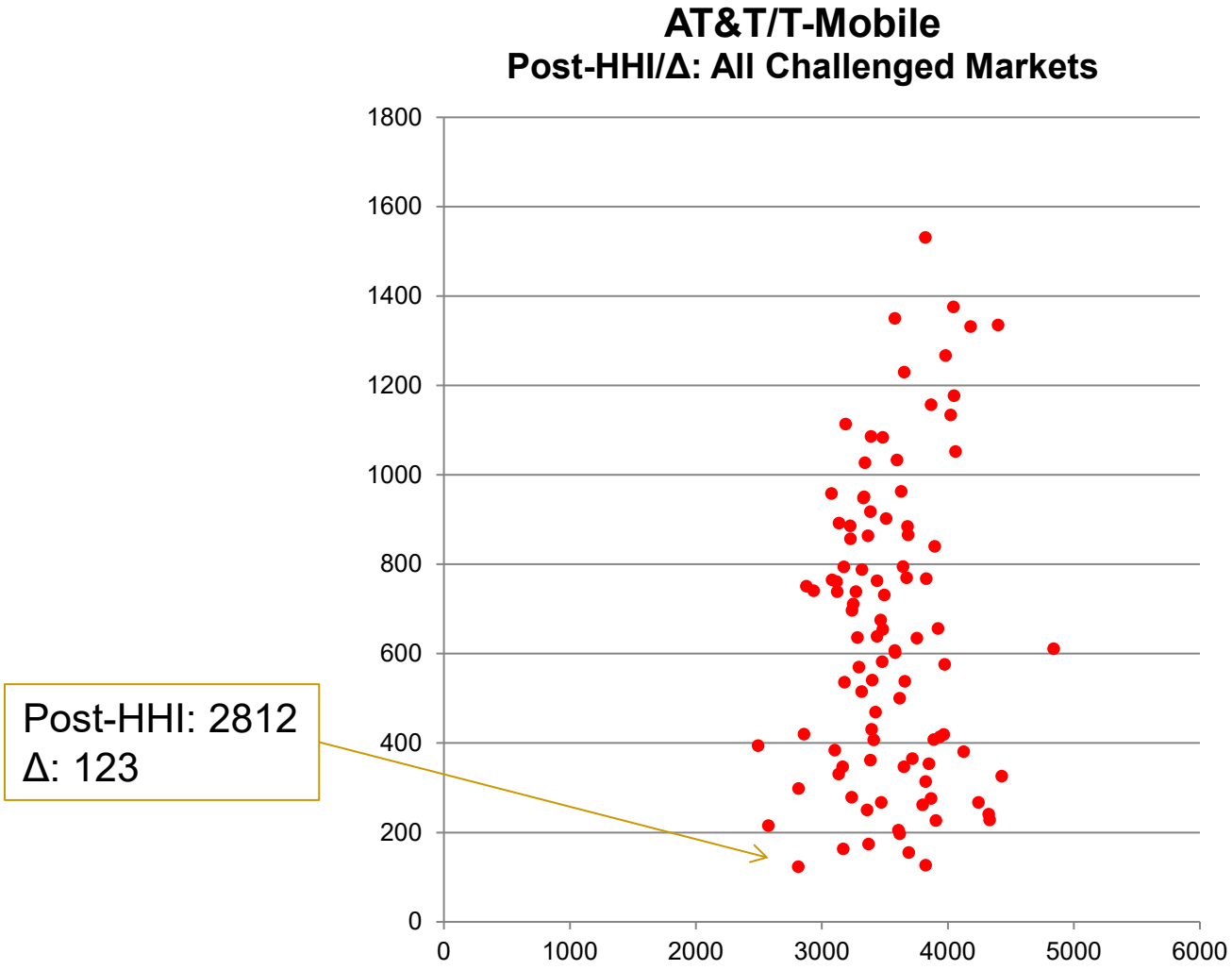
Example: Albertsons/Safeway



Post-HHI: 2586
Δ: 285

6 to 5	5
5 to 4	27
4 to 3	43
3 to 2	42
2 to 1	13
	130

Example: AT&T/T-Mobile



The 2023 Merger Guidelines

- Two significant changes in the HHI thresholds
  - Significantly lowers the HHI thresholds
  - Creates a new 30% threshold for the merging firm with the ΔHHI > 100

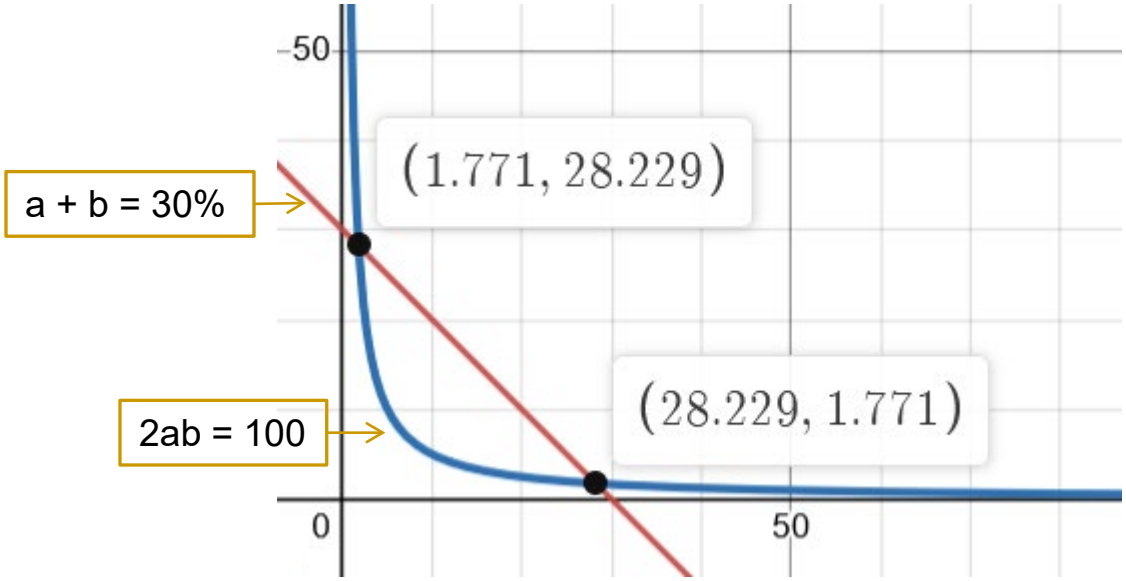
	2010 Horizontal Merger Guidelines	Proposed Guidelines
Post-merger HHI and ΔHHI levels to trigger structural presumption	2,500 and change in HHI greater than 200	Greater than 1,800 and change in HHI greater than 100[1]
Merged company's market share trigger	No stated market share presumption. Market share is "useful to the extent it illuminates the merger's likely competitive effects."	Share greater than 30%, and change in HHI greater than 100[2]

[1] U.S. Dep't of Justice & Fed. Trade Comm'n, Merger Guidelines § 2.1 (Dec. 18, 2023). In the 2010 guidelines, this is the threshold for finding the merger may "potentially raise significant competitive concerns." 2010 Horizontal Merger Guidelines § 5.3.

[2] *Id.* 4 n.16 (citing United States v. Philadelphia National Bank, 374 U.S. 321, 364-65 (1963)).

The 2023 Merger Guidelines

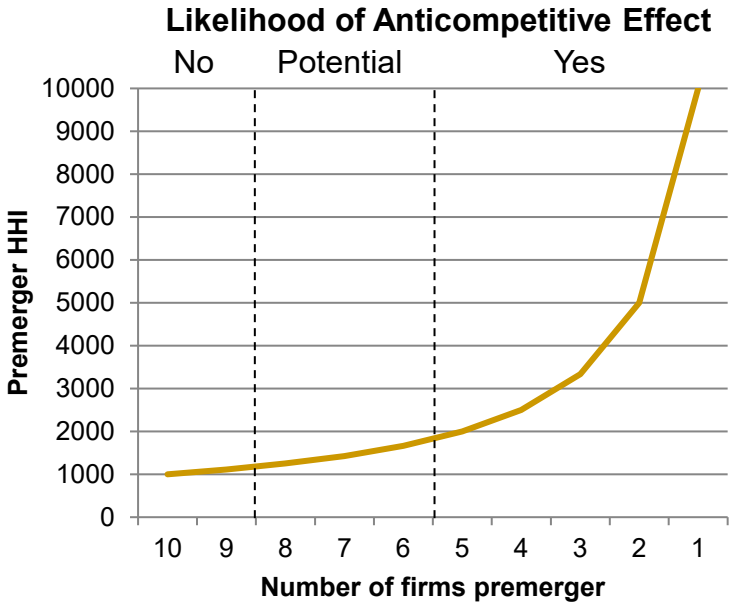
- The 30% trigger essentially triggers the *PNB* presumption whenever the two firms have a combined market share of 30%
  - That is, the ΔHHI > 100 requirement is irrelevant unless one of the merging firms has a market share of less than 2%



Comparing the Merger Guidelines

- Shares and HHIs in symmetrical markets with *n* identical firms premerger:

n	Premerger S_i	Premerger HHI	Delta	Postmerger HHI	Exceeds 2010 Guidelines
10	10.0	1000	200	1200	No
9	11.1	1111	247	1358	No
8	12.5	1250	313	1563	Potential
7	14.3	1429	408	1837	Potential
6	16.7	1667	556	2222	Potential
5	20.0	2000	800	2800	Yes
4	25.0	2500	1250	3750	Yes
3	33.3	3333	2222	5556	Yes
2	50.0	5000	5000	10000	Yes
1	100.0	10000			



Presumptive anticompetitive effect under 2023 Guidelines
2010 Guidelines reach a 5-to-4 merger
2023 Guidelines reach a 7-to-6 merger

2023 Merger Guidelines

- *Query*: Will the 2023 Merger Guidelines thresholds have much traction with the courts?

Probably not

1. The merger guidelines are not binding on the courts
2. The judicial precedent has repeatedly referenced the higher thresholds of the 2010 Horizontal Merger Guidelines as the trigger for the *PNB* presumption
3. No modern litigated case has tested the 2010 guidelines thresholds, much less the lower thresholds of the Draft Merger Guidelines
4. The DOJ and FTC do not cite any economic studies to support the lower thresholds
   - But, then again, they did not have any studies to support the 2010 thresholds either
5. *WDC*: I am unaware of an any academic economic studies that support the lower thresholds

Market participants[1]

- The idea
  - Under the Merger Guidelines, only demand-side substitutability counts in market definition
  - BUT who participates in the market—and their associated market shares—does take supply-side substitutability into account

Note: Historical precedent allows courts to take supply-side substitutability into account when defining markets

[1] *See* 2010 Merger Guidelines § 5.1.

Identifying market participants

- Two types of market participants under the Merger Guidelines
  1. *Current sellers*: All firms that currently earn revenues in the relevant market
  2. *Nonsellers* ("rapid entrants"):
     a. *Vertically integrated firms* to the extent that they would direct production from captive use to merchant sales or employ excess capacity in response to a SSNIP
     b. *Near-term entrants* not currently earning revenues in the relevant market but will enter the market with near certainty in the very near future
     c. *Rapid responders* that are not current producers in a relevant market but would very likely provide a rapid supply response to a SSNIP

Identifying market participants

- Nonseller "rapid entrants"
  - The 2010 and 2023 Merger Guidelines limit "rapid entrants" to those firms whose entry do not require significant sunk costs
    - The 1992 Guidelines called these firms "uncommitted entrants"[1]
  - *Example*:

> Farm A grows tomatoes halfway between Cities X and Y. Currently, it ships its tomatoes to City X because prices there are two percent higher. Previously it has varied the destination of its shipments in response to small price variations. Farm A would likely be a rapid entrant participant in a market for tomatoes in City Y.[2]

  - NB: Entry that would take place more slowly in response to adverse competitive effects, or that requires firms to incur significant sunk costs, is considered in the entry defense analysis, not as market participation

[1] *See* 1992 Merger Guidelines § 1.32.

[2] 2010 Merger Guidelines § 5.1 (example 16).

Market share attribution[1]

1. Current sellers
   - Normally based on recent historical level of sales
     - Homogeneous products are usually measured in units
       - Reflects Cournot competition, where production levels are the firm's control variable
     - Differentiated products are usually measured in revenues
       - Reflects Bertrand competition, where price is the firm's control variable
   - Adjustments
     - The Merger Guidelines envision adjustments to historical measures based on changing conditions when these adjustments can be reliably made
       - *Example*:
         - Firm A, which operates close to full capacity, has just developed a new technology, which will enable it to increase production by 20%.
         - For HHI analysis, increase Firm A's production by 20% and recalculate the market shares of all firms in the relevant market
       - *Example*:
         - One of Firm B's plants was recently destroyed by a fire, which will reduce the firm's production levels in the future
         - For the HHI analysis, reduce Firm B's production by the amount produced by the destroyed plant (and not shifted to another of B's plants with excess capacity) and recalculate the market shares of all firms in the relevant market

[1] *See* 2010 Merger Guidelines § 5.2.

Market share attribution[1]

2. Nonsellers
   - The competitive significance of nonsellers depends on the extent to which they would rapidly enter the relevant market in response to a SSNIP
   - Consequently, their market share attribution is the quantity they would likely sell in the relevant market in response to a SSNIP
     - The 1992 Merger Guidelines are explicit on this[1]
     - The 2010 and 2023 Merger Guidelines are silent on the mechanism to attribute market shares
       - In the absence of a method in the current Guidelines, courts are likely to use the 1992 Guidelines approach
   - Example
     - If Firm X currently produces 1 million units of an input and consumes 100% of this production internally but would divert 20% of its production to merchant sales in the event of a 5% SSNIP, then the integrated firm is a participant in the relevant market and would be credited with 200,000 units in the relevant market (even though the firm in fact makes no sales in the relevant market).

Current Producers	Units	Share
Firm A	600	37.5%
Firm B	450	28.1%
Firm C	400	25.0%
Firm D	150	9.4%
	1600	100.0%

MG Participants	Units	Share
Firm A	600	33.3%
Firm B	450	25.0%
Firm C	400	22.2%
Firm D	150	8.3%
Firm X	200	11.1%
	1800	100.0%

[1] 1992 Merger Guidelines § 1.41.

Defendants' Rebuttal Arguments

Defendants' rebuttal arguments

- *Baker Hughes*

> The basic outline of a section 7 horizontal acquisition case is familiar. [1] By showing that a transaction will lead to undue concentration in the market for a particular product in a particular geographic area, the government establishes a presumption that the transaction will substantially lessen competition. **[2] The burden of producing evidence to rebut this presumption then shifts to the defendant.** [3] If the defendant successfully rebuts the presumption, the burden of producing additional evidence of anticompetitive effect shifts to the government, and merges with the ultimate burden of persuasion, which remains with the government at all times.[1]

  - In Step 2 of *Baker Hughes* three-step burden shifting, the defendant bears the *burden of production* to rebut the plaintiff's prima facie case
    - The burden of production requires the defendant to adduce sufficient evidence to put an element of the prima facie case in issue and create a question of fact for the trier of fact
    - *Sliding scale*: The quantum of evidence required depends on the strength of the plaintiff's prima facie case: "The more compelling the prima facie case, the more evidence the defendant must present to rebut it successfully."[2]

[1] United States v. Baker Hughes Inc., 908 F.2d 981, 982-83 (D.C. Cir. 1990) (footnote and internal citations omitted).
[2] *Id.* at 991.

Typical structure of a formal merger analysis

- Step 1: The prima facie case
  - A. Relevant market
    - *Brown Shoe* "outer boundaries" and "practical indicia" tests for product markets
    - "Commercial realities" test for geographic market
    - Hypothetical monopolist test [and other 2023 Guidelines tests to the extent adopted]
  - B. *PNB* presumption
    - Market participants and market shares
    - Application of the *PNB* presumption ← Judicial precedent; Guidelines thresholds [t the extent adopted]
  - C. Other evidence of anticompetitive effect
    - Unilateral effects
    - Coordinated effects
    - Elimination of a maverick

    → *H&R Block*
- Step 2: Defendants' rebuttal
  - A. Challenges to the prima facie case (failure of proof on upward pressing pressure)[1]
  - B. Traditional defenses (offsetting downward pricing pressure)
    - Entry/expansion/repositioning
    - Efficiencies
    - Countervailing buyer power ("power buyers")
    - Failing company/division
- Step 3: Court resolves factual issues and determines net effect on competition

[1] Often addressed in Step 1.

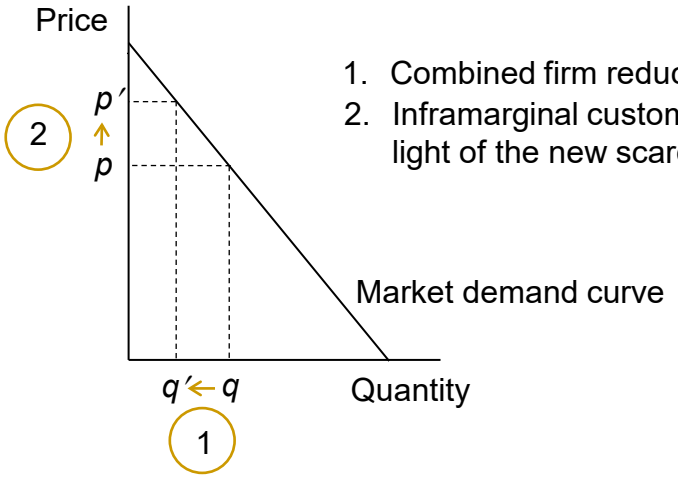
Defendants' rebuttal arguments

- Four arguments
  1. The likelihood of expansion by existing DDIY firms besides Intuit, HRB, and TaxACT will offset any anticompetitive effects
  2. The relevant market is not susceptible to coordination and the merger will not increase the probability of effective coordinated interaction
  3. The merger will not result in anticompetitive unilateral effects
  4. The efficiencies resulting from the merger will offset any anticompetitive effects

Defendants' Rebuttal Arguments
Part 1. Entry/Expansion/Repositioning

Entry/Expansion/Repositioning

- The story
  - General idea
    - Think of a merger's anticompetitive effect being achieved by a reduction in market output



1. Combined firm reduces production and creates a "hole" in output
2. Inframarginal customers bid up the price to clear the market in light of the new scarcity at premerger prices

- The defense depends on showing that the "hole" in output will be filled by—
  1. New firms entering the market and adding new output ("entry")
  2. Incumbent firms expanding their output over premerger levels ("expansion"), *or*
  3. Incumbent firms extending or repositioning their production in product or geographic space to replace output loses resulting from unilateral effects ("repositioning")

A problem for the merging parties with this defense is that the evidence of the likelihood of entry/expansion/repositioning is in the hands of third parties

Entry/Expansion/Repositioning

- A twist on the "story"
  - The mere *threat* of entry/expansion/repositioning may be enough to deter the combined firm from reducing output (or otherwise acting less competitively) for fear of inducing new competition
    - The "story"
      - Say that there are four firms in the market of equal size (each selling 100 units = 25% shares)
      - Two firms merge: Proforma market share = 50%
      - Combined firm decreases output by 40 units to raise prices (anticompetitive effect)
      - Suppose a new firm quickly enters selling 40 units (fills the "hole")
      - Market returns to premerger prices
        - New entrant remains in the market with some positive market share of, say, 30%
        - Combined firm only recovers to a 20% share
      - → Merged firm has lost 5% points of share with no gain in price
  - The advantage to this theory is that the proof is in the hands of the merging parties
    - What is important is that the merged firm is deterred from reducing output in the first instance, so there is no "hole" in quantity to be filled
    - Moreover, the entry anticipated by the merged firm does not have to be simultaneous with the merger—the story works so long as the merged firm is deterred from reducing output even in the short run
  - *WDC*: While this defense has worked in investigations in close cases, I am not aware of a court addressing it

Entry/Expansion/Repositioning

- The Merger Guidelines: The formalities
  - 1982 and 1992: Depended largely on actual entry offsetting the merger's anticompetitive effect within two years of the merger
    - This allowed for a short-run anticompetitive effect
  - 2010 and 2023: Requires entry to "deter or counteract" any anticompetitive effects "so the merger will not substantially harm customers"
    - Does not allow any grace period

Entry/Expansion/Reposition

- 2010 Guidelines requirements—Entry must be:[1]
  - Timely

    [E]ntry must be rapid enough to make unprofitable overall the actions causing those effects and thus leading to entry, even though those actions would be profitable until entry takes effect.

  - Likely

    Entry is likely if it would be profitable, accounting for the assets, capabilities, and capital needed and the risks involved, including the need for the entrant to incur costs that would not be recovered if the entrant later exits.

  - Sufficient

    Entry by a single firm that will replicate at least the scale and strength of one of the merging firms is sufficient. Entry by one or more firms operating at a smaller scale may be sufficient if such firms are not at a significant competitive disadvantage.

    As we have seen, this is too strong a condition

- Courts have adopted these requirements

[1] References to entry in this section also include expansion and repositioning.

Entry/Expansion/Repositioning

- Defendants' argument
  - 18 companies offering DDIY products
  - Argued that the two largest—TaxHawk and TaxSlayer—were poised to replicate the scale and strength of TaxACT

Entry/Expansion/Repositioning

- TaxHawk—
  - Had infrastructure to expand by 5-7 times current size
  - BUT had been in business for 10 years and never grew beyond 3.2%
  - Functionally more limited than the Big Three
    - Does not service all federal tax forms
    - Excludes two states' forms in their entirety
    - Does not service major cities with income taxes (e.g., NYC)
  - Co-founder testified that it would take another decade for the TaxHawk to support all forms
    - Reason: "Lifestyle" company—don't like to work too hard
    - Runs TaxACT to "deliver a sufficient income stream to sustain its owners' comfortable lifestyle, without requiring maximal effort on their part."
  - Court: Compare with TaxACT—very entrepreneurial and impressive rate of growth

Illustrates the problem that the most compelling evidence is not under the control of the merging firms. Testimony by the alleged new entrant that it will not enter/expand/reposition sufficient to offset the anticompetitive effect is the kiss of death for the defense

Entry/Expansion/Repositioning

- TaxSlayer—
  - Established in 2003
  - Family business
  - Relies heavily on sponsorship of sporting events (e.g., the Gator Bowl and NASCAR races)
  - 2.7 market share
  - No meaningful growth in market share (had 2.5 share in 2006)

Entry/Expansion/Repositioning

- DOJ evidence: Significant barriers to entry and expansion
  1. Successful entry/expansion beyond a few percentage points of markets share requires a brand name reputation
     - Customers need trust in their tax service provider
     - Costly to build needed reputation
       - HRB testimony: takes millions of dollars and lots of time to develop a brand
       - Big Three (really Big Two) spend over $100 million/year in advertising to build and maintain their brands
       - Dwarf expenditures by smaller companies
     - TaxACT CIM identifies reputation as a barrier to entry
     - TaxHawk and TaxSlayer lack the reputation and the incentive and funds to build one
  2. High new customer acquisition costs
     - Market has matured considerably and there is not the “low hanging fruit” of manual customers who are natural customers of DDIY products
     - Instead, TaxHawk or TaxSlayer would have to acquire customers from Intuit or HRB
     - Very high customer acquisition costs → entrenched market shares → low growth for other firms
  3. High switching costs
     - Data cannot be imported across products of different companies
- Court: Defense rejected

Entry/Expansion/Repositioning

- Concluding comments
  - Almost impossible to make out the defense in an agency investigation
    - The agency starts by insisting that the potential entrants be identified by name
    - It then calls each of the identified firms and asks: “Would you enter this market if prices increased by 5% to 10%?”
    - The company almost always answers “no”
      - Can be a kneejerk reaction
      - Can be a “go away staff” reaction
      - Can be an informed “no”
    - The 2023 Merger Guidelines are explicit that in the face of a prima facie entry defense, the agencies will “analyze why the merger would induce entry that was not planned in pre-merger competitive conditions”[1]
      - The idea here is that if entry as did not occur premerger, why would the putative entrant enter postmerger (especially if the prevailing price would only increase by a SSNIP)?
  - Some business realities
    - As a general rule of business behavior, firms do not enter existing markets just for margin
    - They almost always require some nonprice competitive advantage against incumbent firms to cause them to entry
    - The problem is that entry can too easily precipitate a price war and destroy the pre-entry margin that made entry attractive in the first instance

[1] 2023 Merger Guidelines § 3.2.

Defendants' Rebuttal Arguments
Part 2A. Coordinated Effects

Introduction

- Definition
  - Coordinated effects (or coordinated interaction) is a theory of anticompetitive harm that depends on the merger making oligopolistic interdependence more effective:

> Merger law "rests upon the theory that, where rivals are few, firms will be able to coordinate their behavior, either by overt collusion or implicit understanding in order to restrict output and achieve profits above competitive levels."[1]

Think price fixing without an agreement

  - *Terminology*: May use "accommodate" rather than "coordinate" or "cooperate"
  - *Scope*: Firms can coordinate across any or all dimensions of competition, including price, product features, customers, geography of operation, innovation, wages, or benefits[2]

[1] FTC v. CCC Holdings Inc., 605 F. Supp. 2d 26, 60 (D.D.C. 2009); *accord* United States v. H&R Block, Inc., 833 F. Supp. 2d 36, 77 (D.D.C. 2011).
[2] *See* 2023 Merger Guidelines § 2.3.

Introduction

- Relation to Sherman Act § 1
  - Section 1 provides explicit coordination by agreement on competitive variables that that be manipulated to harm consumers and increase producer profits
  - Section 7 addresses tacit coordination, that is, coordination that occurs in the absence of agreement (and hence cannot violate Section 1)

Rule*: Since Section 7 prohibits mergers with a reasonable probability of lessening competition, a merger is anticompetitive if it* increases the likelihood, effectiveness, or stability *of coordinated interaction.*

A Section 7 violation does not *require proof that firms in the market would engage in such coordination as a result of the merger.*

Introduction

- What can firms do if the merged firm seeks to increase price?
  1. "Do nothing"—Just continue doing what they were doing
  2. Compete more aggressively/expand production/maybe even lower price to gain market share
  3. "Accommodate" the price increase
     - Need not match it
  - Key question:

    Will the merger increase the probability of effective coordinated interaction/ accommodating conduct among some or all the firms in the market, thereby facilitating the exercise of market power to the harm of consumers?

  - Key requirements:
    - Must find a causal relationship between the merger and the increased probability, effectiveness, or stability of coordination

Merger Guidelines history

1. 1982 Guidelines
   - Accepted an unspecified theory of oligopoly as the underpinning of the *PNB* presumption
   - Did not require more for a prima facie case

Merger Guidelines history

2. 1992 Guidelines
   - *Problem*: There exist highly competitive markets with only a few firms
     - E.g., Coke and Pepsi
   - *Solution*: Require proof that the "Stigler conditions" for (tacit) coordination were satisfied in the relevant market:

Stigler conditions

1. *Tacit agreement*: Market conditions must be conducive to firms (tacitly) reaching terms of coordination that are individually profitable to the firms involved
2. *Detection*: Market conditions must be conducive to firms detecting deviations from the tacit terms of coordination
3. *Punishment*: Market conditions must be conducive to firms punishing deviations from the tacit terms of coordination

   - *In practice*:
     - The courts—and, indeed, many within the agencies—did not understand the punishment requirement
     - Many thought that it require participating firms to tacitly reach an agreement on a particular punishment and then tacitly coordinate to implement it
     - Prosecutors had a difficult time convincing courts to accept proof that market conditions were conducive to punishing deviations and the theory grew out of favor

Merger Guidelines history

3. 2010 Merger Guidelines
   - The 2010 Merger Guidelines sought to revitalize the coordinated effects theory
   - *Solution*: Eliminate the language of the Stigler conditions and focus more generally and less prescriptively on—

2010 MG requirements

1. The premerger *susceptibility* of coordinated interaction, and
2. The *effectiveness* of the merger in increasing the likelihood, effectiveness, or stability of coordinated interaction among some or all the firms in the market
   - Requires a causal relationship between the merger and the increased probability of effectiveness of coordination

   - Relation to the Stigler conditions
     - The 2010 susceptibility requirement subsumed the structural market, information, and incentive compatibility considerations inherent in the first two Stigler conditions
     - The Stigler punishment element disappeared altogether as a factor in the analysis and was replaced by the effectiveness condition
     - Effectiveness only requires a showing of an increased likelihood of successful coordination interaction, not proof that coordination interaction would in fact occur postmerger

Merger Guidelines history

3. 2010 Merger Guidelines (con't)
   - Adoption of the 2010 Merger Guidelines test by the courts has been mixed
     - Some courts have adopted the 2010 Merger Guidelines two-element test[1]
     - Other courts continue to use the *H&R Block* approach of:
       - Presuming coordinating effects when postmerger concentration is sufficient high to trigger the *PNB* presumption, *and*
       - Shifting the burden (presumably of production) to the merging parties to rebut the presumption[2]
         - If the burden is one of persuasion, the shift violates *Baker Hughes*

[1] *See* New York v. Deutsche Telekom AG, 439 F. Supp. 3d 179, 234 (S.D.N.Y. 2020); New York v. Deutsche Telekom AG, 439 F. Supp. 3d 179, 234 (S.D.N.Y. 2020); FTC v. RAG-Stiftung, 436 F. Supp. 3d 278, 317 (D.D.C. 2020).
[2] *See* United States v. Bertelsmann SE & Co. KGaA, 646 F. Supp. 3d 1, 44-45 (D.D.C. 2022) ("[W]hen the government has shown that a merger will substantially increase concentration in an already concentrated market, . . . 'the burden is on the defendants to produce evidence of "structural market barriers to collusion" specific to this industry that would defeat the "ordinary presumption of collusion" that attaches to a merger in a highly concentrated market.'") (quoting *H&R Block*, 833 F. Supp. 2d at 77); FTC v. OSF Healthcare Sys., 852 F. Supp. 2d 1069, 1087 (N.D. Ill. 2012).

Merger Guidelines history

4. The 2023 Guidelines refinements
    1. *Consistent terminology*: While the 2010 Merger Guidelines used "coordinated interaction," "coordinated conduct," and "coordinated effects" interchangeably, the 2023 Merger Guidelines uses the term "coordinated interaction" consistently.
    2. *Extension to nonprice dimensions*: Adopted the approach of the 2023 Guidelines but explicitly recognized that coordinated interaction can occur across multiple dimensions of competition in addition to price, including product features, customer segmentation, output, innovation, and (on the input side) labor market conditions such as wages and benefits[1]
        - WDC: Expect the major focus in cases to be on price unless the evidence in a particular case is materially probative of likely coordination on other dimensions
        - In this connection, a history of past attempts of coordination on a specific dimension is likely to be regarded by the agencies as highly probative
    3. *Simplify the proof*
        - The 2023 Guidelines collapse the two-element 2010 test into one requirement: does the merger increase the “the likelihood, stability, or effectiveness of coordination” in the relevant market?
        - Simplifies the proof by listing three “primary factors” presumptive and six “secondary factors” probative in showing a merger

See the class notes for more detail on each of these stages

[1] 2023 Merger Guidelines §§ 2.3.

Some economics

- Introduction
  - Although the 2023 Guidelines collapse the test for coordinated interaction into a single element, it can be readily decomposed into the two-element test of the 2010 Guidelines"
    1. Is the market susceptible to coordinated interaction premerger?
    2. Is there a reasonable probability that the likelihood, effectiveness, or stability of coordinated interaction will increase as a result of the merger?
  - This is a clearer way to analyze the issue, especially on the underlying economics

We will analyze the economics of each question separately.

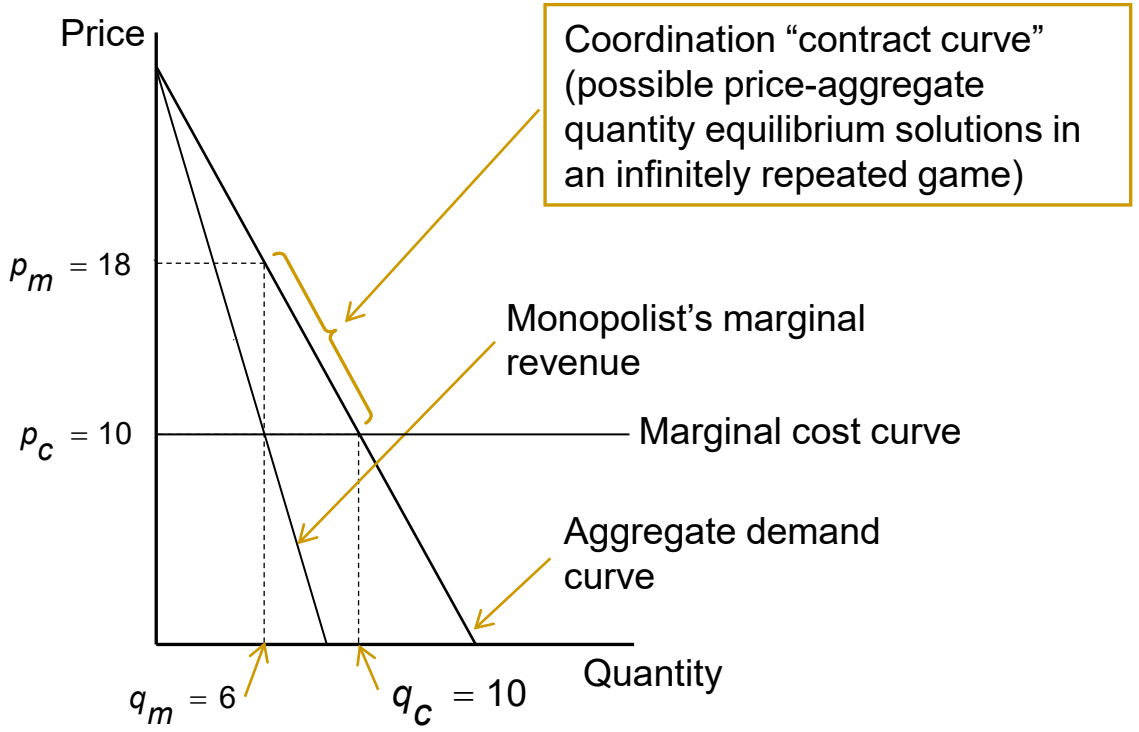
You will be able to see how the various factors identified in the 2010 and 2023 Merger Guidelines fit into the economic analysis.

1. Susceptibility

- Oligopolistic coordination is impeded by three problems:
  1. Selection problem
     - Will the firms be able to "agree' to the price or other terms on which they will tacitly coordinate?
  2. Internal stability problem
     - Will the (short-run) incentive to pursue a more competitively aggressive strategy, which all profit-maximizing firms have, undermine any tacit coordination within the collusive group?
  3. External interference problem
     - Apart from the firms in the collusive group, will other entities disrupt any tacit coordination?
       - Will firms in the market but outside of the collusive group expand or threaten to expand production?
       - Will firms outside the market enter or threaten to enter the market?
       - Will buyers with sufficient negotiating power (if any) induce defections and disrupt the terms of coordination

1A. Susceptibility: Selection problem

- The idea
  - There are an infinite number of possible price-quantity points on the demand curve on which the firms could tacitly "select" to achieve
  - Ineffectiveness or instability occurs if they cannot coordinate on the same point

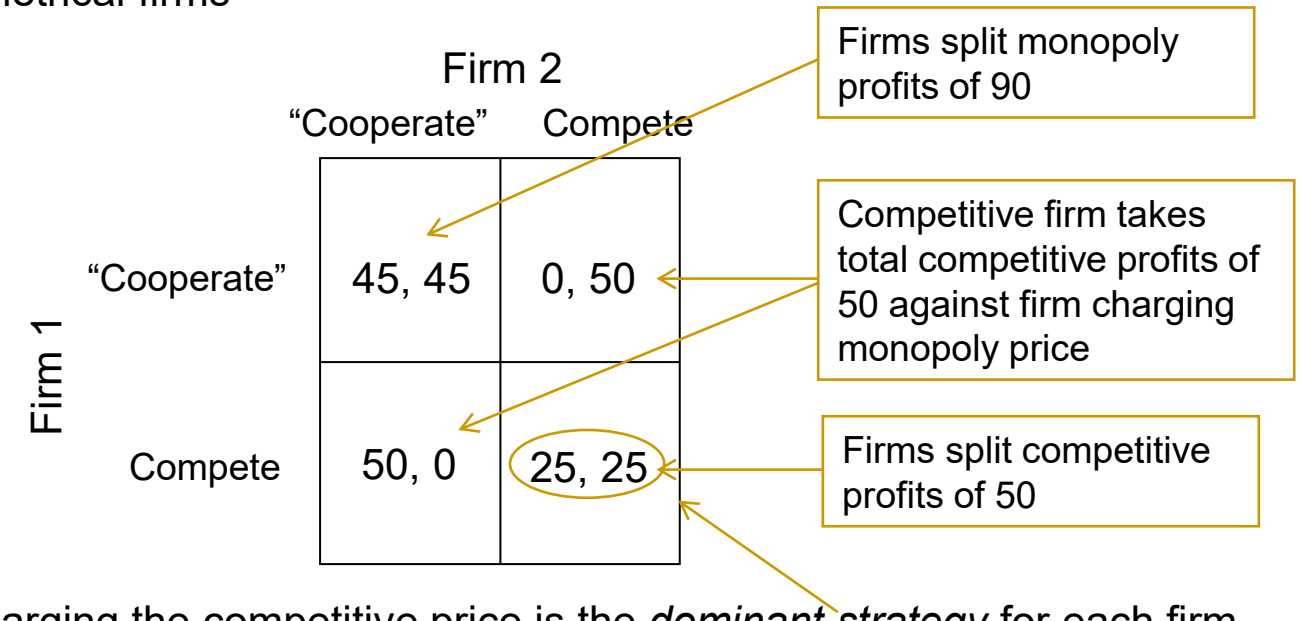


1A. Susceptibility: Selection problem

- Factors to consider (not exhaustive)
  a. The ability of the firms to signal one another about their individually preferred outcomes
     - The more information about the competitive variables on which coordination may take place (e.g., prices and/or production levels of individual firms), the better firms will be able signal one another about preferred outcomes
     - Goes to the transparency of the market on the terms of coordination
  b. The degree of firm homogeneity
     - The more similar the firms, the more likely they will have similar objectives and so be aligned in their incentives to coordinate
  c. The degree of product homogeneity
     - The more similar the products, the easier it is to coordinate
     - That is, the terms of coordination are likely to be less complicated than with highly differentiated products

1B. Susceptibility: Internal stability

- Incentive compatibility problem
  - Inherent in oligopolistic coordination since each profit-maximizing firm has a incentive to compete more aggressively and steal market share rather than to cooperate
- *Illustration*: Duopoly "prisoner's dilemma" in single period game
  - Two symmetrical firms



Key result: Charging the competitive price is the *dominant strategy* for each firm, regardless of what strategy the other firm chooses. But mutual monopoly strategies earn each firm higher profits.

1B. Susceptibility: Internal stability

- Two questions
  a. What is the probability that at least one firm in the market will defect?
  b. For any given firm, what factors influence its individual probability of defection?

1B. Susceptibility: Internal stability

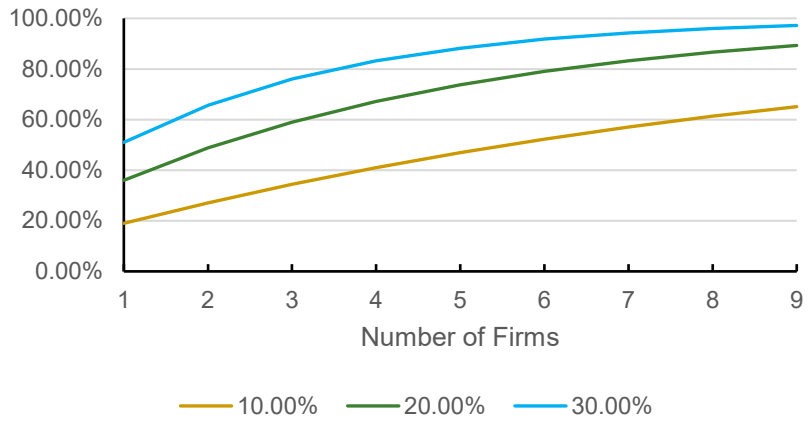
a. Probability of at least one defection

- *Key factor*: The number of competitors
  - The more competitors, the more likely one or more firms will defect given any individual firm's probability of defection
  - This factor underpins the emphasis on the number of realistic suppliers remaining in the market postmerger

Probability of at Least One Defection

Individual defection probability *p*

Number of firms *n*	10.0%	20.0%	30.0%
2	19.0%	36.0%	51.0%
3	27.1%	48.8%	65.7%
4	34.4%	59.0%	76.0%
5	41.0%	67.2%	83.2%
6	46.9%	73.8%	88.2%
7	52.2%	79.0%	91.8%
8	57.0%	83.2%	94.2%
9	61.3%	86.6%	96.0%
10	65.1%	89.3%	97.2%



1B. Susceptibility: Internal stability

b. Factors affecting an individual firm's incentive (probability) to defect (not exhaustive)

1. The size of the reward relative to the market
   - The larger the size of the reward relative to the size of the market, the larger the incentive to defect
   - Differences among firms in the market may affect the size of their expected reward
     - *Example*: Firms with large excess capacity can increase their production to service more demand at more competitive (defection) prices
     - *Example*: Firms operating at capacity have no incentive to defect
2. The probability of detection (for a given size of reward)
   - The greater the probability of detection, the lower the incentive to defect
     - That is, the defecting firm will not be able to make as many sales before other companies respond
3. Lags in detection make
   - Significant lags make cheating more profitable (can successfully cheat for a longer period of time) and increase the incentive to defect
4. Prior actual or attempted collusion or coordination/willingness to coordinate
   - Indicates that firms in the market believe that coordination is possible
   - Premerger industry efforts to coordinate is highly probative of an incentive to coordinate
     - Whether or not successful
     - Whether or not lawful (*Query*: Should historical lawful coordination be considered probative?)

1C. Susceptibility: External interference

c. Threat of "external" interference that may undermine coordinated interaction within a relevant market

1. Mechanisms of external interference
   - i. Producers outside of the market that enter the market
   - ii. Customers that switch to products outside of the collusive group
   - iii. Customers with sufficient bargaining power disrupt coordinated interaction
2. External factors to consider (not exhaustive)
   - That is, factors external to the collusive group that may undermine the collusive group's stability
   - These factors affect the elasticity of demand for the collusive group
   - i. Ability and willingness of customers to switch to suppliers outside of the collusive group
   - ii. Ease with which new competitors may enter
   - iii. Ease with which incumbent competitors outside the collusive group may efficiently expand production
   - iv. Capacity utilization outside the collusive group
     - Significant excess capacity allows outside firms to substantially increase their production levels to service demand diverting from the collusive group
   - v. Existence of disruptive "power buyers"

2. Merger effectiveness

- Rule
  - It is not enough that premerger the market is conducive to coordinated interaction—the merger *must reasonably increase the probability* that the market will be materially *more* conducive to coordinated interaction postmerger
- Implications
  - This means that the merger must materially improve the incentives or ability of a group of firms sufficient to affect market price (the "collusive group") to—
    1. Solve the section problem
    2. Solve the incentive incompatibility problem, *or*
    3. Resist external interference
  - *Definition*: A "collusive group" of firms is a subset of firms that, if coordinating, would create, enhance or facilitate the exercise of market power in the relevant market
    - The set of all firms in the market is a sufficient group (by the hypothetical monopolist test)
    - But a smaller subset may also be sufficient depending on the characteristics of the market
      - Think about a market that can be modeled as a "dominant firm" with a competitive fringe
      - But where the "dominant firm" is the tacitly coordinating sufficient group
    - Recognizes the potential for coordinated effects even if all firms in the market are not tacitly coordinating

2. Merger effectiveness

- Some factors to consider when thinking about merger effectiveness
  1. Mitigating the selection problem
     - \+ The merger reduces firm or product heterogeneity in the market and better aligns the incentives of the various firms tacitly to achieve coordinated interaction
  2. Mitigating the incentive incompatibility problem
     - +++ The merger reduces the number of independent competitors in a way that materially reduces the probability of defection
     - – The merger decreases excess capacity inside the collusive group
     - – The merger results in significant efficiencies in the combined firm that increase the rewards of defection
     - – The merger results in vertical integration that could improve the merged firm's ability to cheat without detection
  3. Mitigating the external interference problem
     - +++ The acquisition of a disruptive "maverick" (considered as a separate theory below)
     - \+ The merger eliminates a likely potential entrant
     - \+ The merger increases the barriers to entry/expansion/repositioning

Key:
\+ The merger increases the probability of effective coordinated interaction postmerger
– The merger decreases the probability of effective coordinated interaction postmerger

Coordinated effects in *H&R Block*

- Coordinated effects in *H&R Block*
  - Court:

> Since the government has established its prima facie case, the burden is on the defendants to produce evidence of "structural market barriers to collusion" specific to this industry that would defeat the "ordinary presumption of collusion" that attaches to a merger in a highly concentrated market.[1]

    - This is consistent with a strict reading of *Baker Hughes* only if the plaintiffs have established a prima facie case of coordinated effects
      - BUT *H&R Block* in effect rebuttably presumes a price facie case of coordinated effects when the *PNB* presumption is triggered
      - Courts taking the *H&R Block* approach typically cite to *Heinz*, a D.C. Circuit case decided in 2001[2]
        - This illustrates that precedent can trump the Merger Guidelines
      - The *H&R Block* approach is contrary to the approach of the 2010 Horizontal Merger Guidelines
    - Other courts follow the 2010 Merger Guidelines and require the plaintiff to prove a prima facie case of coordinated effects through a showing that—
      - The relevant market is susceptible to coordinated effects, *and*
      - The merger will increase the likelihood or effectiveness of coordinated effects

[1] United States v. H & R Block, Inc., 833 F. Supp. 2d 36, 77 (D.D.C. 2011) (quoting FTC v. H.J. Heinz Co., 246 F.3d 708, 725 (D.C. Cir. 2001)).
[2] *Id*.

Coordinated effects in *H&R Block*

- Merging parties' arguments
  1. Intuit has no incentive to compete any less vigorously postmerger
  2. In particular, Intuit has no incentive to reduce competitiveness of its free product, since free products are a principal driver of paid new customers to Intuit
  3. Therefore, HRB must compete vigorously postmerger or else lose customers to Intuit

Coordinated effects in *H&R Block*

- Evidence: Premerger susceptibility
  1. Three firms could form the "collusive group"
     - Fringe firms too insignificant to be able to disrupt coordination among the "Big Three"
  2. Historical coordination
     - After TaxACT introduced its free offering, Intuit proposed that firms lobby the IRS to impose limits on their free offerings (HRB and others joined, but not TaxACT)
     - *Court*: "Highly persuasive historical act of cooperation"
     - *WDC*: Shows that evidence does not have to be of historical illegal coordination
  3. Other factors
     - Market is transparent (consumer offerings—prices and features available on the Internet)
     - Product differentiation not that relevant
     - Companies can observe and coordinate on attributes of "free" products
     - Transactions are small, numerous, and spread among a mass of consumers
     - Consumers have low bargaining power
     - Significant barriers to switching due to "stickiness" of DDIY products (learning curve)

Coordinated effects in *H&R Block*

- Evidence: Increase in postmerger effectiveness
  1. *Contra*: Intuit engaged in "war games" designed to anticipate and defuse new competitive threats that might emerge from HRB postmerger
  2. BUT the merger reduces the "collusive group" from 3 to 2
  3. AND Intuit's documents also indicated that it anticipated that the combined firm would likely "pull some of its punches" if Intuit is willing to go along and not compete aggressively against it
     - Anticipates that combined firm will "not escalate fee war"
     - *WDC*: This could have been just a random observation by an Intuit employee and not Intuit's considered strategy
  4. AND past cooperation as to lobbying the IRS for eligibility restrictions for free tax products probative of postmerger merger cooperation to further restrict eligibility
  5. AND merger would result in the elimination of a "particularly aggressive competitor" (TaxACT) in a highly concentrated market

Coordinated effects in *H&R Block*

- Court
  - Acknowledges that Intuit and the merged company will have strong incentives to compete for customers
  - BUT coordination does not have to be on all dimensions of competition
    - One aspect is enough
      - For example, lower the quality of "free" products, causing marginal customers to switch to paid software → making them worse off
    - Here, DOJ alleges "coordination would likely take the form of mutual recognition that neither firm has an interest in an overall "race to free" in which high-quality tax preparation software is provided for free or very low prices." (p. 77)
    - That is, not eliminate free products (useful as marketing devices)
    - Rather, reduce their quality in order to drive more customers into paid products
  - Conclusion:
    - Defendants failed to rebut presumption that anticompetitive coordinated effects would result from the merger
    - To the contrary, the preponderance of the evidence indicated that coordinated effects likely would result

The practice today

- Last choice as a theory
  - Even after the 2010 revisions to the Merger Guidelines, coordinated effects is the last choice as an independent theory of competitive harm in horizontal merger investigations
    - *Exception*: Where the merger eliminates a "maverick"
  - Given the narrow market definitions usually found under the hypothetical monopolist test:
    - In problematic mergers, the merging firms tend to have high market shares and be close competitors with one another
    - Typically yields an easily understood unilateral effects theory
  - *Result*: Coordinated effects is rarely used in investigations or litigations as the primary theory of anticompetitive harm
    - Usually more of an add-on theory in the complaint
    - Or when the agency is forced into it (*CCC/Mitchell*)

The practice today

- When coordinated effects is used in litigation
  - A common approach is for the plaintiffs to invoke the *PNB* presumption and then make the argument that—
    1. The high concentration and other characteristics of the relevant market make it susceptible to coordinated interaction, *and*
    2. the reduction in the number of competitors and increase in concentration resulting from the merger is sufficient to increase the probability of coordinated interaction
       - This is essentially a return to the structure-conduct-performance argument
  - In some cases, however, the evidence may be more substantial
    - The agencies and the courts find past efforts at arguably illegal coordination in the market especially probative of both susceptibility and effectiveness
    - They also find the elimination of a maverick almost conclusive in supporting a theory of anticompetitive coordinated interaction
  - Coordination on nonprice dimensions
    - The agencies, for example, are looking more closely at significant reductions in excess capacity, especially in heavy industries where capacity expansions are costly and time-consuming, as making the market more conducive to coordinated interaction
      - NB: Consolidations of plants to reduce excess capacity is usually one of the common efficiencies cited by the parties in support of a deal

A final note

- A largely unrecognized asymmetry—The "price ratchet"
  - It is relatively hard for firms to tacitly coordinate to *increase* prices
    - *Problem*: Some firm has to lead the price increase, and if other firms do not follow, the putative price leader will suffer a profit loss → A risky gamble for the putative price leader
    - Some exceptions
      - An established price leader already exists
      - Where price increases can be announced in advance and retracted if insufficient firms follow
  - It is much easier for firms to tacitly coordinate *not to decrease* prices
    - Say there is a common cost increase to suppliers in the market (e.g., fuel prices increase)
    - All firms increase their prices to cover this increased cost
    - Then there is a common cost decrease (e.g., fuel prices decrease)
    - WHAT DO THE FIRMS DO?
      - If one decreases price, other firms will decrease their prices → Market shares stay the same, but profits decline given the price decrease
      - So the usual strategy is for each firm to maintain price and wait for another firm to trigger a price decrease
      - But if all firms follow this strategy, market prices will not decrease in the wake of a cost decrease

WDC: The antitrust risk of coordinated interaction comes primarily from firms tacitly coordinating not to decrease prices rather than coordinating to increase them

Anticompetitive Effects
Part 2B. Mavericks

Mavericks

- General idea
  - A “maverick” is a competitor that disrupts coordinated interaction among the other, more accommodating competitors that would occur in the absence of the maverick
  - When an accommodating competitor acquires a maverick, the maverick’s disruptive conduct is suppressed and the market performs less competitively to the harm of consumers
  - As a result, the acquisition of a maverick by an accommodating competitor is a special case of coordination interaction
    - Typically used to challenge deals where the target has a sufficiently small market share that the transaction would not otherwise raise major concerns
- *Example*: Grupo Modelo in ABI/Grupo Modelo
  - Unwilling to follow ABI’s price leadership
  - Has caused ABI to price lower that it would have otherwise

Why are "mavericks" mavericks?

1. The most likely reason is idiosyncratic:
   - The particular management of the firm simply believes that the firm will maximize its profits by being disruptive
   - This may be the case when the management—
     - Refuses to pursue a more industry price-accommodating strategy[1]
     - Pursues a long-run strategy of disruptive new product development or new marketing innovations[2]
   - *Query*: Should a merger be prohibited simply because the current management—perhaps even just the current CEO—believes in being disruptive?

[1] *See, e.g.*, Complaint, United States v. Anheuser-Busch InBev SA/NV, No. 1:13-cv-00127 (D.D.C. filed Jan. 31, 2013) (settled by consent decree).
[2] *See, e.g.*, Complaint, United States v. AT&T Inc., No. 1:11-cv-1560 (D.D.C. filed Aug. 31, 2011) (challenging AT&T's pending acquisition of T-Mobile; complaint voluntarily dismissed when transaction was terminated).

Why are "mavericks" mavericks?

2. Another possible reason is that something inherent in the firm's structure that makes it objectively in the profit-maximizing interest of the firm to be disruptive regardless of the predilections of its management
   - This may be the case if the firm is a small but materially lower-cost producer than the larger, more established firms
     - In this case, the firm may wish to take advantage of its lower-cost structure to discount prices and gain market share[1]
   - More generally, smaller firms may have more of an incentive to be a maverick than larger firms, since they have—
     - proportionally less incumbent business at stake in the event that a maverick strategy does not work, *and*
     - proportionally more to gain in market share in the event that the strategy works

[1] *See, e.g.*, United States v. H&R Block, Inc., 833 F. Supp. 2d 36 (D.D.C. 2011) (noting government argument that TaxACT was a "maverick" because, among other things, it was a low-cost competitor that pursued an aggressive pricing policy).

Mavericks in *H&R Block*

- Plaintiff's argument:
  - TaxACT is a "maverick" that has disrupted tacit coordination that otherwise would have occurred in the DDIY market
    - Freemium business model
    - Bucked prevailing pricing norms by introducing free-for-all offer, which others matched
    - Remains the only competitor with significant market share that relies on free and low-cost high-quality products
    - TaxACT CEO appears dedicated to freemium strategy
      - NB: Note role of idiosyncratic management preferences
    - Had the effect in pushing industry toward lower pricing, even when the two major players were not anxious to follow
  - The merger will eliminate TaxACT as a disruptive force, which high result in a higher level of coordinated interaction in the relevant market postmerger

Mavericks in *H&R Block*

- Court:
  - DOJ failed to provide clear standards for identifying a maverick
  - But key question remains:

    "Does TaxACT consistently play a role within the competitive structure of this market that constrains prices?"

  - *Conclusion 1*: TaxACT play a special role in keeping the market competitive

> The Court finds that TaxACT's competition does play a special role in this market that constrains prices. Not only did TaxACT buck prevailing pricing norms by introducing the free-for-all offer, which others later matched, it has remained the only competitor with significant market share to embrace a business strategy that relies primarily on offering high-quality, full-featured products for free with associated products at low prices.[1]

[1] United States v. H & R Block, Inc., 833 F. Supp. 2d 36, 80 (D.D.C. 2011).

Mavericks in *H&R Block*

- Court
  - *Conclusion 2*: The incentives of the merged firm to be disruptive will differ from those of TaxACT premerger

> [T]he pricing incentives of the merged firm will differ from those of TaxACT pre-merger because the merged firm's opportunity cost for offering free or very low-priced products will increase as compared to TaxACT now. In other words, the merged firm will have a greater incentive to migrate customers into its higher-priced offerings—for example, by limiting the breadth of features available in the free or low-priced offerings or only offering innovative new features in the higher-priced products.[1]

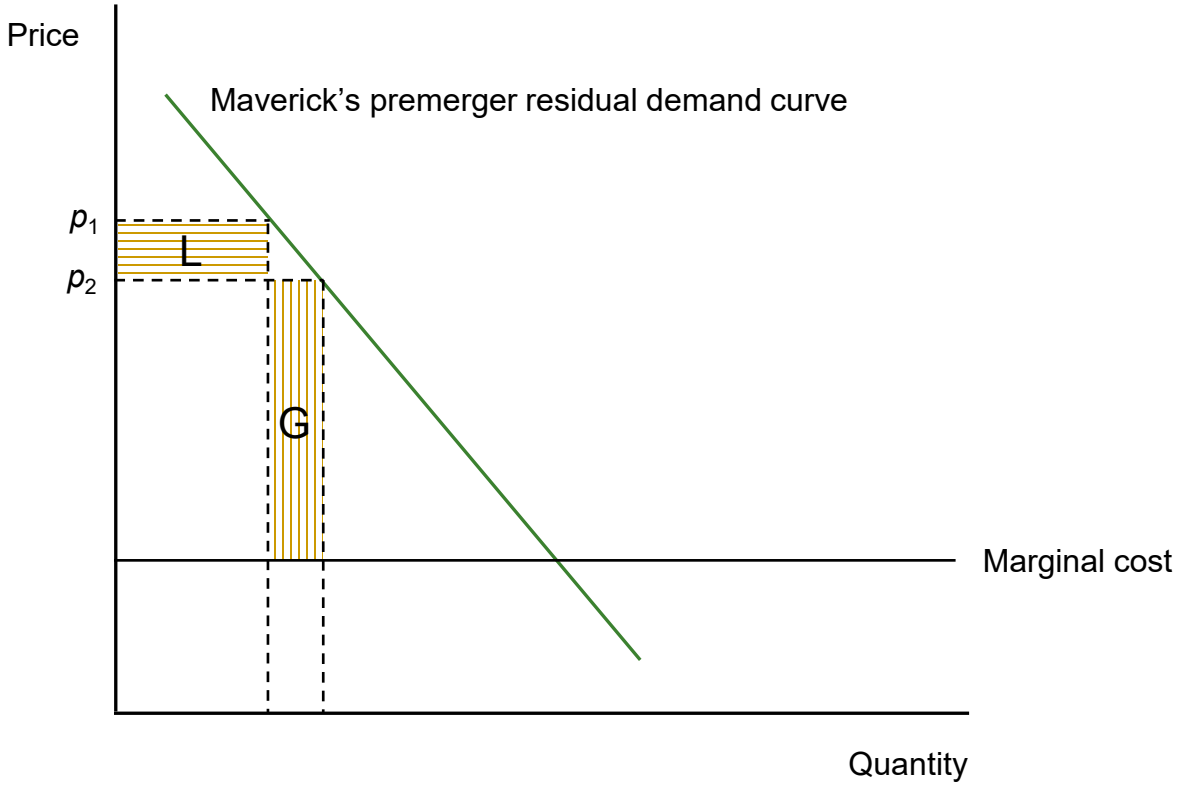
- Generally, a firm is less likely to be aggressive in pricing to increase its market share when as inframarginal sales become larger relative to marginal sales
  - In a single-price market, a price cut to increase sales requires the firm to reduce prices on all inframarginal sales
- So a merger between an established firm with a large share and a smaller "maverick" with a low market share is likely to decrease the incentive for the combined firm to be a maverick, even if the maverick's management runs the combined firm

This change in incentives is illustrated on the next two slides

[1] United States v. H & R Block, Inc., 833 F. Supp. 2d 36, 80 (D.D.C. 2011) (record citation omitted).

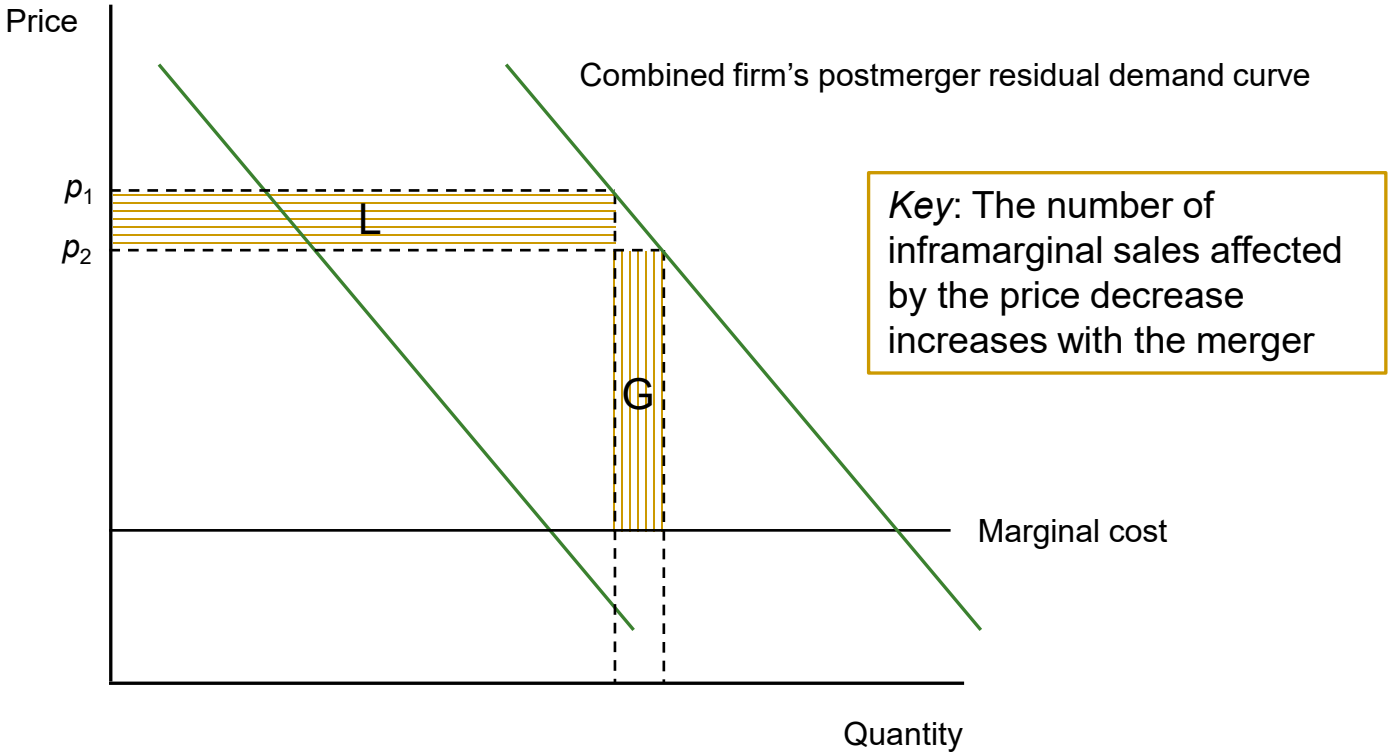
Mavericks–Postmerger incentives

- Premerger incentives to act aggressively
  - As illustrated in the diagram below, the “maverick” standing alone has an increase to lower price because the profit gains outweigh the losses



Mavericks–Postmerger incentives

- Postmerger disincentives to act aggressively
  - Postmerger, the combined firm has a greater sales volume and hence incurs greater losses than the maverick for a given price decrease
  - In the case illustrated in the diagram below, the combined firm does not have an incentive to lower price



Mavericks—Essential elements

- Bottom line: Requirements of a "maverick" theory
  - As *H&R Block/TaxACT* suggests, the following requirements should be imposed on a theory of anticompetitive harm based on eliminating a maverick:
    1. The market is conducive to a materially higher degree of coordinated interaction than it exhibits premerger;
    2. The disruptive conduct of the merger target is a material contributor to the inability of the market to achieve this higher degree of coordinated interaction;
    3. The acquisition of the merger target is likely to result in the discontinuance of the disruptive conduct; *and*
    4. The discontinuance of the merger target's disruptive activity is likely to result in a materially higher degree of coordinated interaction in the market to the harm of consumers
       - This requires that the target be unique or especially effective in its disruptive conduct

Mavericks

- One final note: The acquiring firm as the maverick
  - Although in most applications of the theory the target is the maverick, in some cases the acquiring firm may be the maverick
    - Conversely, even when the buyer is a maverick, sometimes the target management will become the management of the combined company, which raises the question of whether the disruptive activity will be discontinued
  - The incentives argument is harder for the plaintiff in these situations since the disruptive management will run the combined company
  - But the combined firm still faces an incentive to be less of a maverick because of the effect on a larger number of inframarginal sales

Anticompetitive Effects
Part 3. Unilateral Effects

Unilateral effects

- Definition
  - Unilateral effects is a theory of anticompetitive harm that goes to the elimination of significant "local" competition between the merging firms, so that the merged firm can raise prices *independently* of how other incumbent firms react

> A merger is likely to have unilateral anticompetitive effect if the acquiring firm will have the incentive to raise prices or reduce quality after the acquisition, independent of competitive responses from other firms.[1]

  - The idea
    - A cognizable anticompetitive effect results if the merging firm increases the price of one of its products as a result of the merger even if no other firm in the market increases its price—assumes there is no accommodation by other firms in the market
    - The concept of unilateral effects as a theory of merger anticompetitive harm was introduced in the 1992 DOJ/FTC Horizontal Merger Guidelines
    - The theory has been accepted as valid under Section 7 by the courts

The underlying economics is similar to that of the one-SSNIP recapture test: Is a price increase for merging product A profitable postmerger because of the recapture of some lost sales by merging product B?

[1] United States v. H&R Block, Inc., 833 F. Supp. 2d 36, 81 (D.D.C. 2011).

Unilateral effects

- Example 1: Firm A increases prices (and decreases production)

Initial conditions

	p	*c*	*$m*	*q*	Profits
Firm A	300	100	200	100	20000
Firm B	350	90	260	120	31200

Post-Price Increase

Firm A increases prices by:	30
Firm A marginal (lost) sales:	-15
Diversion: A to B	60%
Unit sales Firm A loses to Firm B:	9

	p	*c*	*$m*	*q*	Profits	Profit change
Firm A	330	100	230	85	19550	-450
Firm B	350	90	260	129	33540	2340

When A is independent, the price increase is unprofitable

When A and B merge, the price increase is jointly profitable

Unilateral effects

- Example 2: Firm A *increases* production (and *decreases* price)
  - Say for firm A:
    - Inverse demand: $p = 300 - q$
    - Fixed costs: $f = 0$
    - Marginal costs: $mc = 20$
    - Marginal revenue: $mr = 300 - 2q$

FOC: $mr = mc$
$300 - 2q = 20$
So: $q^* = 140$
$p^* = 160$
$\$m_A = 140$

  - Say when firm A increases its production by 1 unit (and lowers its price by \$1), 0.3 units that firm B would have sold now divert to Firm A ($D_{AB} = |-0.3/+1| = 0.3$)
  - If firm B's margin is also 140 at its initial price level, then firm A's one-unit increase in production causes firm B to lose \$42 ($\Delta\pi_B = D_{AB} \times \$m_B = = (0.3)(140) = \$42$).
    - That is, Firm A's conduct creates a *negative externality* for Firm B
  - When A and B are independent firms, firm A does not care about firm B's loss
  - But when firm A acquires firm B, firm A must take into account firm B's losses in firm A's marginal revenue:

$$mr_A^{postmerger} = mr_A^{premerger} - D_{AB}\$m_B$$
$$= 300 - 2q - 42$$

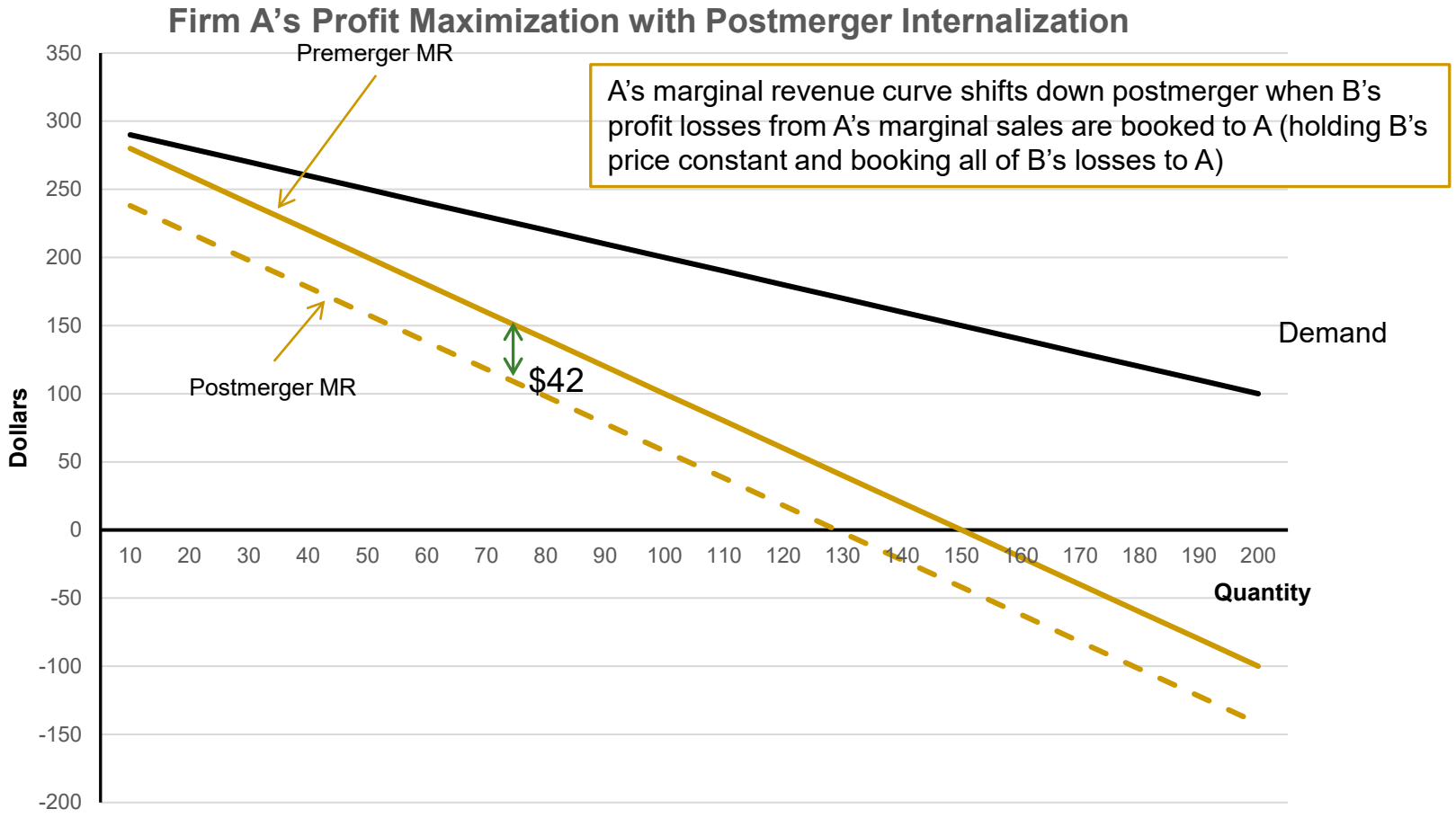
A's marginal negative externality imposed on B

This shifts firm A's marginal revenue curve down and makes firm A's marginal revenue less than its marginal cost at premerger prices. *Firm A must decrease output and increase price to reequilibrate marginal revenue and marginal cost:* $q_{postmerger} = 119$; $p_{postmerger} = 181$

Unilateral effects

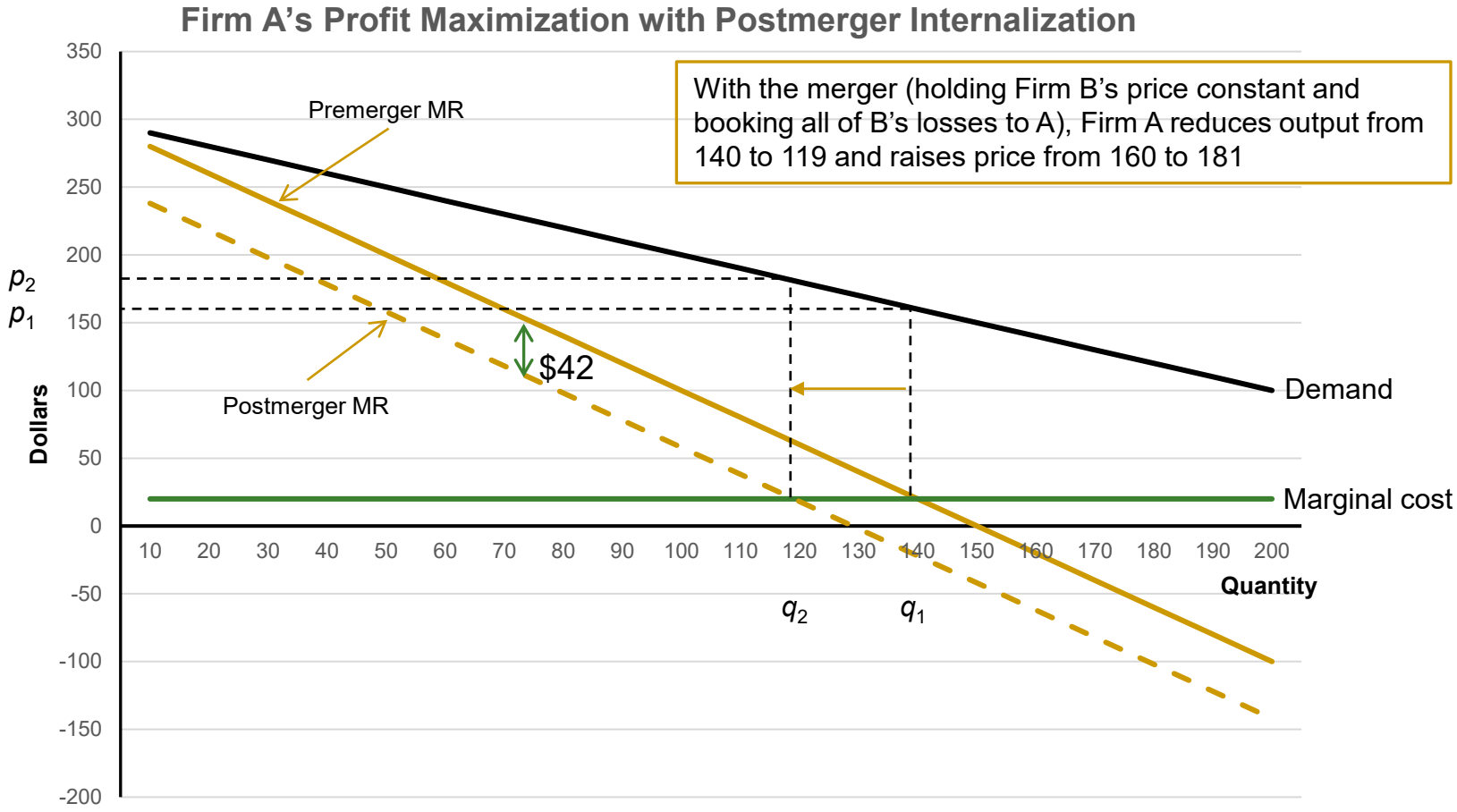
An easy way to visualize unilateral effects is to hold firm B's profits constant postmerger and book all of B's gains and losses from A's price changes to A.

- Example 2 (con't)



Unilateral effects

- Example 2 (con't)



Unilateral effects

- Why unilateral effects can be important (example)
  - Nestlé-Dreyer's in the super-premium segment of an all-ice cream market

All Ice Cream[1]
(supermarket sales in 2002)

	Sales	Share	HHI
Store brands (10)	$997.2	23.0%	53
Dreyer's	$795.4	18.4%	339
Breyer's	$686.8	15.9%	253
Blue Bell	$253.4	5.8%	34
Ben & Jerry's	$199.8	4.6%	21
Nestlé	$192.7	4.4%	19
Wells Diary	$136.9	3.2%	10
Armour Swift	$106.7	2.5%	6
Turkey Hill	$105.2	2.4%	6
Marigold Foods	$88.2	2.0%	4
Others (10)	$769.1	17.8%	32
	$4,331.4	100.0%	776
Combined share		22.8%	
Premerger HHI			776
Delta			162
Post-merger			938

HHIs fall within a Merger Guidelines' "safe harbor"

But unilateral effects indicates that the merger may be a problem if the cross-elasticities/ diversion ratios between Dreyer's and Nestlé's are:

1. High between the merging parties
2. Low with everyone else

Key: Unilateral effects create upward pricing pressure regardless of the market definition or the HHIs

[1] Sherri Day, *Nestlé and Dreyer's to Merge in $2.4 Billion Deal, Creating Top U.S. Ice Cream Seller*, N.Y. Times, June 18, 2002.

Unilateral effects

- But the DOJ avoided the use of unilateral effects in an all-ice cream market by narrowly defining the market as super-premium ice cream

All Ice Cream (1)
(supermarket sales in 2002)

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Super-Premium Ice Cream (2)
(all channels)

	Sales	Share	HHI
Ben & Jerry's	$254.40	42.4%	1797.76
Nestlé	$219.00	36.5%	1332.25
Dreyer's	$114.60	19.1%	364.81
Others	$12.00	2.0%	4
	$600.00	100.0%	3498.82
Combined share		55.6%	
Premerger HHI			3,501
Delta			1,396
Postmerger HHI			4,897

Violates Guidelines

Another important principle: *If the one-product unilateral effects profit-maximizing price increase is greater than 5%, the merging firms satisfy the HMT*

[1] Sherri Day, *Nestlé and Dreyer's to Merge in $2.4 Billion Deal, Creating Top U.S. Ice Cream Seller*, N.Y. Times, June 18, 2002.
[2] Complaint, *In re* Nestlé Holdings, Inc., 136 F.T.C. 791 (2003) (settled by consent decree).

Unilateral effects: Requirements

- General requirements of the theory
  1. There must be two products differentiated in prices (premerger or postmerger)
  2. The products of the merging parties must be close substitutes for one another
  3. The products of (most) other firms must be sufficiently more distant substitutes to permit the merged firm to profitably increase price for at least one of its products
  4. Entry, expansion or repositioning into the products of the merging firms must be sufficiently difficult so as not to defeat the profitability of the merging firm increasing its prices postmerger

- Specific Guidelines requirements
  - 1992: Merging companies—
    1. had to be each other's closest competitors, *and*
    2. the combined firm had to have a market share of at least 35%

    Problem: Some cabining was necessary, since otherwise the unilateral effects theory applies too broadly to any merger where the combining firms have positive cross-elasticity with one another and a positive margin and the market exhibits barriers to entry and repositioning

  - 2010: Eliminated both the closest substitute and 35% share requirements
    - Mostly accepted by the courts
    - Where courts have used the 1992 requirements the merging firms satisfied both requirements
      - So post-2010, the 1992 requirements have not been used to reject a unilateral effects theory

Unilateral effects

- The profit-maximizing economics
  - Suppose the merged firm increases its production of product A by one unit:
    - Premerger, firm A was maximizing its profits, so its first-order condition must be satisfied:

$$mr_A^{\text{Premerger}} = mc_A$$

    - Postmerger, the merged firm has to take into account the profits on any diverted sales from firm B (the other merging party) when the A's price is decreased to clear the market
    - Firm B's lost profits (holding its price constant) is the diverted quantity times firm B's margin:

$$D_{A\to B} = \left|\frac{\Delta q_B(-)}{\Delta q_A(+)}\right| \qquad \Delta\pi_B = -D_{A\to B}\$m_B$$

We need a negative sign on lost profits because when firm A increased its production, A recaptured sales from B

    - Accounting for firm B's lost profits on firm A's books gives firm A marginal revenue for a price increase as:

$$mr_A^{Postmerger} = mr_A - D_{A\to B}\$m_B$$

    - But since $D_{A\to B}\$m_B > 0$, then:

$$mr_A^{\text{Postmerger}} < mr_A^{\text{Premerger}} = mc_A.$$

    - That is, A's postmerger marginal revenue evaluated at A's premerger level of production is less than A's marginal cost. So A needs to reduce production and increase price postmerger to satisfy its FOC postmerger

Offsetting marginal cost efficiencies

- *Query*: What marginal cost reduction would be necessary to offset a one-product unilateral effect when firms A and B merge?
  - Start with the first-order condition for firm A with no marginal cost efficiencies:

Where quantity is the control variable

$$mr_A^{postmerger} = mr_A^{premerger} - D_{AB}\$m_B = mc_A$$

Remember, here D_{AB} = | B's unit loss/ A's unit increase |

  - Say the marginal cost efficiencies reduce marginal costs by *e* percent. Then:

$$mr_A^{postmerger} = mr_A^{premerger} - D_{AB}\$m_B = (1-e)mc_A$$

    - Rearranging and cancelling equal terms:

$$mr_A^{premerger} - D_{AB}\$m_B = mc_A - e \times mc_A$$

Remember: $mr_A^{premerger} = mc_A$

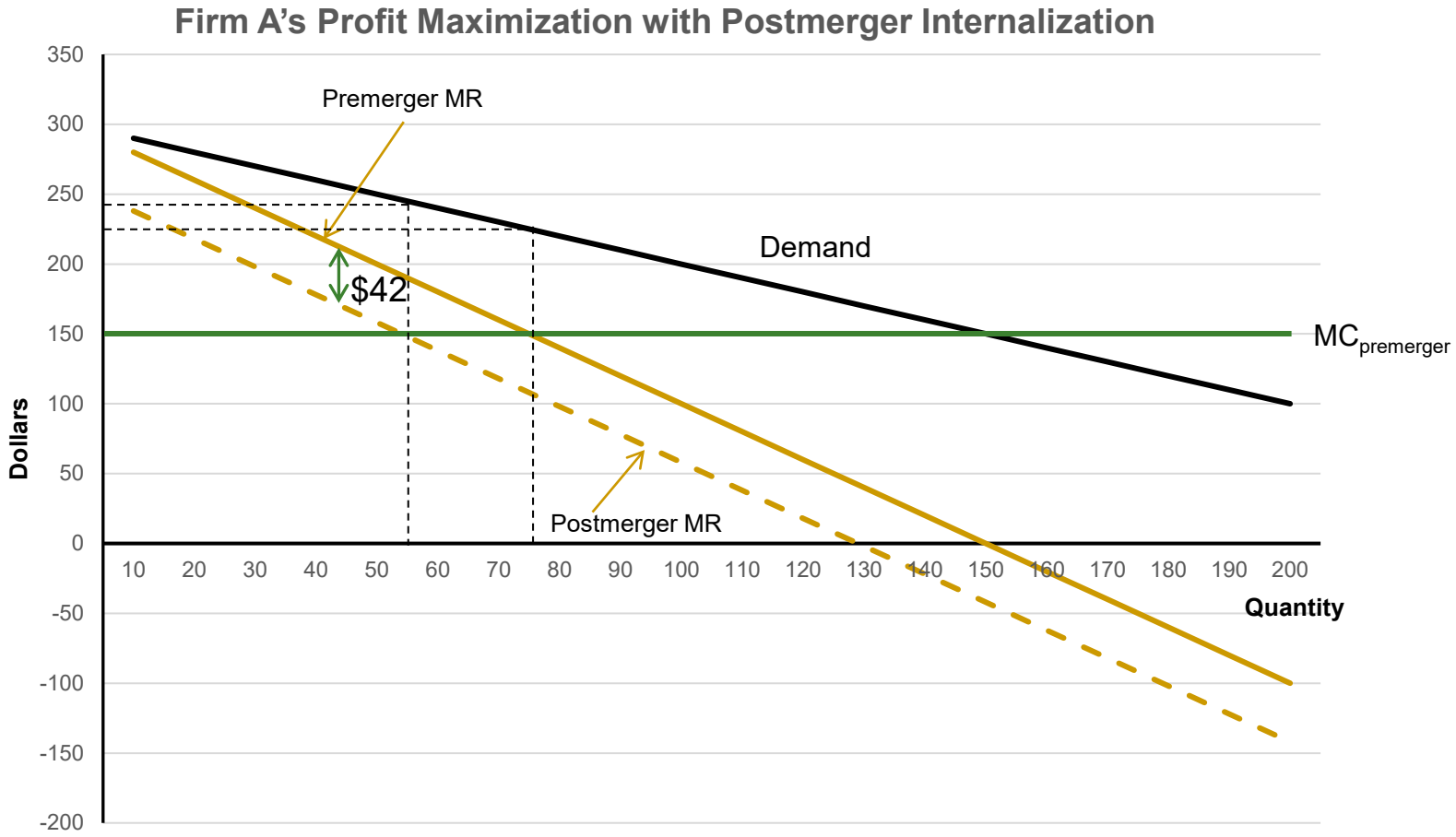
  - So the following equation must be satisfied to restore the first order condition at original prices and output:

$$D_{AB}\$m_B = e \times mc_A$$

that is, the downward pricing pressure from the marginal cost reduction must offset the upward pricing pressure from diversion

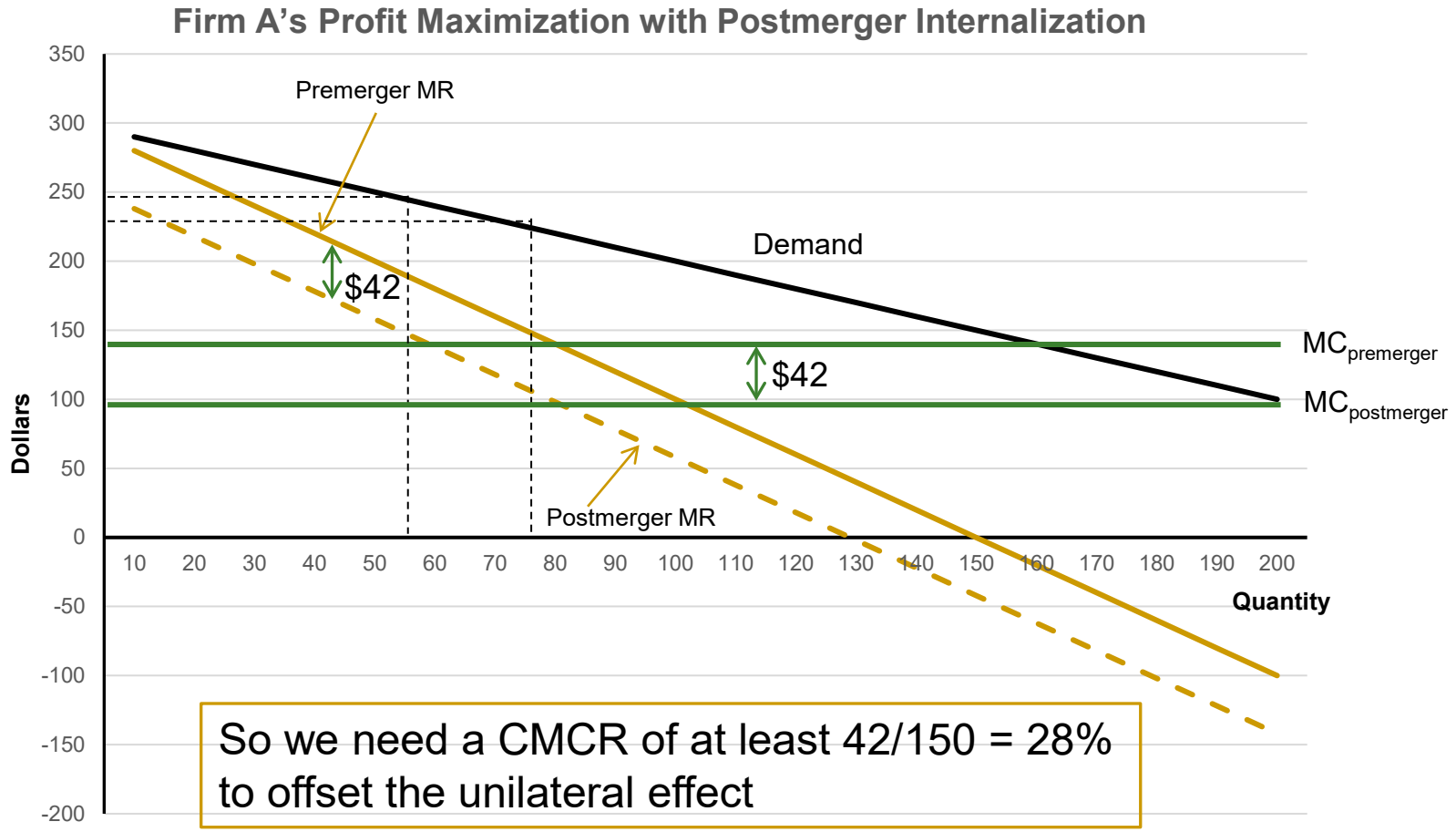
Offsetting marginal cost efficiencies

- Graphically: Postmerger without compensating marginal cost reduction



Offsetting marginal cost efficiencies

- Graphically: Postmerger with compensating marginal cost reduction



Offsetting marginal cost efficiencies

- Interpretation
  - *Rule*:
    - If marginal cost efficiencies are the only source of downward pricing pressure in a merger, the merged firm can increase profitably increase the price of product A unless:

$$D_{AB}\$m_B \leq e \times mc_A$$

where $D_{AB}\$m_B$ is the dollar subsidy per unit of A's total lost units paid to B and $e \times mc_A$ is the dollar marginal cost saving per unit of A produced

- Multiplying both sides by Δq_A:

$$\Delta q_A D_{AB}\$m_B = \Delta q_B \$m_B \leq \Delta q_A \left(e \times mc_A\right)$$

In order words, the total efficiency cost savings must be large enough to pay for the total subsidy to B

Offsetting marginal cost efficiencies

- Use in Kroger/Albertsons (2024)
  - Dr. Nicholas Hill, the FTC's economics expert at trial, used this relationship at trial to determine that, given the diversion ratios, dollar margins, and marginal costs, marginal costs must decrease by at least 5% to offset the upward pricing pressure from the unilateral effect in each of 1,472 local markets
    - Hill called this the "compensating marginal cost reduction" ("CMCR")

> CMCR analysis calculates a value that represents the reduction in marginal costs that would be necessary to offset the merged firm's incentives to raise prices. If the CMCR value is greater than the marginal cost reductions predicted to result from the acquisition, then the merged firm is likely to increase prices due to the acquisition.[1]

  - Hill observed that the total reductions in marginal costs that the merging parties estimate—regardless of whether such estimates are verified or merger-specific—are less than 1% of defendants' combined total operating cost
    - WDC: Operating costs are fixed costs plus variable costs. If measured against only variable costs, the marginal cost savings would be a somewhat greater percentage.
  - Hill concluded that the CMCR analysis "confirms that substantial competition will be eliminated and is conservative in using a 5% threshold to reach that conclusion."[2]

[1] Plaintiffs' Memorandum of Law in Support of Plaintiffs' Preliminary Injunction Motion 16 (filed July 26, 2024; redacted version July 30, 2024) ("CMCR analysis calculates a value that represents the reduction in marginal costs that would be necessary to offset the merged firm's incentives to raise prices.") (footnote omitted).

[2] *Id.* at 17 (footnote omitted).

Unilateral effects in *H&R Block*

- Court:
  - Reframed unilateral effects in terms of a negative defense in rebuttal to the *PNB* presumption, so that the merging parties had the burden of production of showing that unilateral effects were unlikely
  - Findings with respect to market definition make out a prima facie showing of unilateral effects:
    1. H&R Block and TaxACT products were differentiated in price
    2. H&R Block and TaxACT products were close substitutes to each other
       - Although not each other's closest substitutes
    3. (Most) other products were distant substitutes
       - But Intuit was a close—indeed, the closet—substitute to both H&R Block and TaxACT
    4. High barriers to entry, expansion, and repositioning was difficult

Unilateral effects in *H&R Block*

- Defendants' rebuttal
  1. Pledge to maintain TaxACT's current prices (more of a fix)
     - *Defendants*: Would maintain current prices for three years
       - Argument: no price changes → no diversion → no anticompetitive unilateral effect
     - *Court*: Not a defense even assuming truthfulness
       - Can create diversion in other ways
         - Could manipulate other variables (e.g., reduce functionality of free products) to make paid, more functional products more attractive)
         - Could market free products less aggressively and more selectively
  2. Two-brand strategy
     - *Defendants*: Will maintain both brands—HRB (high end) and TaxACT (low-end)
     - *Court*: Subject to anticompetitive manipulation in the attributes of products
  3. Combined firm's market share too low
     - *Defendants*: Combined share is only 28.4%
       - Below the 35% required in some cases and the 1992 Guidelines
     - *Court*: There is no market share threshold for unilateral effects
       - Consistent with the 2010 Guidelines
  4. Merging parties not each other closest substitutes
     - *Defendants*: Intuit is the closest DDIY substitute to both HRB and TaxACT
       - As required by some courts and the 1992 Merger Guidelines
     - *Court*: Not required to be each other's closest substitute (consistent with the 2010 MG)

Merger simulation in *H&R Block*

- *Court*: Merger simulation also shows likely unilateral price increase
  - Merger simulations supposedly predict quantitatively the level of the combined firm's profit-maximizing price increase postmerger
  - Warren-Boulton did a merger simulation showing a likely substantial unilateral price increases in all three DDIY products following the merger
  - Predicted price increases postmerger—
    - TaxACT 83%
    - HRB 37%
    - TurboTax 11% ← This results from an accommodating price increase within the Bertrand model

The quantification of a price effect resulting from a merger is called a merger simulation

Merger simulation

- Problems with merger simulation
  - Only as good as the model, the data, and the parameter estimates that go into the simulation
  - Often predict “hard to believe” price increases
  - Small changes in the model specification or the parameter estimation methods can result in big changes to the predicted postmerger price increases
  - Very few studies testing the accuracy of postmerger simulation with the use of actual postmerger data
    - That is, few studies examine how close or how far the simulated results are from what actually happened

Overall, courts have been very reluctant to give much weight to merger simulations

Merger simulation in *H&R Block*

- Warren-Boulton model: Used a very simple model—
  - Diversion ratios between HRB and TaxACT
  - Price-cost margins of the two products
  - A Bertrand pricing model
- The opinion did not give the details of the Bertrand pricing model
- But we will look at a "gross upward pricing pressure index" (GUPPI) simulation model

GUPPIs

- Gross Upward Pricing Pressure Index (GUPPI)
  - Definition (unmotivated):

$$GUPPI_A \equiv \frac{\text{value of profits from sales diverted to product B}}{\text{value of all sales lost by product A}} = \frac{\Delta q_B \left(p_B - c_B\right)}{\Delta q_A p_A}$$

  - Let $m_B = \frac{p_B - c_B}{p_B}$ the percentage gross margin of product B and D_{AB} be the diversion ratio between product A and product B.

    Then multiplying by p_B/p_B yields:

$$GUPPI_A == \frac{\Delta q_B}{\Delta q_A} \frac{\left(p_B - c_B\right)}{p_B} \frac{p_B}{p_A} = D_{AB} m_B \frac{p_B}{p_A},$$

Remember, m is the percentage margin, so $m_B p_B$ is the $\$m_B$

    which is the usual form of the expression for a GUPPI
  - Section 6.1 of the 2010 DOJ/FTC Horizontal Merger Guidelines implicitly creates of measure of this type

GUPPIs

- GUPPIs and various measures of diversion
  - Recall the formula: $GUPPI_1 = D_{12} m_2 \frac{p_2}{p_1}$,

    where D_{12} is the diversion ratio from firm 1 to firm 2
  - We can also define a diversion ratio in sales:

$$D_{12}^{sales} = \frac{\text{Change in the value of firm 2's sales}}{\text{Change in the value of firm 1's sales}} = \frac{p_2 \Delta q_2}{p_1 \Delta q_1} = D_{12} \frac{p_2}{p_1}.$$

  - Using the sales diversion ratio, we have:

$$GUPPI_1 = D_{12}^{sales} m_2,$$

  - It is important to understand the measure of diversion in order to use the proper GUPPI formula
  - One more useful formula:

$$GUPPI_1 = \frac{p_2 \Delta q_2}{p_2 q_2} \times \frac{p_2 q_2}{p_1 q_1} \times m_2 = \frac{\Delta sales_2}{sales_2} \times \frac{sales_2}{sales_1} \times m_2,$$

    which is the percentage change in the sales (not units) of firm 2 times the ratio of firm 2's sales to firm 1's sales times the margin of firm 2. This formula can be useful when the firms sell multiple products and sales data is more readily available.

GUPPIs

- Relationship of GUPPIs to one-SSNIP recapture tests
  - Recall the formula: $GUPPI_1 = D_{12} m_2 \frac{p_2}{p_1}$,

    where D_{12} is the diversion ratio from firm 1 to firm 2
  - Recall the one-SSNIP recapture test:

$$R_1 > R^1_{Critical} = \frac{\delta p_1}{\$m_{RAve}} \quad \left(= \frac{\$SSNIP_1}{\$m_{RAve}} \right).$$

    where the critical recapture rate $R^1_{Critical}$ is the recapture rate at which the hypothetical monopolist breaks even on profits.
  - Consider a candidate market of the two products of the merging firms. Let's reinterpret the relationship by replacing $R^1_{Critical}$ with the actual diversion rate $D_{1\rightarrow 2}$ and solving for δ:

$$\delta^1_{Breakeven} = \frac{D_{12}\$m_2}{p_1} = D_{12} m_2 \frac{p_2}{p_1} \qquad = GUPPI_1$$

    where $\delta^1_{Breakeven}$ is the breakeven percentage price increase for product 1 given an actual diversion rate D_{12}

    So the GUPPI for product one is the breakeven percentage price increase for product 1 of the merged firm when it holds the price of product 2 constant

GUPPIs

- "Merger simulation" with GUPPIs
  - *Model 1*: Assumes the *merged firm* faces a residual demand curve that is linear in product 1
    - Recall that when the residual demand curve is linear, then the breakeven percentage price increase is twice the profit-maximizing price[1]
    - Hence:

$$\delta^1_{\text{Profitmax}} = \frac{\delta^1_{Breakeven}}{2} = \frac{D_{12}m_2}{2}\frac{p_2}{p_1} = \frac{GUPPI_1}{2}.$$

    - Observations
      - The conditions under which the merged firm will have a residual demand curve are restrictive
      - Even so, the above equation can be use to estimate the profit-maximizing percentage price increase for product 1 knowing that there will be errors

[1] See the class notes on the profit-maximization variation of the hypothetical monopolist test.

GUPPIs

NB: When each merging firm faces a linear residual demand curve, the residual demand curve of the merged firm generally will not be linear (as it was in Model 1)

- "Merger simulation" with GUPPIs
  - *Model 2*: Assumes *each merging firm* faces a linear residual demand curve
    - In the very special case of linear residual demand curves and equal diversion ratios ($D_{AB} = D_{BA} = D$), equal marginal costs, equal prices, equal margins, equal market shares, Bertrand competition, no changes in the prices of any nonmerging firm, and no entry/expansion/repositioning or efficiencies. The GUPPI gives the profit-maximizing price increase postmerger under the unilateral effects theory
    - The profit-maximizing price increase for product A leaving the price of product B at its premerger level:

$$\frac{\Delta p_A{}^*}{p_A} = \frac{GUPPI}{(1-D)} = \frac{Dm}{(1-D)}$$

since $p_A = p_B$ and so $p_A/p_B = 1$

    - The profit-maximizing price increase for both product A and product B when raising the price of both products:

$$\frac{\Delta p_A{}^*}{p_A} = \frac{\Delta p_B{}^*}{p_B} = \frac{GUPPI}{2(1-D)} = \frac{Dm}{2(1-D)}$$

    - In other words, the profit-maximizing price increase when the merged firm raises the price of both products is half of the profit-maximizing price increase when the merged firm raises the price of only one of the two products
      - This makes sense given the linearity of demand and the symmetry assumptions in the model

For proofs and an expanded treatment, see Carl Shapiro, Unilateral Effects Calculations 3-7 (Oct. 2010), *available at* http://faculty.haas.berkeley.edu/shapiro/unilateral.pdf.

GUPPIs

Why look at so special a case?
Because the 2010 Horizontal Merger Guidelines uses Model 2 in Example 5!

GUPPIs

- Merger simulation with GUPPIs in the Merger Guidelines
  - Example 5 of the 2010 DOJ/FTC Horizontal Merger Guidelines

> Products A and B are being tested as a candidate market. Each sells for $100, has an incremental cost of $60, and sells 1200 units. For every dollar increase in the price of Product A, for any given price of Product B, Product A loses twenty units of sales to products outside the candidate market and ten units of sales to Product B, and likewise for Product B. Under these conditions, economic analysis shows that a hypothetical profit-maximizing monopolist controlling Products A and B would raise both of their prices by ten percent, to $110.

- How do the Guidelines predict that the profit-maximizing price will increase by $10?
  - Summary of parameters

$$p = \$100 \qquad c = \$60$$

$$D = \frac{10}{10+20} = 1/3 \qquad m = \frac{p-c}{p} = \frac{100-60}{100} = 0.4$$

  - The market exhibits linear demand and complete symmetry, so we can use the simple GUPPI model:

$$\frac{\Delta p_1^*}{p_1} = \frac{\Delta p_2^*}{p_2} = \frac{Dm}{2(1-D)} = \frac{(1/3)(0.4)}{2(1-1/3)} = 0.10 \quad \text{or } 10\%$$

So price will increase from $100 to $110

GUPPIs

- Merger simulation with GUPPIs
  - The model so far is very restrictive with all of its symmetry conditions
  - Loosening these conditions makes things complicated very quickly
    - For example, when residual demand for both firms is linear but diversion ratios and margins differ, the optimal price increase formula becomes:

$$\frac{\Delta p_A^*}{p_A} = \frac{\left(D_{B\to A}\left(D_{B\to A} + D_{A\to B}\right)\right)m_A + 2D_{A\to B}m_B}{4 - \left(D_{B\to A} + D_{A\to B}\right)^2}$$

You should just see this to understand how quickly the formula becomes with a relaxation of the restrictions. You will not be required to know or use the formula.