
Unit 5B: H&R Block/TaxACT

Part 2. Anticompetitive Effect and Defenses

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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 [to the extent adopted]
 - C. Other evidence of anticompetitive effect
 - Unilateral effects
 - Coordinated effects
 - Elimination of a maverick
- Step 2: Defendants’ rebuttal
 - A. Challenges to the prima facie case (failure of proof on upward pricing pressure)¹
 - B. Traditional defenses (offsetting downward pricing pressure) ← {

H&R Block
 - Entry/expansion/repositioning
 - Efficiencies
 - Countervailing buyer power (“power buyers”)
 - Failing company/division
- Step 3: Court resolves factual issues and determines net effect on competition

Proving Prima Facie Anticompetitive Effect

- Two principal methods in horizontal merger cases:
 - The *Philadelphia National Bank* structural presumption
 - Explicit theories of anticompetitive harm
- Application in H&R Block/TaxACT:
 - Structural evidence: market shares and HHIs
 - Explicit theories:
 - Coordinated effects
 - Elimination of a maverick
 - Unilateral effects

H&R Block: Defendants' rebuttal arguments

■ Four arguments

1. The DDIY market was not susceptible to coordination, and the merger would not increase the likelihood of coordinated interaction
2. The merger would not produce anticompetitive unilateral effects
3. Expansion by existing DDIY firms other than Intuit, H&R Block, and TaxACT would offset any anticompetitive effects
4. Merger-specific efficiencies would offset any anticompetitive effects

The Prima Facie Case: The *PNB* Presumption

The *PNB* presumption

- 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 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: Origins

■ *Philadelphia National Bank*:¹

- Created in 1963 as the Court was becoming increasingly restrictive on business
 - The Court's next merger decision after *Brown Shoe*
 - Drafted by Richard Posner, then a law clerk to Justice Brennan (who did not like to draft opinions)
- Originally created as a *rebuttable* presumption of the requisite anticompetitive effect where the combined firm passed some (undefined) thresholds of—
 1. Combined market share, *and*
 2. Increasing market concentration
- But quickly became a *conclusive* presumption in the lower courts
 - Essentially eliminated any defense once the prima facie case was proven
- Returned to a rebuttable presumption by the Supreme Court in *General Dynamics*¹ in 1974

¹ United States v. General Dynamics Corp., 415 U.S. 486 (1974).

United States v. General Dynamics Corp.

- In the 1970s, the economy took a downturn
 - Significant inflation as a result of the debt financing of the Vietnam war and the Mideast oil shocks
 - Substantial concern about U.S. competitiveness in the world market
- General Dynamics (1974)¹
 - DOJ action—Filed September 22, 1967
 - DOJ relied on PNB presumption
 - 1959: 15.1% (#1) + 8.1% (#5) → 23.2% (#1) (in Illinois market)
 - 1967: 12.9% (#2) + 8.9% (#6) → 21.8% (#2) (in Illinois market)
 - Increasing concentration
 - Supreme Court—No violation
 - Agreed that DOJ's evidence triggered *PNB* presumption
 - BUT defendants rebutted presumption 
 - Because competition centered on long-term contracts, and the ability to compete for those contracts depended on available coal reserves, uncommitted reserves were a better measure of future competitive significance
 - United Electric held relatively few uncommitted reserves, so historical production overstated its future competitive significance → DOJ's prima facie case rebutted
 - There has been no significant merger antitrust case on the merits in the Supreme Court since *General Dynamics* in 1974

Key: General Dynamics reestablished the *PNB* presumption as rebuttable by showing that the merger would not increase the exercise of market power

Rebuttals to the *PNB* presumption

- Two general types of rebuttals—
 - Attack the factual predicates of the presumption. For example:
 - The shares and market concentration are different than what the government claims
 - The wrong metric is being used (e.g., total reserves as opposed to uncommitted reserves, as in *General Dynamics*)
 - Advance other factors to show that the presumption does not provide a good prediction of anticompetitive effect in this particular case. For example:
 - Entry, repositioning, or production expansion by other firms are likely and sufficient to offset any anticompetitive effect that the merger might otherwise create
 - Efficiencies resulting from the transaction will make the merger procompetitive rather than anticompetitive

The *PNB* presumption: Current role

■ Bottom line

- However viewed, the *PNB* presumption remains the point of departure in the litigation of horizontal mergers in the analysis of competitive effects
- All courts expect the plaintiffs to use the *PNB* presumption
 - Whether the use of the presumption is legally required has never been litigated
- An outlier
 - In *JetBlue/Spirit*, the district court held that the *PNB* presumption is not “self-executing” and “does not, on its own, sustain a prima facie case”¹
 - *WDC*: This conclusion conflicts with well-established precedent and is unlikely to be sustained on appeal
 - While it is true that plaintiffs in Section 7 cases generally present other evidence as part of their case-in-chief, this does not mean that the *PNB* presumption is not sufficient standing alone to make out a prima facie case of anticompetitive effect
 - In modern cases, however, the *strength* of the *PNB* presumption in Step 3 of *Baker Hughes* is highly dependent on the strength of evidence on explicit theories of anticompetitive harm

¹ United States v. JetBlue Airways Corp., No. CV 23-10511-WGY, 2024 WL 162876, at *26 (D. Mass. Jan. 16, 2024).

The *PNB* presumption: *H&R Block*

- The *H&R Block* court used 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	$2 \times \text{HRB share} \times \text{TaxACT share}$
Postmerger HHI		4691	Sum of the premerger HHI + Δ

Triggers the 2010 Guidelines presumption:
Postmerger HHI exceeds 2500 and delta exceeds 200

Note: The court appears to have assumed that six equal-sized firms are in the “other” category.

The *PNB* presumption

■ Measures of market share

□ Differentiated product markets

- Where products are differentiated in price, the convention is to use *revenue shares*
- The 2010 Merger Guidelines explain:

In most contexts, the Agencies measure each firm's market share based on its actual or projected revenues in the relevant market. Revenues in the relevant market tend to be the best measure of attractiveness to customers, since they reflect the real-world ability of firms to surmount all of the obstacles necessary to offer products on terms and conditions that are attractive to customers.¹

□ Homogeneous product markets

- If all suppliers charge the same price, unit shares and revenue shares will be identical
- The convention, however, is to use *unit shares*
- The 2010 Merger Guidelines explain:

In markets for homogeneous products, a firm's competitive significance may derive principally from its ability and incentive to rapidly expand production in the relevant market in response to a price increase or output reduction by others in that market. As a result, a firm's competitive significance may depend upon its level of readily available capacity to serve the relevant market if that capacity is efficient enough to make such expansion profitable. In such markets, capacities or reserves may better reflect the future competitive significance of suppliers than revenues, and the Agencies may calculate market shares using those measures.²

¹ 2010 Merger Guidelines § 5.2.

² *Id.*

Calculating HHIs

■ Observations

- *Calculating the delta*: Let a and b be the market shares of the merging companies.

Premerger contribution to the HHI: $a^2 + b^2$

Postmerger contribution to the HHI: $(a + b)^2 = a^2 + 2ab + b^2$

Difference (= HHI delta): $2ab$ ← This is important to know

- *Dealing with the “other firms” category*: Market share lists often contain an “other firms” category with an aggregate share for these firms. In TaxACT, for example, “others” had an aggregate share of 9.4%. If the number of other firms is two or greater, simply squaring this number in the HHI calculation will overstate the HHI. To get a better estimate of the contribution of the other firms to the HHI, analysts typically assume that there are n equally sized firms that account collectively for a share s . The contribution of the other firms to the HHI is then:

Share of each “other” firm: $\frac{s}{n}$ Each “other” firm’s HHI contribution: $\left(\frac{s}{n}\right)^2$

Total HHI contribution of all n firms: $n\left(\frac{s}{n}\right)^2 = \frac{s^2}{n}$

In *H&R Block*, the court appeared to assume six equally sized firms. So the contribution to the HHI from the other firms was $\frac{9.4^2}{6} = 14.7$.

The 2010 Merger Guidelines

■ “HHI thresholds”¹

- Not really *PNB* thresholds, but courts tend to use them that way¹

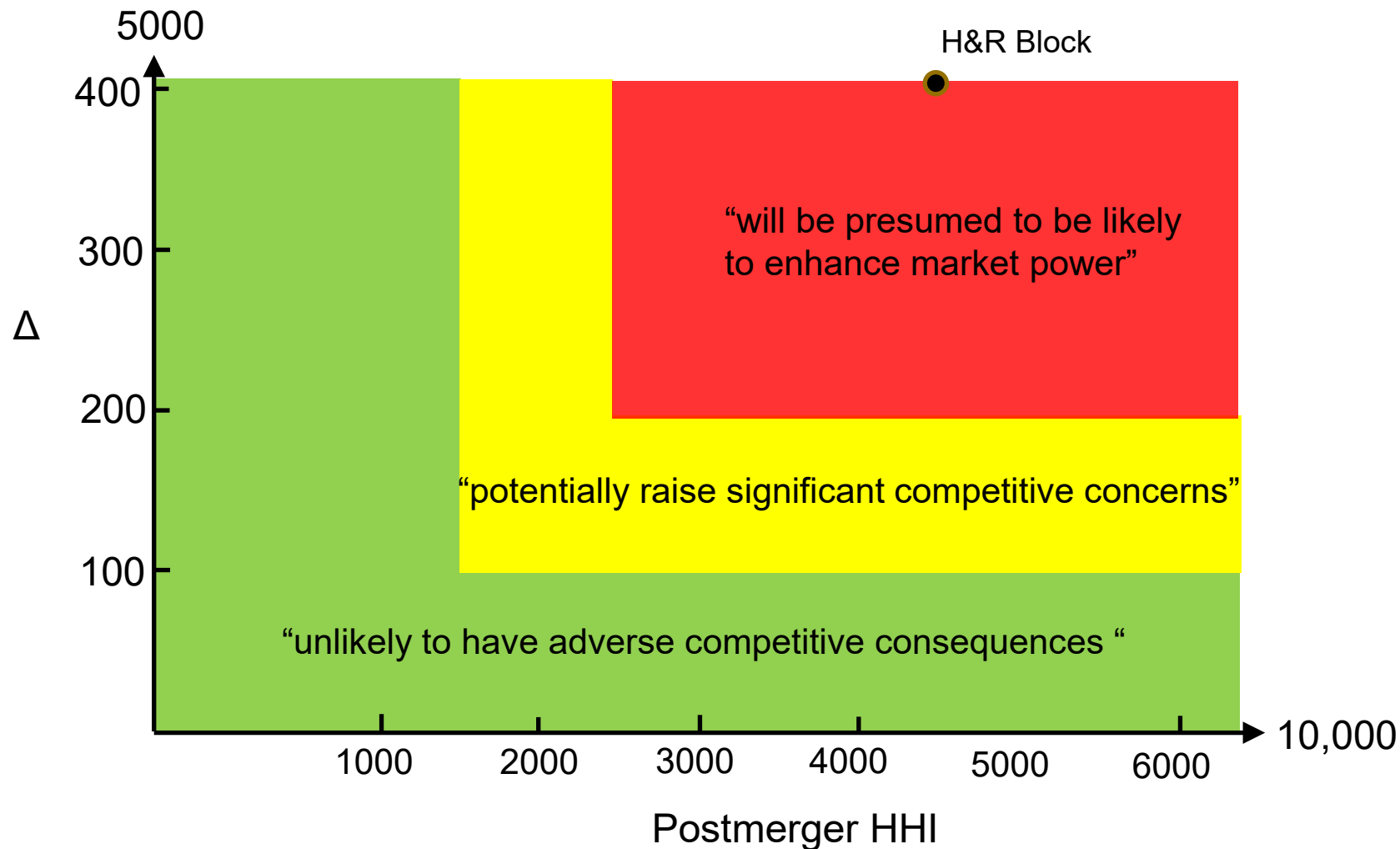
Postmerger HHI	Δ HHI	Guidelines
--	< 100	“unlikely to have adverse competitive consequences and ordinarily require no further analysis”
< 1500	--	“unlikely to have adverse competitive consequences and ordinarily require no further analysis”
Between 1500 and 2500	≥ 100	“potentially raise significant competitive concerns and often warrant scrutiny”
> 2500	100-200	“potentially raise significant competitive concerns and often warrant scrutiny”
	≥ 200	“will be presumed 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 The “HHI” is a market concentration statistic. To calculate it, take the square of the market share of each firm in the relevant market and square it, and then add up all of the squared market shares. The “ Δ HHI” (or just “delta” or “ Δ ”) is the difference between the HHI after the merger and the HHI before the merger.

² “The purpose of these thresholds is not to provide a rigid screen to separate competitively benign mergers from anticompetitive ones, although high levels of concentration do raise concerns. Rather, they provide one way to identify some mergers unlikely to raise competitive concerns and some others for which it is particularly important to examine whether other competitive factors confirm, reinforce, or counteract the potentially harmful effects of increased concentration.” 2010 Merger Guidelines § 5.3.

The *PNB* presumption

- The 2010 Merger Guidelines thresholds



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 $\Delta\text{HHI} > 100$

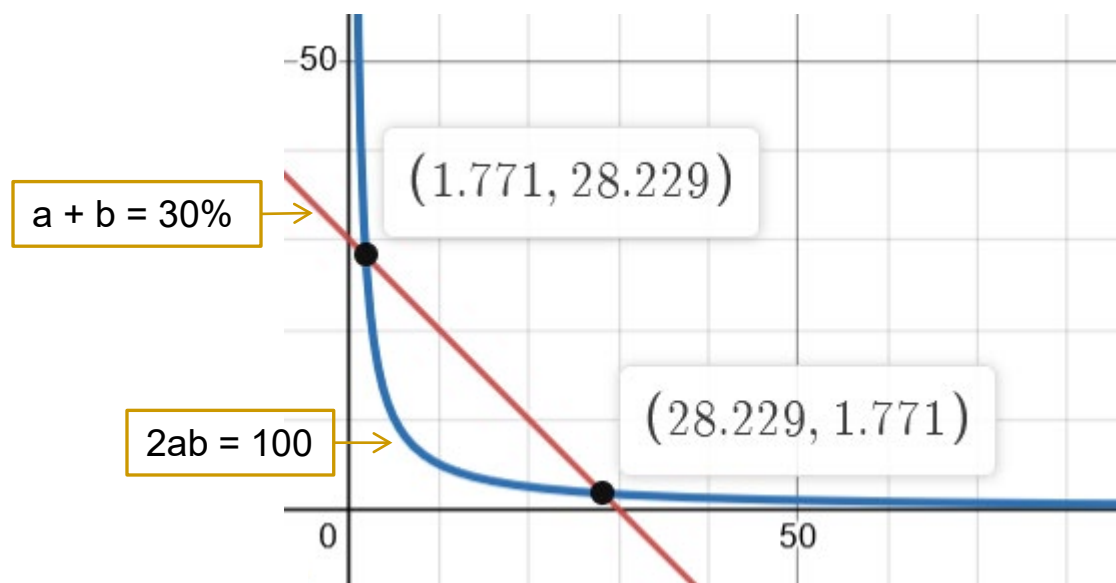
	2010 Horizontal Merger Guidelines	2023 Merger Guidelines
Post-merger HHI and ΔHHI levels to trigger structural presumption	2,500 and change in HHI greater than 200	Greater than 1,800 and change in HHI greater than 100 ¹
Merged company's market share trigger	No stated market share presumption. Market 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.* at 6 n.16 (citing *United States v. Philadelphia National Bank*, 374 U.S. 321, 364-65 (1963)).

The 2023 Merger Guidelines: 30% trigger

- The 30% trigger essentially triggers the *PNB* presumption whenever the two firms have a combined market share of 30%
 - The $\Delta\text{HHI} > 100$ requirement adds little to the 30% combined-share threshold
 - At a combined share of 30%, the ΔHHI exceeds 100 unless the smaller merging firm has a market share below approximately 1.8%



Market participants¹

■ The general 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:
 - a. *Vertically integrated firms*: But only to the extent that they would divert production from captive use to merchant sales in response to a SSNIP
 - b. *Committed entrants*: Firms not currently earning revenues in the relevant market but committed to entering the market in the near future
 - c. *Rapid entrants*: Firms that would very likely respond rapidly to a SSNIP without incurring significant sunk costs

Identifying market participants

■ Nonseller “rapid entrants”

- The 2010 and 2023 Merger Guidelines limit “rapid entrants” to those firms whose entry does 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 attribution¹

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
 - In a homogeneous market with a single price for all products, market share is the same whether measured in production units or revenues
 - Where production can be increased quickly, capacity is often the better measure of market share
 - BUT do not include capacity that is committed or so profitably employed outside the relevant market, or so high-cost, that it would not likely be used to respond to a SSNIP in the relevant market
 - 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 changed 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 the 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

2. Nonsellers

- The Merger Guidelines
 - 2010 Merger Guidelines
 - Do not state how market shares are to be quantified for prospective sellers, whether committed or rapid entrants, other than to note that they will be assigned shares “only if a measure of their competitive significance properly comparable to that of current producers is available”¹
 - 1992 Merger Guidelines
 - Assign market share to the extent of their potential supply response to the hypothetical price increase (SSNIP)
- The practice
 - The burden of showing that a firm is a “rapid entrant” and establishing its market share is on the merging parties
 - In an investigation, the parties will have to identify *by name* any putative rapid entrants
 - These companies will be vigorously questioned by the investigating staff on their ability and incentive to enter the relevant market and the levels and timing of any entry
 - Third-party companies are frequently hesitant to speculate on what strategies they might pursue
 - In other situations, the firm’s managers may not wish to answer hypothetical questions and therefore may say that they do not know what the firm would do
 - Reliability of market share estimates
 - In almost all cases, the lack of data would make these share estimates wildly speculative
 - If no reliable measure comparable to the shares of current producers is available, a nonseller should not be assigned a positive market share for purposes of calculating the HHI

¹ See 2010 Merger Guidelines § 5.2.

The Prima Facie Case: Explicit Theories of Anticompetitive Harm

Theories of anticompetitive harm

■ In horizontal transactions

1. Coordinated effects

- The merger facilitates pricing or other harmful coordinated interaction among some or all firms in the market

2. Unilateral effects

- The merger eliminates competition between the merging firms without requiring any change in the behavior of other firms
- Merger of close competitors
 - The 1992 DOJ/FTC Horizontal Merger Guidelines were widely interpreted to require the merging parties to be each other's closest competitors and to have a combined share of at least 35%
 - These requirements were dropped in the 2010 revision

3. Elimination of a “maverick” firm

- The merger eliminates a disruptive competitor that disciplines prices or other terms of competition, even though the firm may have a relatively small market share
- This is a very ill-defined concept and may be entirely dependent on the business strategy of the current management
 - Has a “know it when you see it” quality

Explicit Theories of Anticompetitive Harm: 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 benefits²

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 prohibits explicit coordination by agreement on competitive variables that can 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 from the firms that are increasing their prices
 3. *“Accommodate” the price increase*: “Pull their competitive punches”
 - Need not match the price increase
- 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 tacit 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 required 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—
 - 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 likelihood, effectiveness, or stability of coordinated interaction
- 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 requires only a showing of an increased likelihood of successful coordinated interaction, not proof that coordinated interaction would in fact occur postmerger

2010 MG requirements

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 test¹
 - Other courts continue to use the *H&R Block* approach of:
 - Presuming coordinating effects when postmerger concentration is sufficiently high to trigger the *PNB* presumption, *and*
 - Shifting the burden (presumably of production) to the merging parties to rebut the presumption²
 - 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); *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 use the term "coordinated interaction" consistently
2. *Extension to nonprice dimensions*: Adopted the approach of the 2010 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 labor-market conditions such as wages and benefits¹
 - *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 likelihood, stability, or effectiveness of coordination in the relevant market?
 - The Guidelines identify three primary factors and five secondary factors relevant to that inquiry.

See the class notes for more detail on each of these factors

¹ 2023 Merger Guidelines § 2.3.

The 2023 refinements: “Primary factors”

■ Proving coordinated interaction

A. The “primary factors”:¹ Rebuttably presumptive of a material increase in the risk of coordinated interaction

1. *Highly concentrated market*: “Markets that are highly concentrated after a merger that significantly increases concentration (see Guideline 1) are presumptively susceptible to coordination”
 - Guideline 1 provides two thresholds: (1) postmerger HHI over 1800 and delta over 100, and (2) combined market share greater than 30% and a delta of greater than 100
 - WDC: Is there any economic evidence that finds that markets are susceptible to tacit coordination under these conditions?
 - Rebutting the structural presumption
 - “In the Agencies’ experience, structural conditions that prevent coordination are exceedingly rare in the modern economy.”²
 - The Agencies consider whether structural market barriers to coordination are “so much greater in the [relevant] industry than in other industries that they rebut the normal presumption” of coordinated effects³
 - NB: The Guidelines permit a finding of susceptibility in markets that do not meet these thresholds depending on “other risk factors” (that is, failing outside the thresholds is not a “safe harbor”)
2. *Prior actual or attempted coordination*
 - Case law looks to all actual or attempted coordination—lawful or unlawful
 - “[A] merger reducing the number of rivals may tend to make success more likely.”
3. *Elimination of a maverick* (see the next section of these slides)

¹ 2023 Merger Guidelines § 2.3.A. ² *Id.* § 2.3.B, at 10.

³ *Id.* § 2.3.A (citing *FTC v. H.J. Heinz Co.*, 246 F.3d 708, 724 (D.C. Cir. 2001)).

The 2023 refinements: “Secondary factors”

■ Proving coordinated interaction

B. The “secondary factors”:¹ Probative of a material increase in the risk of coordinated interaction

1. *Market concentration*: “Even in markets that are not highly concentrated, coordination becomes more likely as concentration increases”²
 - WDC: What is the evidence, especially in markets that do not satisfy the Guideline 1 thresholds?
2. *Market observability*: Coordination is more likely in markets where firms can easily monitor each other's actions, especially pricing and terms offered to customers
3. *Competitive responses*: When a firm's attempt to win business from rivals would likely trigger a swift, strong retaliatory response, the likelihood of coordinated interaction increases
4. *Aligned Incentives*: Coordinated interaction is more likely when firms in a market face similar incentives and constraints on their behavior
5. *Profitability or other advantages of coordination for rivals*: The potential for higher profits or other benefits from successful coordination makes it more likely that firms would coordinate

¹ 2023 Merger Guidelines § 2.3.B.

² *Id.*

The economic framework

■ 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.

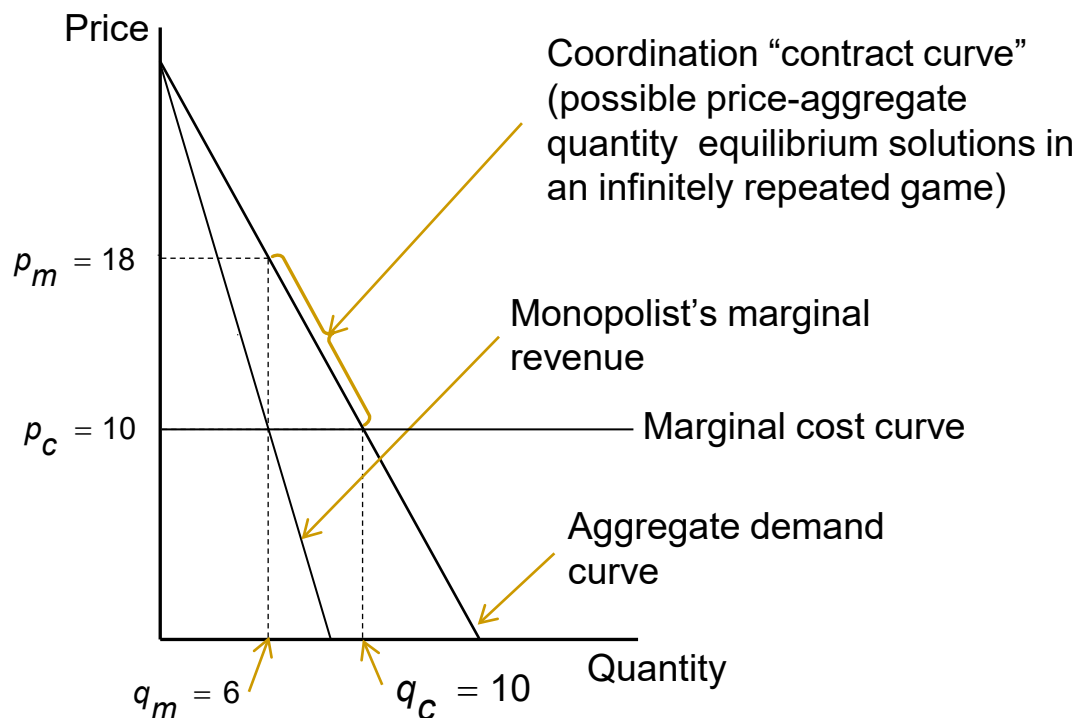
1. Susceptibility

- Oligopolistic coordination—and hence susceptibility—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/Incentive compatibility problem
 - Will the (short-run) incentive to pursue a more competitively aggressive strategy, which all profit-maximizing firms have, undermine any tacit coordination?
 3. External interference problem
 - Apart from the firms in the market, will other entities disrupt any tacit coordination?
 - Firms outside of the market that enter or threaten to enter the market
 - Buyers with the negotiating power to 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
 - b. The degree of firm and product heterogeneity
 - Goes to alignment of incentives
 - Significant heterogeneity may make reaching terms of coordination difficult due to different desired outcomes dictated by the individual conditions of each firm
 - Look for differences in product attributes, location, costs, or vertical integration
 - c. Prior actual or attempted collusion or coordination/willingness to coordinate
 - Indicates that firms in the market believe that coordination is possible

1B. Susceptibility: Internal stability

■ Incentive compatibility problem

- Inherent in oligopolistic coordination since each profit-maximizing firm has an 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 with the following payoff matrix:

If you want to more explanation of the prisoner’s dilemma game, look at BrainCraft, [The Prisoner’s Dilemma](#) (YouTube)

		Firm 2	
		“Cooperate”	Compete
Firm 1	“Cooperate”	45, 45	0, 50
	Compete	50, 0	25, 25

Annotations:

- Firms split monopoly profits of 90 (points to 45, 45)
- Competitive firm takes total competitive profits of 50 against firm charging monopoly price (points to 0, 50)
- Firms split competitive profits of 50 (points to 25, 25)

Key result: Charging the competitive price is the dominant strategy for each firm, regardless of the strategy the other firm chooses. But mutual monopoly strategies earn each firm higher profits.

1B. Susceptibility: Internal stability

- Two questions on internal stability—
 - 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

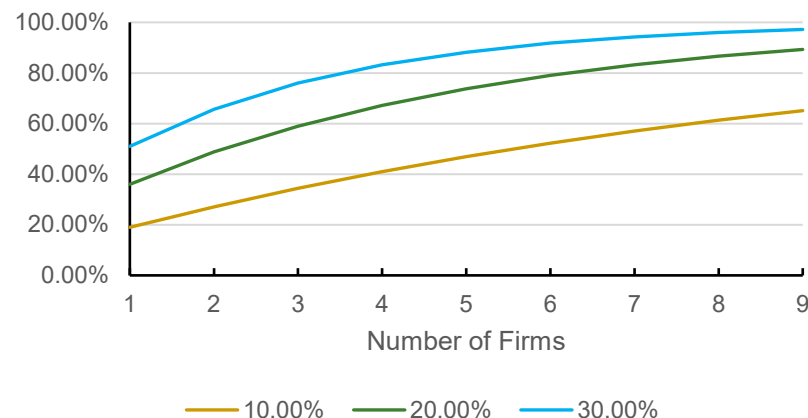
a. Probability of at least one defection

□ Heuristic illustration

- Say (quite unrealistically) that the probability of defection is p for each firm and independent of what the others do. Then the probability of at least one defection—
 - Increases with p , and
 - Increases with the number of firms n
- This factor underpins the emphasis on the number of realistic suppliers remaining in the market postmerger
 - Note the significant decrease in the probability of at least one defection as the number of firms decreases, starting, say, at five firms

Probability of at Least One Defection

		Individual defection probability p		
		10.0%	20.0%	30.0%
Number of firms n	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 to defect (not exhaustive)

1. The size of the reward relative to the market (for a given probability of detection)

- The larger the size of the reward relative to the size of the market, the larger the probability of defection
 - *Example:* As the number of sales opportunities become smaller, the probability of defection increases
 - Large, “lumpy” sales or long-term contracts can make defection more profitable
 - *Example:* As individual sales become smaller relative to the market, the probability of defection decreases
- 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

1B. Susceptibility: Internal stability

b. Factors affecting an individual firm's incentive to defect (not exhaustive)

2. The probability of detection (for a given size of reward)

- The greater the probability of detection, the lower the probability of defection
 - That is, the defecting firm will not be able to make as many sales before other companies respond
- Factors
 - The availability of key market information necessary to detect defections
 - E.g., market conditions, market prices, market volumes, transactions (seller, buyer, prices)
 - Lack of information may make defections from coordination harder to detect and therefore punish
 - Volatility of the market/predictability of demand
 - Volatility/unpredictability makes defections harder to detect

3. Lags in detection

- Significant lags make cheating more profitable (can successfully cheat for a longer time period)
- Factors
 - Same as for probability of detection

1B. Susceptibility: Internal stability

- b. Factors affecting an individual firm's incentive to defect (not exhaustive)
 - 4. Prior actual or attempted collusion or coordination/willingness to coordinate
 - Indicates that firms in the market believe that coordination is possible and at least worth the effort to try

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 market
 - iii. Customers with sufficient bargaining power to disrupt coordinated interaction
 - 2. External factors to consider
 - 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. 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
 - Low capacity utilization allows outside firms to significantly increase their production levels to service demand diverting from the collusive group
 - 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 selection 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 prima 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 2001²
 - 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 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*)

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 common cost decrease

WDC: The antitrust risk of coordinated interaction comes primarily from firms tacitly coordinating to maintain prices when common costs decrease rather than coordinating to increase prices from prevailing levels

Explicit Theories of Anticompetitive Harm: 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 coordinated interaction
 - Typically used to challenge deals where the target has a sufficiently small market share that the transaction would not otherwise raise major concerns

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 of pushing the 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 will 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 plays 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

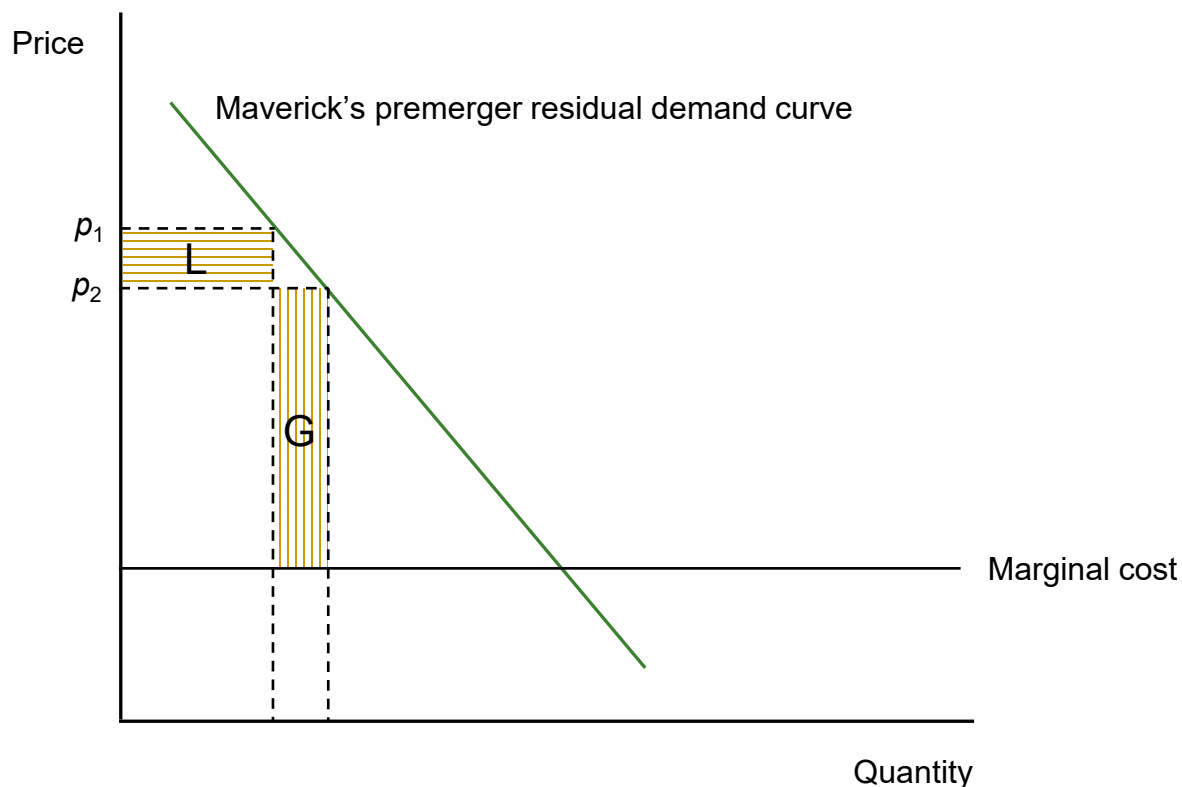
- Generally, a firm is less likely to price aggressively to increase its market share as its inframarginal sales become larger relative to its marginal sales
 - In a single-price market, a price cut to increase sales requires the firm to reduce prices on all inframarginal sales
- So a merger between 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).

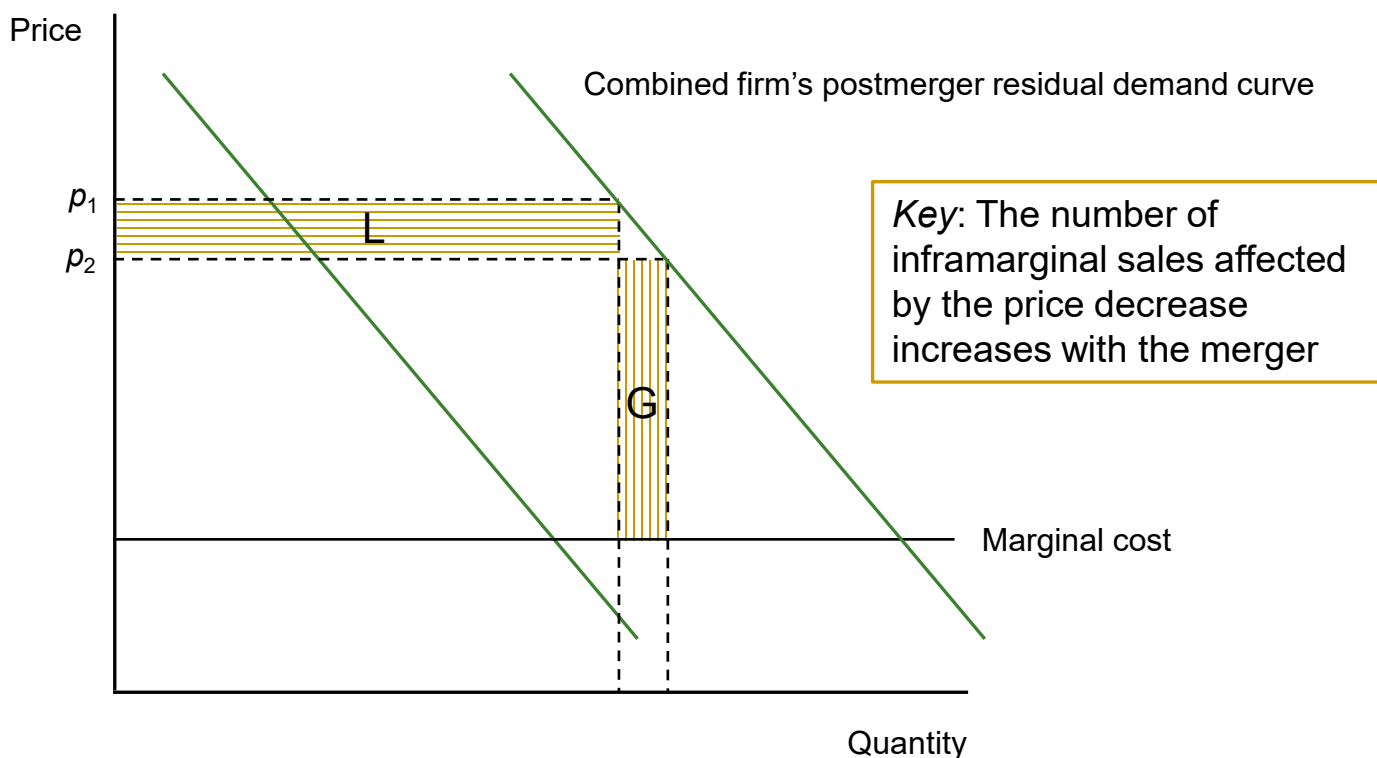
Mavericks: Postmerger incentives

- Premerger incentives to act aggressively
 - As illustrated in the diagram below, the “maverick” standing alone has an incentive 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

Explicit Theories of Anticompetitive Harm: 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

¹ United States v. H&R Block, Inc., 833 F. Supp. 2d 36, 81 (D.D.C. 2011).

Unilateral effects

■ Definition

- The idea is that the merged firm can increase prices to an identifiable subset of customers in the market even *without* any accommodating conduct from the nonmerging firms in the market and that this price increase is a cognizable anticompetitive effect under Section 7
 - In other words, an anticompetitive effect results if the merged 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
 - 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 actionable under Section 7 by multiple courts, although many have rejected the application of the theory for failure of proof ¹

¹ See, e.g., *ProMedica Health Sys., Inc. v. FTC*, 749 F.3d 559, 568-70 (6th Cir. 2014); *United States v. JetBlue Airways Corp.*, 712 F. Supp. 3d 109, 151-52 (D. Mass. 2024); *United States v. Bertelsmann SE & Co. KGaA*, 646 F. Supp. 3d 1, 38-42 (D.D.C. 2022); *FTC v. Peabody Energy Corp.*, 492 F. Supp. 3d 865, 903-04 (E.D. Mo. 2020); *New York v. Deutsche Telekom AG*, 439 F. Supp. 3d 179, 237 (S.D.N.Y. 2020); *FTC v. RAG-Stiftung*, 436 F. Supp. 3d 278, 318-21 (D.D.C. 2020); *United States v. Anthem, Inc.*, 236 F. Supp. 3d 171, 215-20 (D.D.C.), *aff'd*, 855 F.3d 345 (D.C. Cir. 2017); *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 61-65, 67-70 (D.D.C. 2015); *United States v. Bazaarvoice, Inc.*, No. 13-CV-00133-WHO, 2014 WL 203966, at *54 (N.D. Cal. Jan. 8, 2014); *H&R Block*, 833 F. Supp. at 81-88; *FTC v. CCC Holdings Inc.*, 605 F. Supp. 2d 26, 67-72 (D.D.C. 2009); *FTC v. Foster*, No. CIV 07-352 JBACT, 2007 WL 1793441, at *27-*31 (D.N.M. May 29, 2007); *United States v. Oracle Corp.*, 331 F. Supp. 2d 1098, 1113-23, 1166-73 (N.D. Cal. 2004).

Unilateral effects

As a matter of conventional, denote the combined firm's product subject to the price change as "product A"

■ Relation to the one-product SSNIP test

- The underlying economics of unilateral effect 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?

- The profitability of a price increase in one of the merged firm's product is the incremental profits are profitable, taking into account—
 1. The gain in incremental profits from the increased price of product A's inframarginal sales
 2. The loss in margin from the loss of marginal customers of product A, *and*
 3. The gain in incremental profits from the recapture of some of the lost marginal sales by product B
- ***A critical difference:*** In unilateral effects, ANY (material) price increase is actionable
 - There is no "safe harbor" for anticompetitive price increases under Section 7
 - Under Section 7's terms, the only requirement is that the merger is reasonably likely to "substantially" lessen competition
 - Hence, unilateral effects does not employ a SSNIP to test whether the profitability of a price increase of one of the products of the merging firm surpasses some threshold level
- ***Another difference:*** In unilateral effects, the profit-maximization test is the right implementation to investigate substantiality
 - But the probability test is still probative of an anticompetitive price increase

Unilateral effects

■ The profit-maximizing economics

□ Premerger:

$$\begin{array}{rcl}
 \text{A's marginal revenue} & & = \text{Marginal cost} \\
 \left[\begin{array}{c} \text{Gain in revenues} \\ \text{on the higher} \\ \text{margin on the} \\ \text{inframarginal sales} \end{array} \right] - \left[\begin{array}{c} \text{Loss in revenues} \\ \text{from the loss on} \\ \text{the marginal unit} \end{array} \right] & = & \left[\begin{array}{c} \text{Reduction in the} \\ \text{marginal cost of} \\ \text{production} \end{array} \right]
 \end{array}$$

At the margin, B's marginal sales divert to A if A lowers its price to sell one additional unit

□ Postmerger:

Holding B's price constant and booking all of B's losses to A

$$\begin{array}{rcl}
 \text{A's marginal revenue} & - & \text{Loss on B's diverted sales} = \text{Marginal cost} \\
 \left[\begin{array}{c} \text{Gain in revenues} \\ \text{on the higher} \\ \text{margin on the} \\ \text{inframarginal sales} \end{array} \right] - \left[\begin{array}{c} \text{Loss in revenues} \\ \text{from the loss on} \\ \text{the marginal unit} \end{array} \right] & - & D_{BA}m_B = \left[\begin{array}{c} \text{Reduction in the} \\ \text{marginal cost of} \\ \text{production} \end{array} \right]
 \end{array}$$

□ Holding the price of B constant, the combined firm's marginal revenue equals A's marginal revenue minus the loss on B's diverted sales

□ Since $mr = mc$ premerger, $mr - \text{loss on B's diverted sales} < mc$ at A's premerger price and quantity

- When the combined firm's marginal revenue postmerger is less than its marginal cost, the combined firm must reduce quantity and increase price to maximize profits

Unilateral effects

■ Example 1

- Say firm A faces a residual inverse demand curve $p = 10 - 0.5q$ and has no fixed cost and constant marginal cost of 4
 - The demand curve is then $q = 20 - 2p$
- Premerger, firm A maximizes its profits by choosing a quantity q^* such that its marginal revenue equals its marginal cost.
 - Solving—
 - $q^* = 6$
 - $p^* = \$7$
- Also, suppose that if firm A increases its price, 50% of its marginal customers divert to firm B (that is, $D_{AB} = 0.50$).

We solved this problem on
Slide 51 of the Unit 8 notes

*Premerger, firm A is indifferent to where its
marginal customers go when firm A changes its price.*

*That is, the profit gains or losses of other firms
do not change firm A's profit-maximizing choices*

Unilateral effects

■ Example 1 (con't)

- Firm A now acquires firm B as a subsidiary
 - Should the combined firm increase the price of product A to improve joint profits?
 - Parameters:
 - Units divert between A and B one-to-one (from problem)
 - So if A loses 2 units when it increases its price, B gains one unit in sales (since $D_{AB} = 0.50$)
 - Say B has a dollar gross margin of \$2
 - Suppose A increases its price from 7 (the premerger profit-maximizing price) to 7.5
 - Firm A loses 1 unit
 - $q = 20 - 2p$
 - At $p_1 = 7$, $q_1 = 20 - 2 \cdot 7 = 6$ and $m_1 = p_1 - c = 7 - 4 = 3$
 - At $p_2 = 7.5$, $q_2 = 20 - 2 \cdot 7.5 = 5$
 - $\Delta q = -1$
 - Firm A has a gross profit loss of \$3 (= the original \$3 margin at $p = 7$ times 1 unit)
 - Firm A sells 5 units at the higher price for a profit gain of \$2.50 (= 5 units times an incremental price of \$0.50)
 - Firm B gains 0.5 units from diversion for a profit gain of \$1 (= 0.5 units at a dollar margin of \$2)
 - Combined profits increase by \$0.50, so the combined firm should increase the price of A
 - NB: This is purely directional—the example says nothing about what is the profit-maximizing Δp

*Postmerger, the combined firm must take into account
the profit changes of firm B as well as firm A*

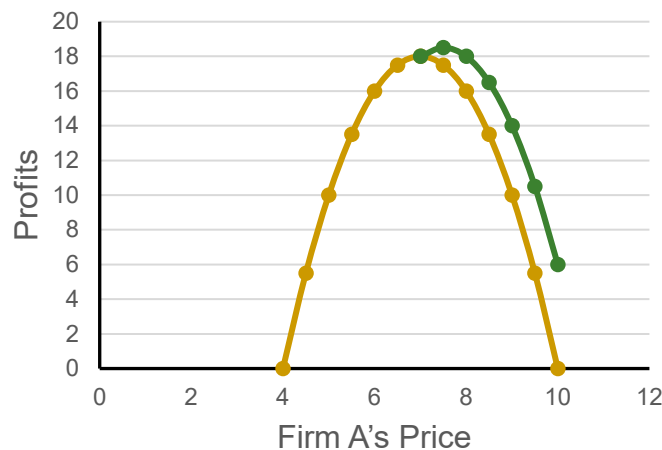
Unilateral effects

■ Example 1 (con't)

Premerger: Firm A

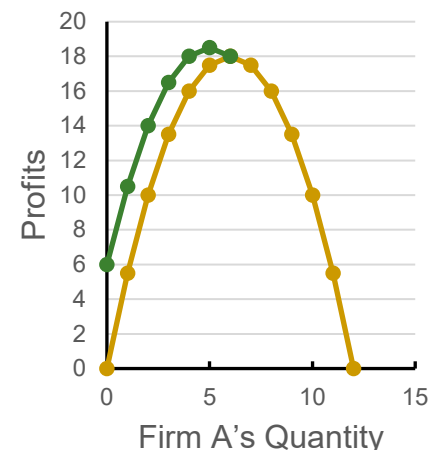
p	q	\$m	Profits
0.0	20.0	-4.0	-80.0
0.5	19.0	-3.5	-66.5
1.0	18.0	-3.0	-54.0
1.5	17.0	-2.5	-42.5
2.0	16.0	-2.0	-32.0
2.5	15.0	-1.5	-22.5
3.0	14.0	-1.0	-14.0
3.5	13.0	-0.5	-6.5
4.0	12.0	0.0	0.0
4.5	11.0	0.5	5.5
5.0	10.0	1.0	10.0
5.5	9.0	1.5	13.5
6.0	8.0	2.0	16.0
6.5	7.0	2.5	17.5
7.0	6.0	3.0	18.0
7.5	5.0	3.5	17.5
8.0	4.0	4.0	16.0
8.5	3.0	4.5	13.5
9.0	2.0	5.0	10.0
9.5	1.0	5.5	5.5
10.0	0.0	6.0	0.0

Profits



—●— Premerger: Firm A
—●— Postmerger: Firms A + B

Profits



—●— Premerger: Firm A
—●— Postmerger: Firms A + B

Postmerger: Firms A + B

(holding the price of B constant and looking at incremental changes in B from diversion)

Firm A: Postmerger					Firm B: Postmerger			Combined Profits
Δp	p	q	\$m1	Profits	$\Delta q2$	m	$\Delta \pi2$	
0.0	7.0	6.0	3.0	18.0	0.0	2	0.0000	18.0000
0.5	7.5	5.0	3.5	17.5	0.5	2	1.0000	18.5000
1.0	8.0	4.0	4.0	16.0	1.0	2	2.0000	18.0000
1.5	8.5	3.0	4.5	13.5	1.5	2	3.0000	16.5000
2.0	9.0	2.0	5.0	10.0	2.0	2	4.0000	14.0000
2.5	9.5	1.0	5.5	5.5	2.5	2	5.0000	10.5000
3.0	10.0	0.0	6.0	0.0	3.0	2	6.0000	6.0000

The acquisition of competitor firm B puts upward pricing pressure on the price of firm A

Unilateral effects

- What is going on here?
 - Firm A's increase in production requires it to decrease its price for all its sales since A cannot price discriminate—charge different prices—among its customers
 - Firm A's price reduction causes some of firm B's customers to divert to A
 - This is called a *negative externality* on B of A's price reduction
 - Alternatively, if A had increased its price, some of A's customers would divert to B, creating a *positive externality* on B
 - An *externality* is a cost or benefit caused by an economic actor that is not suffered or enjoyed by that actor
 - *Example (negative externality)*: A firm's pollution diminishes the property values or health of people in the surrounding area
 - *Example (positive externality)*: A firm's restoration of historic buildings encourages more people to visit the area and patronize nearby businesses
 - Network effects often result from positive externalities
 - *Example*: The more people who are connected to a telephone network, the more valuable the network becomes to all users
 - When an externality exists, the acting firm does not take into account all of the costs and benefits of its actions when making decisions
 - This results in decisions that are individually optimal but socially suboptimal

When A acquires B, A internalizes the externalities A's decisions impose on B

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: $mr = 300 - 2q$

$$\begin{aligned} \text{FOC: } mr &= mc \\ 300 - 2q &= 20 \\ \text{So: } q^* &= 140 \\ p^* &= 160 \\ \$m_A &= 140 \end{aligned}$$

- 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 ($D_{BA} = |-0.3/+1| = 0.3$)
- 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 ($\Delta\pi_B = D_{BA} \times \$m_B = (0.3)(140) = \$42$).

- 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:

$$\begin{aligned} mr_A^{\text{postmerger}} &= mr_A^{\text{premerger}} - D_{BA} \$m_B \\ &= 300 - 2q - 42 \end{aligned}$$

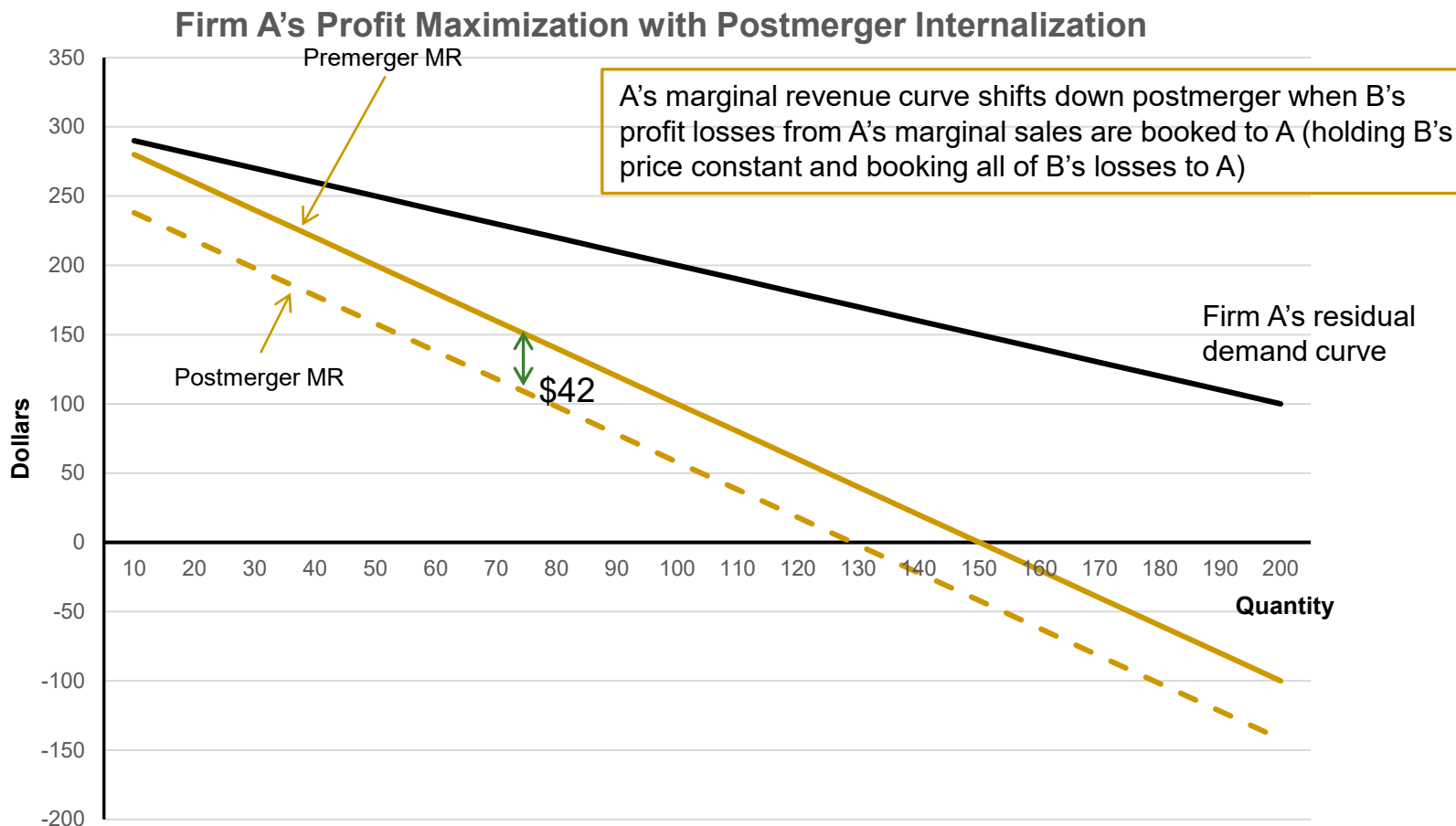
A's marginal negative externality imposed on B

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: $q_{\text{postmerger}} = 119$; $p_{\text{postmerger}} = 181$*

Unilateral effects

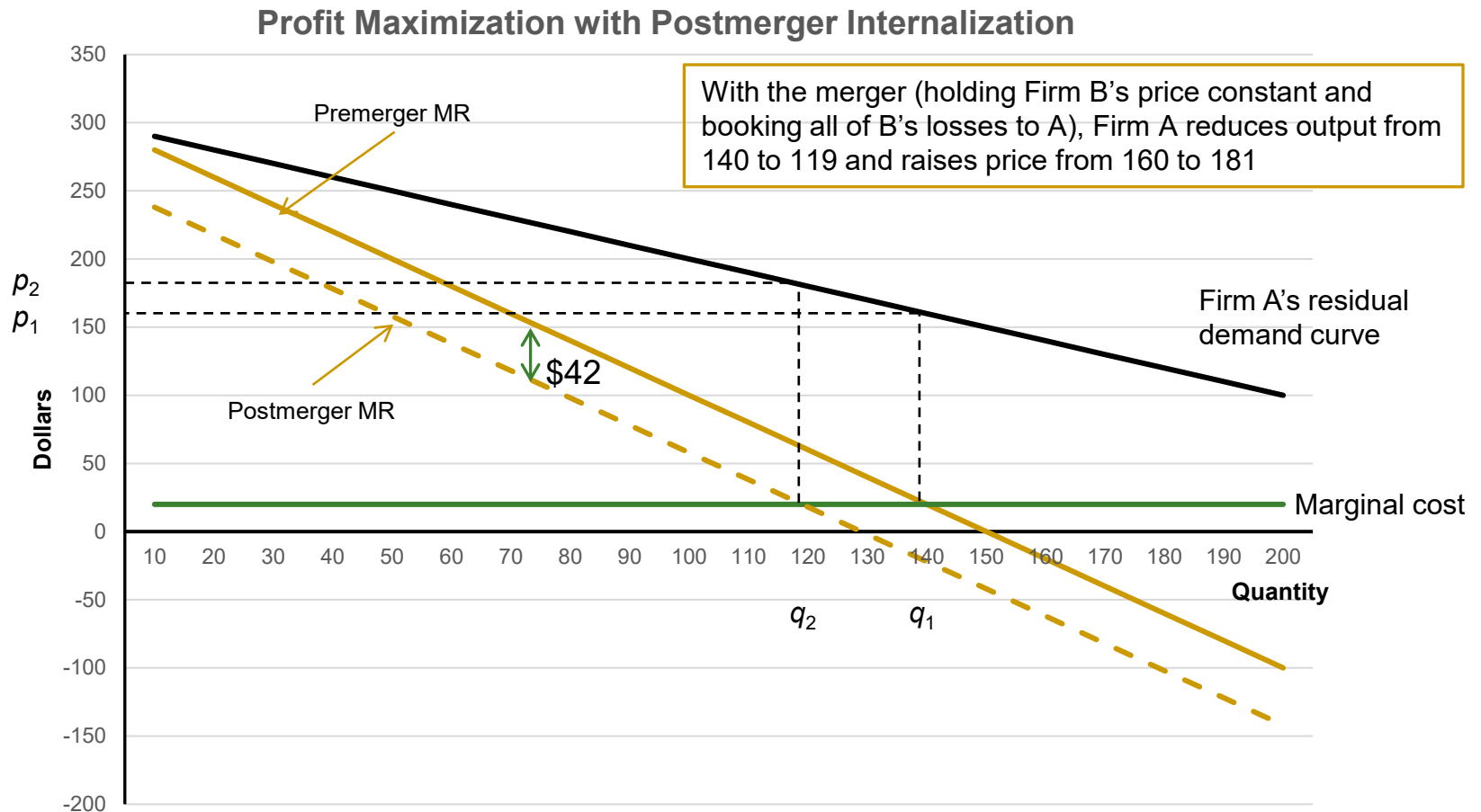
An easy way to visualize unilateral effects is to hold firm B's profits constant postmerger and book all of B's gains and losses from A's price changes to A.

■ Example 2 (con't)



Unilateral effects

■ Example 2 (con't)



Another example

■ Example 2 (another take)

Firm 1
(producing Product 1)
Assume linear demand ($p = \text{price intercept minus quantity}$)
Price intercept 300
Marginal cost 20 (constant)
Margin 140
(price minus marginal cost at premerger profit-maximizing price)

Recapture of Products from Diverted Sales to Firm 2

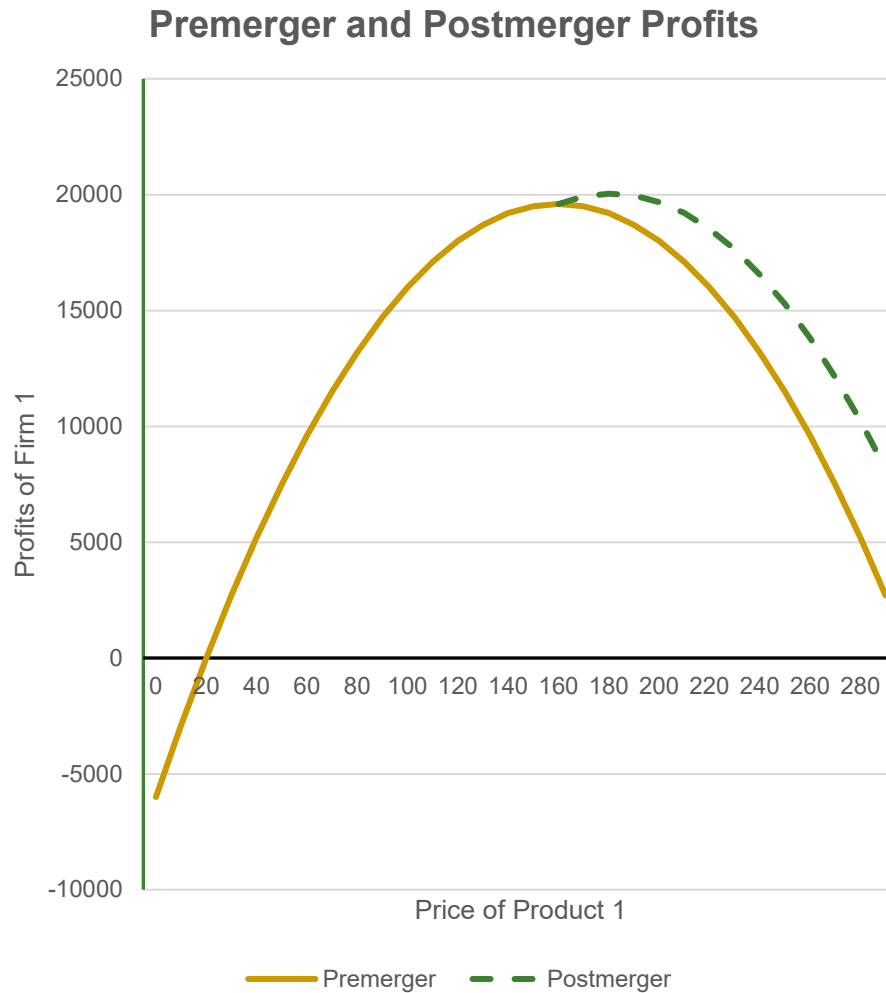
Diversion ratio 0.3
Firm 2 margin 140 (assume the same as Firm 1 at premerger price)

PREMERGER								
Price	Quantity	Revenue	MR	Cost	MC	Profit	Margin ($p - mc$)	
0	300	0	-300	6000	20	-6000	-20	
10	290	2900	-280	5800	20	-2900	-10	
20	280	5600	-260	5600	20	0	0	
30	270	8100	-240	5400	20	2700	10	
40	260	10400	-220	5200	20	5200	20	
50	250	12500	-200	5000	20	7500	30	
60	240	14400	-180	4800	20	9600	40	
70	230	16100	-160	4600	20	11500	50	
80	220	17600	-140	4400	20	13200	60	
90	210	18900	-120	4200	20	14700	70	
100	200	20000	-100	4000	20	16000	80	
110	190	20900	-80	3800	20	17100	90	
120	180	21600	-60	3600	20	18000	100	
130	170	22100	-40	3400	20	18700	110	
140	160	22400	-20	3200	20	19200	120	
150	150	22500	0	3000	20	19500	130	
160	140	22400	20	2800	20	19600	140	
170	130	22100	40	2600	20	19500	150	
180	120	21600	60	2400	20	19200	160	
190	110	20900	80	2200	20	18700	170	
200	100	20000	100	2000	20	18000	180	
210	90	18900	120	1800	20	17100	190	
220	80	17600	140	1600	20	16000	200	
230	70	16100	160	1400	20	14700	210	
240	60	14400	180	1200	20	13200	220	
250	50	12500	200	1000	20	11500	230	
260	40	10400	220	800	20	9600	240	
270	30	8100	240	600	20	7500	250	
280	20	5600	260	400	20	5200	260	
290	10	2900	280	200	20	2700	270	

POSTMERGER RECAPTURE (holding Firm 2's price constant at the premerger level)						
Firm 1 Lost units	Firm 1 Lost profits	Diversion to Firm 2	Profit Recapture	Post-merger Profit	Difference	
0	0	0	0	19600	0	
10	100	3	420	19920	320	
20	400	6	840	20040	440	
30	900	9	1260	19960	360	
40	1600	12	1680	19680	80	
50	2500	15	2100	19200	-400	
60	3600	18	2520	18520	-1080	
70	4900	21	2940	17640	-1960	
80	6400	24	3360	16560	-3040	
90	8100	27	3780	15280	-4320	
100	10000	30	4200	13800	-5800	
110	12100	33	4620	12120	-7480	
120	14400	36	5040	10240	-9360	
130	16900	39	5460	8160	-11440	

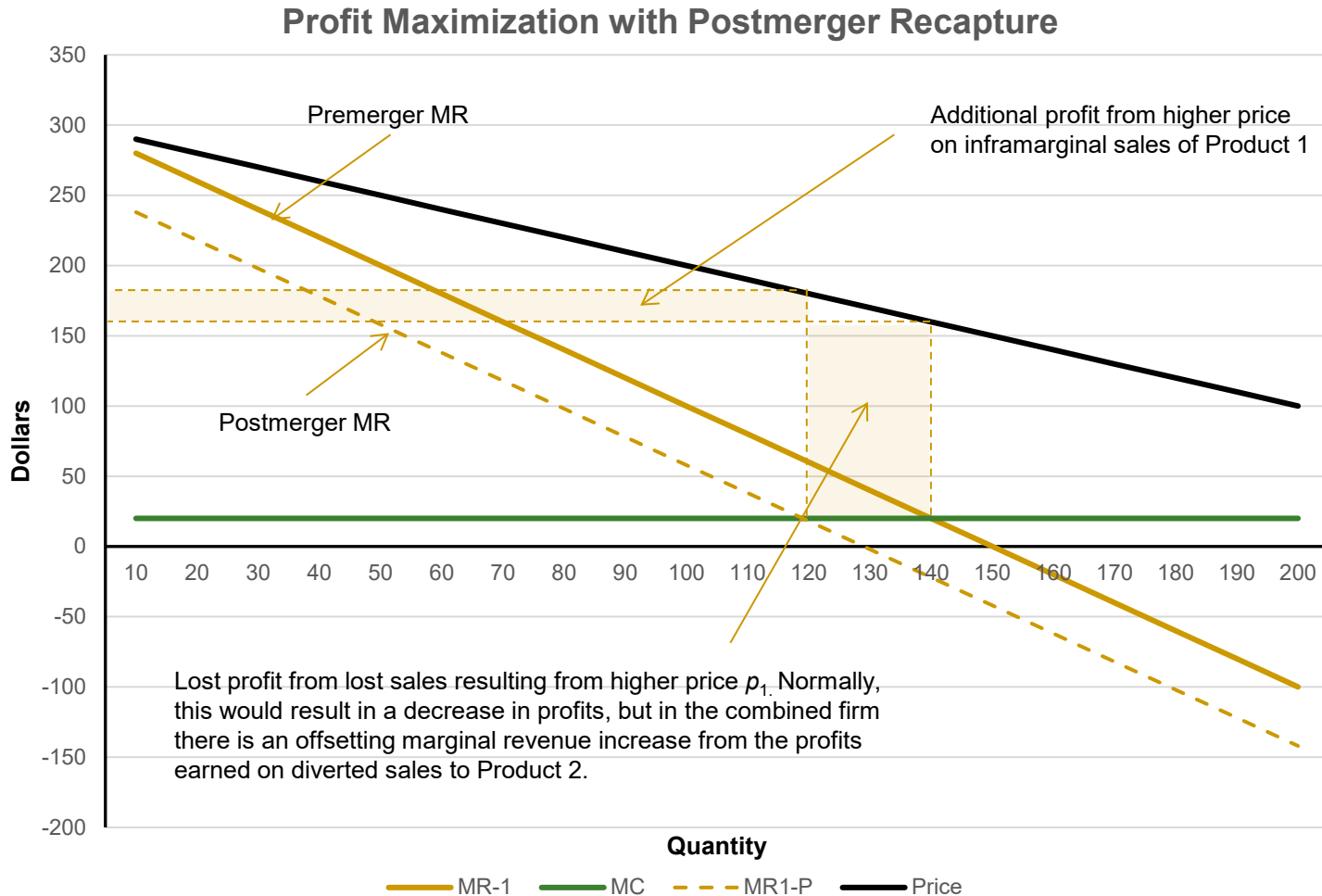
Another example

■ Example 2 (another take—con')



Another example

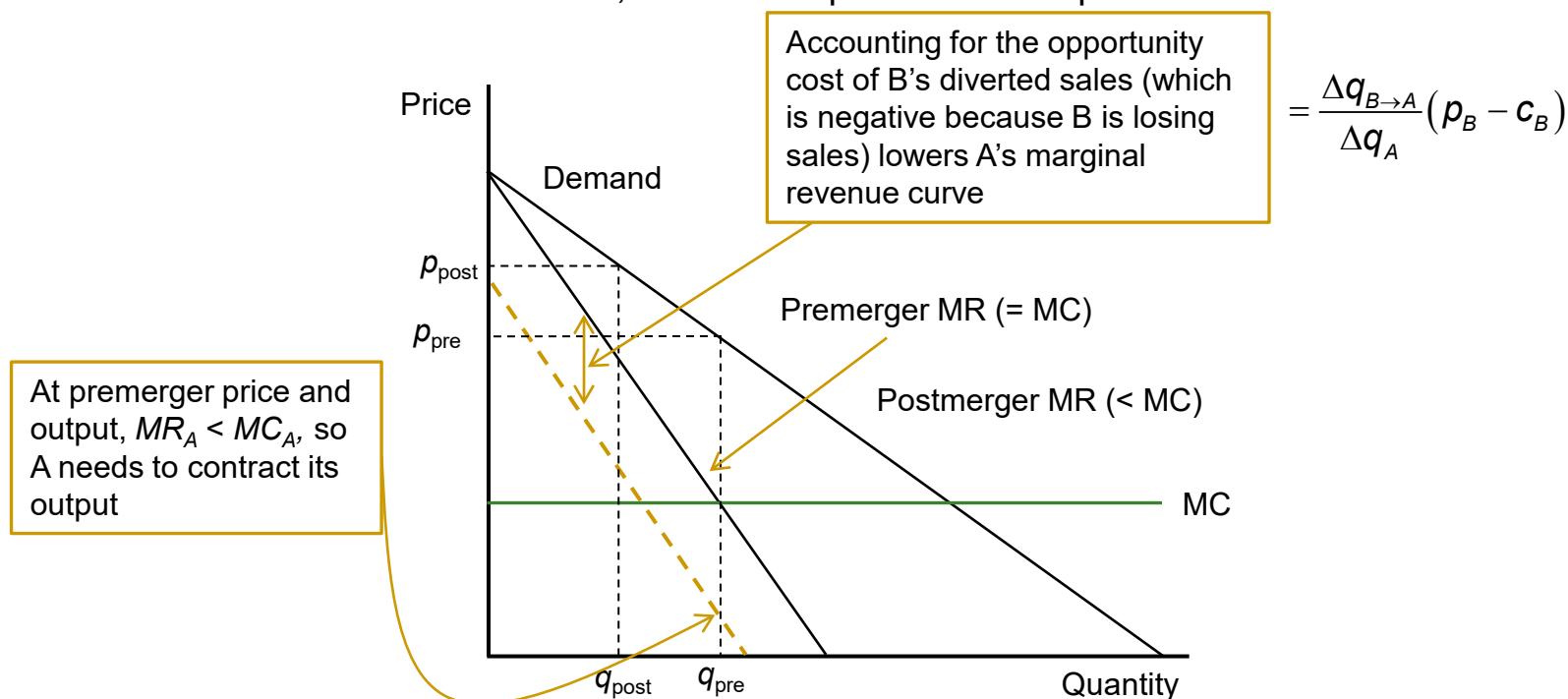
■ Example 2 (con't)



Unilateral effects

■ The basic idea

- The diagrammatic approach (when thinking about expanding Firm A's output)¹
 - Premerger: $MR_A = MC_A$
 - Postmerger: $MR_A + \text{opportunity cost from B's lost profits} < MC_A$ at A's premerger output and price because the opportunity cost is negative
 - Rule: When $MR < MC$, contract output to increase profits



¹ This allows us to use our usual profits-quantity diagram rather than a profits-price diagram.

Unilateral effects

OPTIONAL

■ The math

- Look at the merged firm's breakeven condition when we increase A's output by one unit and so decrease A's price (holding B's price constant and allocating all incremental profits and losses to A):

Sign of the term

$$p_A + \frac{\Delta p_A}{\Delta q_A} (q_A + \Delta q_A) + \underbrace{\Delta q_{B \rightarrow A} (p_B - c_B)}_{\text{A's marginal opportunity cost postmerger}} = c_A$$

A's marginal opportunity cost postmerger (i.e., B's lost sales diverted to A times their dollar gross margin when A increases production by one unit)

- Note that the opportunity cost for firm B is *negative* (because B is losing sales to A)
 - This means that at A's premerger levels of output and price, A's postmerger marginal revenue is *less* than its marginal cost
 - Consequently, to achieve marginal revenue = marginal cost, firm A must *decrease* output and increase price
 - This will also increase the merged firm's profits
 - Firm B's profit stays the same as premerger (due to firm A's payment of the "tax")
 - Firm A's profits increase even after it has paid the "tax" to Firm B
- Note also that the magnitude of the opportunity cost—and hence the amount that A must decrease output and increase price is directly related to:
 - The magnitude of the diversion of products from B to A ($\Delta q_{B \rightarrow A}$)
 - The magnitude of firm B's margin ($p_B - c_B$)

Unilateral effects

OPTIONAL

■ The math: Increasing firm A's price

- On the prior slide, we looked at the merged firm's breakeven condition when we increased firm A's output. Now look at the merged firm's breakeven condition when we increase A's price by an amount that decreases A's output by one unit (again holding B's price constant and allocating all profits and losses to A):

$$\overbrace{-p_A}^{\text{loss of revenue}} - \overbrace{\frac{\Delta p_A}{\Delta q_A}(q_A + \Delta q_A)}^{\text{increase in profits}} + \overbrace{\Delta q_{A \rightarrow B}(p_B - c_B)}^{\text{recapture of profits}} = \overbrace{-c_A}^{\text{marginal cost savings}}$$

Recapture of profits from Firm A's sales that are diverted to Firm B

■ Note that:

- The first term ($-p_A$) is the loss of revenue on the one lost marginal unit
 - The second term is the increase in profits from the margin increase on the inframarginal sales
 - The third term is the additional revenue recaptured by firm B from the diverted sales
 - The last term on the right is the marginal cost savings from the reduction in production by one unit
- Now multiply both sides by -1 (this preserves the breakeven condition):

$$p_A + \frac{\Delta p_A}{\Delta q_A}(q_A + \Delta q_A) - \Delta q_{A \rightarrow B}(p_B - c_B) = c_A$$

Multiplying by -1 in effect shifts the direction of the quantity change from negative to positive, and so this equation is similar to the one on the previous slide

- This means that at firm A's premerger levels of output and price, A's postmerger marginal revenue is *less* than its marginal cost
- Consequently, to achieve marginal revenue = marginal cost, firm A must decrease output and increase price

Unilateral effects

- Example 4: Nestlé-Dreyer's¹
 - Nestlé to acquire Dreyer's for \$2.4 billion
 - Both companies make regular and super-premium ice cream
 - Nestlé makes Häagen-Dazs
 - Dreyer's makes Dreamery, Godiva, and Starbucks
 - Unilever distributes Ben & Jerry's

¹ *In re* Nestlé Holdings, Inc., 136 F.T.C. 791 (2003) (settled by consent decree).

Unilateral effects

■ Example 4: Nestlé-Dreyer's¹

□ Two approaches

- *Unilateral effects as originally conceived*: Allege an all-ice cream market and apply unilateral effects theory to Nestlé and Dreyer's in their super-premium products
 - PNB presumption not triggered in this market
- *PNB approach*: Define a narrow, three-firm super-premium ice cream relevant market to invoke the *PNB* presumption

The consistent agency approach has been to narrow markets to increase the merging firms' market shares and invoke the *PNB* presumption

- The agency approach is consistent with the Merger Guidelines as long as the combined firm maximizes its prices by raising the price of at least one of the products by at least a SSNIP. If so, then the products of the two firms constitute a relevant market.
 - This market approach often can be expanded to include all of the firms making close substitutes.
 - The only situation where the plaintiff needs to use the unilateral effects theory as originally conceived is when the profit-maximizing price increase of the merged firm for any or all of its products is less than a SSNIP—and those situations are unlikely to attract the investigating agency's interest in the first instance

¹ *In re Nestlé Holdings, Inc.*, 136 F.T.C. 791 (2003) (settled by consent decree).

Unilateral effects

■ Example 4

- Nestlé-Dreyer's in the super-premium segment of an all-ice cream market

Super-Premium Ice Cream (1)			
	(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

Note: If super-premium ice cream is a relevant product market, the Nestlé-Dreyer's merger triggers the structural presumption under the Merger Guidelines. If super-premium ice cream is not a relevant market, the transaction does not trigger the Guidelines' concentration thresholds in an all-ice-cream market, although it could still be challenged using direct evidence of unilateral effects.

All Ice Cream (2)			
	(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 Dairy	\$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

¹ Complaint, *In re Nestlé Holdings, Inc.*, 136 F.T.C. 791 (2003) (settled by consent decree).

² 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: Requirements

- General requirements of the theory for a prima facie case
 1. The products of the merging firms must be differentiated and have different dollar margins (premerger, postmerger, or both)
 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 products¹
- *Special case: Merger to monopoly*
 - Usually the most anticompetitive of mergers
 - Sounds in unilateral effects because there is no other firm with which to tacitly coordinate
 - The general requirements do not have to apply

¹ NB: In the feedback memos and outlines for the graded homework assignment and final exams in prior year, you may see a fourth requirement: No entry, expansion, or repositioning by another firm in the relevant that would be sufficient to defeat the unilateral effect. Since this is not a requirement to make out a prima facie case nor is it the only defense to a claim of unilateral effects, I have dropped it as a requirement.

Unilateral effects: Requirements

■ Specific Guidelines requirements

□ 1992: Widely interpreted to require—

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 would apply 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

Unilateral effects: Requirements

- Specific Guidelines requirements (con't)

- 2023 Merger Guidelines

- The 2023 Merger Guidelines provide:

A merger eliminates competition between the merging firms by bringing them under joint control. If evidence demonstrates substantial competition between the merging parties prior to the merger, that ordinarily suggests that the merger may substantially lessen competition.¹

- Further, the 2023 Guidelines explain:

Competition often involves firms trying to win business by offering lower prices, new or better products and services, more attractive features, higher wages, improved benefits, or better terms relating to various additional dimensions of competition. This can include competition to research and develop products or services, and the elimination of such competition may result in harm even if such products or services are not yet commercially available. The more the merging parties have shaped one another's behavior, or have affected one another's sales, profits, valuation, or other drivers of behavior, the more significant the competition between them.²

¹ 2023 Merger Guidelines § 2.2 (on Guideline 2).

² *Id.*

Unilateral effects: Requirements

■ Specific Guidelines requirements (con't)

□ 2023 Merger Guidelines (con't)

■ Key Guidelines considerations in assessing competition between merging firms¹—

1. Monitoring and strategic decisions

- Look to the extent to which the merging firms' monitor each other's pricing, marketing campaigns, facility locations, improvements, products, capacity, output, input costs, and/or innovation plans
- Look to the extent one merging firm reacts to, or anticipates the reaction of, the other merging firm in making strategic decisions

2. Natural experiments

- Look to how one merging firm has reacted historically to the other merging firm's entry, expansion, or exit events
- For example, does one merging firm's prices drop substantially when the other merging firm enters the market?

3. Customer substitution

- Look to the extent customers are willing to switch between the products of the merging firms in the wake of a small change in price or other terms (for example, through diversion ratios)

4. Impact of competitive actions

- Look to how one merging firm's actions to attract customers affects the other merging firm

5. Impact of eliminating competition between the firms

- Look to evidence on how the combined firm may operate postmerger (for example, through merger planning documents)

6. Additional evidence, tools, and metrics

¹ 2023 Merger Guidelines § 2.2 (on unilateral effects) that might be probative

Unilateral effects: Requirements

■ Specific Guidelines requirements (con't)

□ 2023 Merger Guidelines (con't)

■ Some questions

1. Do the 2023 Merger Guidelines seek to make the elimination of significant competition between the merging firms in itself a cognizable anticompetitive harm under Section 7?
 - The 2023 Merger Guidelines do not use the term “unilateral effects”—This is undoubtedly deliberate
 - Conventionally, unilateral effects depend on the elimination of local competition between the merging firms having an adverse effect on consumers (following the consumer welfare standard)
 - The 2023 Merger Guidelines can be read—and may have been intended—to make the elimination of significant competition between the merging firms a cognizable anticompetitive harm in itself, even when there is no adverse effect on consumers because of the close substitutability of the products of other firms in the market
 - This would create a conclusive presumption of anticompetitive harm whenever the merging firms were close competitors with one another
2. Alternatively, do the 2023 Merger Guidelines seek to create a rebuttable presumption of Section 7 harm?
 - The use in the Guidelines of the word “ordinarily” indicates that there are exceptions
 - The Guidelines could be read to create a rebuttable presumption of Section 7 anticompetitive effect for the purpose of Step 1 of *Baker Hughes* whenever the merging firms are close competitors with one another
 - And leave it to the merging firms in Step 2 of *Baker Hughes* to adduce evidence showing the close substitutability of the products of other, nonmerging firms to put the presumption in issue
 - And then shift to the plaintiffs in Step 3 the burden of persuasion of proving that the merger has an anticompetitive unilateral effect as conventionally understood

Other thoughts on evidence

1. Shared unique product attributes

- ❑ Must be such as to create a high cross-elasticity of demand/diversion ratios between the products of the merging firms and significantly lower cross-elasticity of demand/diversion ratios with other products in the broader market
 - *Example:* Super-premium ice cream¹
- ❑ “Product attributes” should be broadly defined to include ancillary services
 - *Example:* Sales of office supplies to very large volume customers (including customized IT services and special commitments for rapid delivery)²

2. Uniquely observed head-to-head competition

- ❑ Merging firms disproportionately compete head-to-head for customers compared to other firms in the broader market, with little prospect for replacement competition postmerger
 - *Example:* Staples and Office Depot consistently competed with each other—but few other office supply firms—in the sale of office supplies to large B2B customers, and customers testified (with supporting reasons) that no other supplier could replace this competition after the merger³

¹ *In re Nestlé Holdings, Inc.*, 136 F.T.C. 791 (2003).

² *FTC v. Staples, Inc.*, No. CV 15-2115 (EGS), 2016 WL 2899222 (D.D.C. May 17, 2016).

³ *Id.*

Unilateral effects and market definition

- If a merger creates a unilateral price effect of at least a SSNIP, the hypothetical monopolist test will—
 - define narrow markets around the merging parties, *and thereby*
 - create corresponding high market shares and HHIs

If the merger allows the merged firm profitably to increase the price of one merging product by at least a SSNIP, a candidate market consisting of the merging firms' products satisfies the hypothetical monopolist test. The candidate market may then be expanded as necessary to reflect commercial realities.

- **Consequence:** When the unilateral effect supports a profitable SSNIP—
 1. The relevant markets will be smaller, and
 2. The *PNB* presumption will be stronger (higher HHIs)

Compensating 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:

$$\cancel{mr_A^{premerger}} - D_{AB} \$m_B = \cancel{mc_A} - e \times mc_A$$

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

Compensating 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

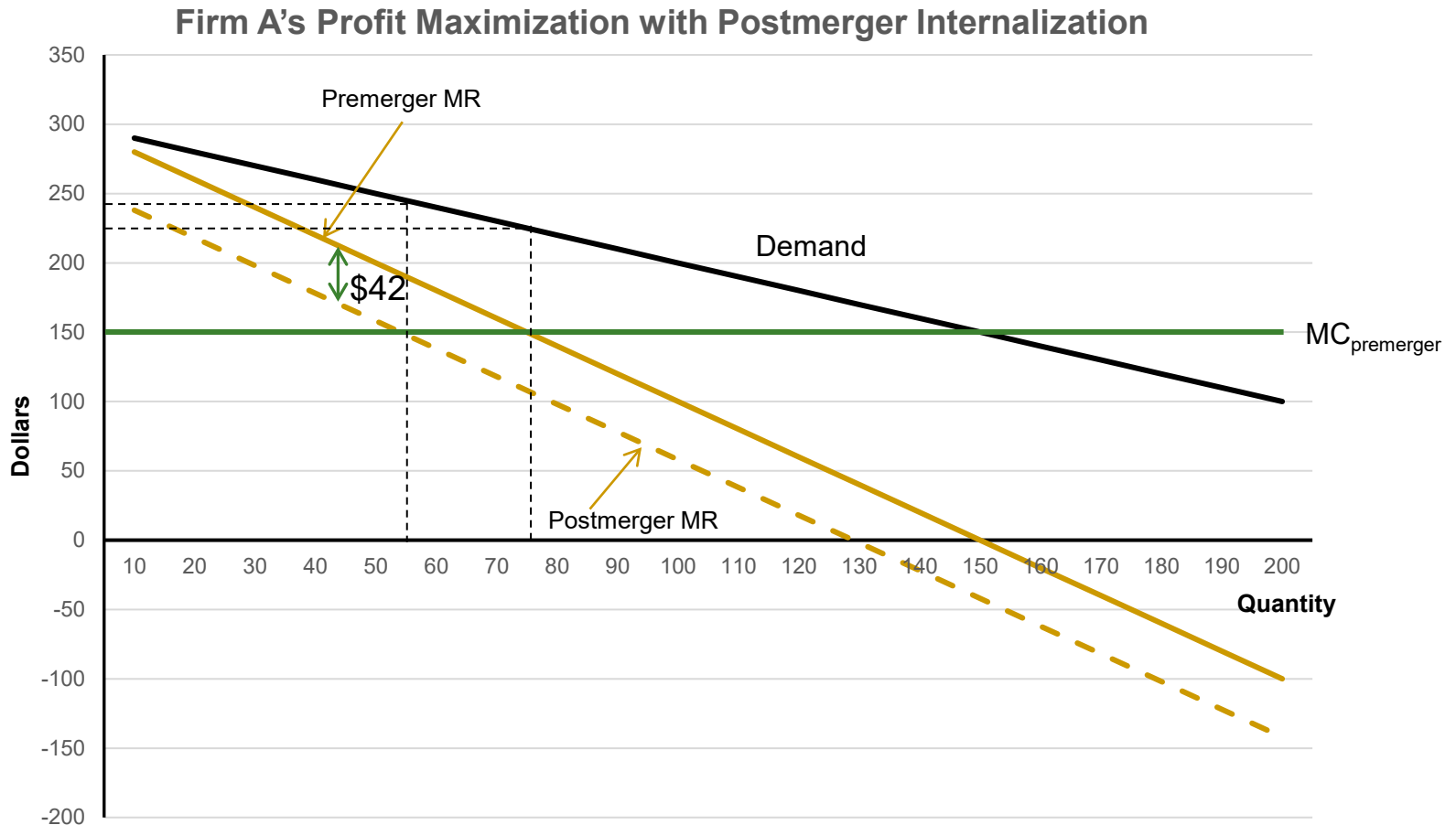
- Multiplying both sides by Δq_A :

$$\Delta q_A D_{AB} \$m_B = \Delta q_B \$m_B \leq \Delta q_A (e \times mc_A)$$

In other words, the total efficiency cost savings must be large enough to pay for the total subsidy to B

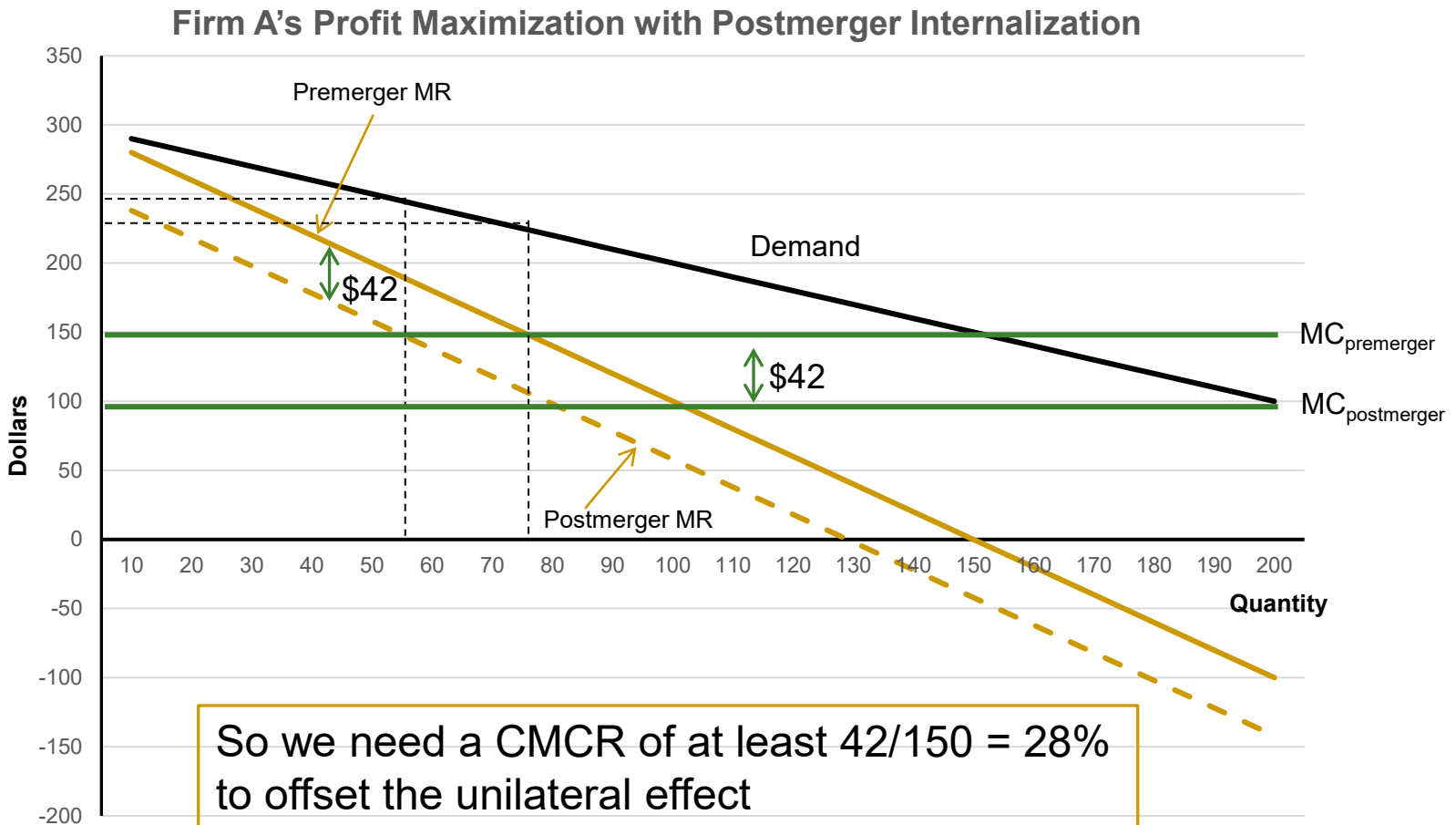
Compensating marginal cost efficiencies

- Graphically: Postmerger without compensating marginal cost reduction



Compensating marginal cost efficiencies

- Graphically: Postmerger with compensating marginal cost reduction



Compensating 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).

Merger Simulation

Unilateral effects and diversion ratios

■ Predicting price increases

- As noted earlier, the loss of units $\Delta q_{B \rightarrow A}$ from Firm B to Firm A when Firm A increases its output (and lowers its price) is a critical component of the merged firm's opportunity cost
- Likewise, the recapture of units $\Delta q_{A \rightarrow B}$ (and profits) by Firm B when Firm A increases its price (and contracts its output) is a critical component of the merged firm's recapture of profits
- Diversion ratios can be used in some models to predict (“simulate”) the profit-maximizing price increase in the wake of a merger of two firms producing substitutes
 - This can permit a quantification of the upward pricing pressure under a theory of unilateral effects

■ Refresher: Diversion ratios

- Definition (when firm A raises its price):

$$D_{A \rightarrow B} \equiv D_{AB} \equiv \frac{\frac{\Delta q_B}{\Delta p_A}}{\frac{\Delta q_A}{\Delta p_A}} = \frac{\Delta q_B}{\Delta q_A},$$

This is the *diversion ratio* from A to B. It is the percentage of the total units that Firm A loses when it raises price that go to Firm B.

where firm A loses total units of Δq_A , of which Δq_B go to Firm B

“Merger simulation”

■ The basic idea

- Traditional merger simulation attempts to predict the postmerger equilibrium prices produced by a specified model of demand and competitive behavior
- The usual structure of merger simulation models
 1. A theoretical model that derives market equilibrium from demand and cost characteristics
 2. The estimation of the demand characteristics (own- and cross elasticities, diversion ratios)
 - Ideally, estimated econometrically using a rich set of data (e.g., Nielsen scanner data in retail deals)
 3. The estimation of the premerger cost characteristics (marginal costs, margins)
 - For example, one approach is to assume a model of pricing (often Bertrand) and to use it jointly with the estimated demand parameters to recover implied marginal costs
 - Marginal cost can be approximated from accounting data, but these estimates tend to be unreliable
 4. The estimated demand parameters and costs are used jointly to simulate the new equilibria that would result from a merger
- Models and data requirements
 - More structure (restrictions) on the model can significantly reduce the data requirements
 - *Examples of model restrictions:* Linear demand curves, identical firms, identical diversion ratios, identical margins
 - Of course, the more structure on the model, the less the model is likely to accurately predict actual market responses

“Merger simulation”

■ The basic idea

□ Use by courts

- Courts have accepted merger simulation models advanced by economic experts as potentially probative (although not dispositive) of the price implications of mergers
 - *FTC v. Wilh. Wilhelmsen Holding ASA*, 341 F. Supp. 3d 27, 64-65 (D.D.C. 2018)
 - *FTC v. Advocate Health Care*, No. 15 C 11473, 2017 WL 1022015, at *11 (N.D. Ill. Mar. 16, 2017)
 - *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 46-47 (D.D.C. 2017)
 - *United States v. Anthem, Inc.*, 236 F. Supp. 3d 171, 212 (D.D.C. 2017)
 - *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 66 (D.D.C. 2015)
 - *United States v. H&R Block, Inc.*, 833 F. Supp. 2d 36, 64 (D.D.C. 2011)
 - *FTC v. Foster*, No. CIV 07-352 JB/ACT, 2007 WL 1793441, at *42 (D.N.M. May 29, 2007)
 - *United States v. Oracle Corp.*, 331 F. Supp. 2d 1098, 1122 (N.D. Cal. 2004)
- Because these models go directly to the potential anticompetitive effect of a merger, they are usually highly contested in court
 - Also, typically subject to *Daubert* challenges for faulty application (and not unreliability of the method generally)

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
 - Example: H&R Block/TaxACT
 - TaxACT 83%
 - HRB 37%
 - TurboTax 11%
 - 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
 - 2023 Merger Guidelines
 - The agencies use merger-simulation models “to give an indication of the scale and importance of competition, not to precisely predict outcomes.”
 - The Guidelines emphasize that a simulation may consider only selected aspects of the competition eliminated by the merger.

Overall, courts have been very reluctant to give much weight to merger simulations

Gross Upward Pricing Pressure Index (GUPPI)

- A new use of familiar concepts
 - Unilateral effects
 - A merger between differentiated product competitors causes the merged firm to recapture some sales lost when it raises the price of one merging product.
 - The profit earned on those recaptured sales reduces the opportunity cost to the merged firm of raising that product's price
 - The merger therefore creates an incentive to raise price
 - The same diversion-and-margin relationship appeared in the one-product SSNIP recapture test:
 - Diversion to another product owned by the hypothetical monopolist makes the SSNIP more profitable
 - The profitability of recapture depends on both the diversion ratio and the margin earned on the product receiving the diverted sales

Gross Upward Pricing Pressure Index (GUPPI)

- A GUPPI turns the one-product SSNIP recapture test around:
 - The SSNIP test begins with a specified price increase and asks whether the profit on recaptured sales makes that price increase profitable
 - The GUPPI begins with the diversion ratio and margin and calculates the percentage price increase at which the profit on recaptured sales exactly offsets the profit lost on Product 1
 - The resulting percentage is the GUPPI for Product 1—the breakeven percentage price increase and a measure of the gross upward pricing pressure created by the merger

Under the assumptions ordinarily used in this course—linear demand, constant marginal cost, and all other prices held constant—the profit-maximizing percentage price increase is halfway to the breakeven percentage price increase: $GUPPI/2$

GUPPIs

■ Gross Upward Pricing Pressure Index (GUPPI)

□ Definition:

$$GUPPI_1 = D_{12} m_2 \frac{p_2}{p_1}$$

where $GUPPI_1$ is the GUPPI for Product 1 in a merger with Product 2, D_{12} is the diversion ratio from product 1 to product 2, m_2 is the percentage margin of product 2, and p_1 and p_2 are the premerger prices of products 1 and 2, respectively

■ Using GUPPIs in antitrust merger analysis

□ A GUPPI measures the gross incentive created by the merger to increase the price of a merging product; it does not by itself predict the postmerger price increase

- Under linear demand, constant marginal cost, and with all other prices held constant, the predicted profit-maximizing percentage price increase for Product 1 is $GUPPI_1/2$.
- GUPPIs are also commonly used to screen retail mergers for stores or local areas requiring further analysis

■ Merger Guidelines

- Section 6.1 of the 2010 Horizontal Merger Guidelines used the value of diverted sales to assess unilateral pricing incentives and included numerical examples
- Section 4.2.B of the 2023 Merger Guidelines retains this diverted-sales-value analysis but omits the term “GUPPI” and the numerical examples

GUPPIs

■ Some observations

- GUPPIs are a cardinal measure of *upward pricing pressure*: a GUPPI quantifies the merger-created opportunity cost of selling the specified product, expressed as a percentage of that product's price. It is not, standing alone, a prediction of the postmerger price increase
 - A GUPPI of 10% is twice a GUPPI of 5% as a measure of this opportunity cost, but it does not necessarily imply a price increase twice as large because the profit-maximizing price response also depends on the shape of the demand curve and the responses of other prices
- GUPPIs are a *unilateral measure* of upward pricing pressure since they assume that firms inside and outside of the relevant market do not change their behavior in the wake of the merger (that is, no accommodating conduct)
- GUPPIs are a *gross measure* of upward pricing pressure since they ignore any incentives from the merger that might keep prices constant or reduce them, such as efficiencies, buyer power, or new entry or expansion by other firms
- GUPPIs are an *ordinal measure* of upward pricing pressure, ranking mergers so that a larger GUPPI indicates a stronger incentive to raise prices, but without specifying the quantitative difference
 - For example, without more structure on the demand curves, a merger with a GUPPI of 10% does not mean that the merged firm has an incentive to increase its prices by twice the percentage of a merger with a GUPPI of 5%

GUPPIs

- GUPPIs: Relation to one-product SSNIP critical recapture ratios
 - Consider the critical recapture ratio for product 1 in a candidate market consisting only of products 1 and 2, which are sold by the two merging firms:

$$R_{Critical}^1 = \frac{\$SSNIP_1}{\$m_{RAve}} = \frac{\$SSNIP_1}{\$m_2} = \frac{\delta_1 p_1}{m_2 p_2},$$

where $\$M_{RAve} = \m_2 because product 2 is the only recapturing product in the candidate market

- Recall that $R_{Critical}^1$ is the aggregate recapture ratio at which the hypothetical monopolist earns the same profit after a δ_1 -percent increase in the price of product 1 as it earned before the price increase
 - If $R_1 > R_{Critical}^1$, the hypothetical monopolist earns more profit after the price increase
 - If $R_1 < R_{Critical}^1$, the hypothetical monopolist earns less profit after the price increase

GUPPIs

- GUPPIs: Relation to one-product SSNIP critical recapture ratios (con't)
 - Under linear demand and constant marginal cost, and with all other prices held constant, solve the critical recapture ratio equation for δ_1 :

$$\delta_1 = R_{Critical}^1 m_2 \frac{p_2}{p_1}$$

This says that when the recapture ratio equals $R_{Critical}^1$, δ_1 is the percentage increase in the price of product 1 at which the hypothetical monopolist earns the same profit as it earned before the price increase

- Let's replace $R_{Critical}^1$ with the actual recapture rate R_1 , which is equal to D_{12} , and reinterpret δ_1 :

$$\delta_1 = D_{12} m_2 \frac{p_2}{p_1}$$

- When the actual recapture rate is $R_1 = D_{12}$, δ_1 is the percentage price increase at which the merged firm earns the same profit it would earn if it kept both products at their premerger prices:

$$\delta_1 \text{ is } GUPPI_1$$

Under these assumptions, $GUPPI_1$ is the merged firm's breakeven unilateral price increase for Product 1, given the actual rate at which Product 2 recaptures sales diverted from Product 1

GUPPIs and merger simulation

- GUPPIs when the merged firm's residual demand curve is linear in product 1
 - We know that when a firm's residual demand curve is linear, marginal cost is constant, and δ_1 is the breakeven percentage SSNIP, then $\delta_1/2$ is the firm's unilateral profit-maximizing percentage price increase

- *Key result 1:* If residual demand for Product 1 is linear and marginal cost is constant, then:

$$\frac{GUPPI_1}{2} = \frac{D_{12} m_2}{2} \frac{p_2}{p_1}$$

is the merged firm's profit-maximizing percentage price increase for Product 1, given the actual rate at which Product 2 recaptures sales diverted from Product 1, while holding Product 2's price and all other prices constant

- *Important:*
 - The $GUPPI_1//2$ calculation holds Product 2's price constant, but the merged firm will choose the prices of both products
 - If the merged firm raises Product 2's price, some sales will divert to Product 1. That additional demand generally makes a further increase in Product 1's price profitable
 - Consequently, in the linear-demand model, the predicted price increase for Product 1 when both prices adjust is greater than $GUPPI_1//2$. A merger simulation incorporates this interaction between the two prices; the $GUPPI_1//2$ calculation does not.

GUPPIs and merger simulation

- Using $GUPPI/2$ to estimate a lower bound to the percentage price increase
 - The $GUPPI_1/2$ estimate assumes linear residual demand, constant marginal cost, and all other prices held constant
 - With nonlinear demand, the pass-through of the merger-created opportunity cost depends on the curvature of the inverse demand curve:
 - Convex inverse demand implies pass-through greater than one-half
 - Concave inverse demand implies pass-through less than one-half
 - Accordingly, $GUPPI_1/2$ may understate or overstate the one-product profit-maximizing price increase. It is not a general lower bound.
 - The complete equilibrium price effect also depends on feedback from changes in other prices and on efficiencies, entry, expansion, repositioning, and other supply responses

*Bottom line: Outside the assumptions of linear demand, constant marginal cost, and all other prices held constant, $GUPPI_1/2$ does not by itself predict the unilateral profit-maximizing percentage price increase of Product 1. GUPPI continues to measure the merger-created pricing pressure, but translating that pressure into a predicted price increase requires additional information about demand and competitive responses.**

—> ** But since we assume linear demand, constant marginal cost in this course, you may use $GGUPI/2$ as an estimate of the unilateral profit-maximizing percentage price increase of Product 1 in exam problems.*

Unilateral effects merger simulation

■ GUPPI/2: One-product price-increase example

- Say firms 1 and 2 are merging in a differentiated products market have the following properties:

	Price (p)	%Margin (m)	Margin (\$m)	Recapture ratio t (R)
Product 1	\$1.20	50.0%	\$0.60	30.0% by Product 2
Product 2	\$1.00	60.0%	\$0.60	40.0% by Product 1

- Apply the break-even formula for a one-product price increase:

$$GUPPI_i = R_i m_j \frac{p_j}{p_i},$$

- This yields:

product <i>i</i>	$GUPPI_i$	$GUPPI_i/2$
Product 1	15.00%	7.50%
Product 2	24.00%	12.00%

- Under linear demand and constant marginal cost, and holding all other prices constant, the one-product profit-maximizing price increases are estimated to be 7.5% for Product 1 and 12.0% for Product 2
 - These are not full equilibrium predictions because they do not account for the interaction between the two products' price increases.

GUPPIs

- GUPPI as a ratio of recaptured profit to lost revenue
 - Sometimes you see GUPPIs defined the following way:

$$\begin{aligned} GUPPI_1 &= \frac{\text{gross profit on Product 2 sales recaptured from Product 1}}{\text{revenue associated with all sales lost by product 1}} \\ &= \frac{\Delta q_2 (p_2 - c_2)}{\Delta q_1 p_1} \\ &= \frac{\Delta q_2 (p_2 - c_2)}{\Delta q_1 p_2} \frac{p_2}{p_1} \\ &= D_{12} m_2 \frac{p_2}{p_1} \end{aligned}$$

- This expression highlights GUPPI's economic meaning: it measures the gross profit gained on Product 2 for each dollar of Product 1 revenue lost

GUPPIs

■ A simple symmetric two-product merger simulation

- *Model 2:* Assumes *each merging firm* faces a linear residual demand curve
 - Assume linear demand and constant marginal cost, equal diversion ratios ($D_{AB} = D_{BA} = D$), equal prices and percentage margins, Bertrand price competition, no change in any nonmerging product's price, no efficiencies, and no entry, expansion, or repositioning
 - Under these assumptions, $GUPPI_A = GUPPI_B = GUPPI = Dm$
- If Product B's price remains at its premerger level, the profit-maximizing percentage price increase for Product A is:

$$\frac{\Delta p_A^*}{p_A} = \frac{GUPPI}{2} = \frac{Dm}{2}.$$

- If the merged firm chooses the prices of both products, the profit-maximizing percentage price increase for each product is:

$$\frac{\Delta p_A^*}{p_A} = \frac{\Delta p_B^*}{p_B} = \frac{GUPPI}{2(1-D)} = \frac{Dm}{2(1-D)}.$$

- Because $0 < D < 1$, the two-price merger simulation predicts a larger price increase than $GUPPI/2$
 - An increase in either product's price diverts some sales to the other product, making an additional increase in the other product's price profitable
 - The factor $1/(1 - D)$ captures this interaction between the two price increases

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 (uses Model 2)
 - 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

$$\begin{aligned} p &= \$100 & c &= \$60 \\ D &= 1/3 & m &= \frac{p-c}{p} = 0.4 \end{aligned}$$

- The market exhibits linear demand and complete symmetry, so

$$\frac{\Delta p_1^*}{p_1} = \frac{\Delta p_2^*}{p_2} = \frac{Dm}{2(1-D)} = \frac{(1/3)(0.4)}{2(1-1/3)} = 0.10 \quad \text{or } 10\%$$

So price will increase from \$100 to \$110

- This implies that the hypothetical monopolist would raise both products' prices to \$110, as in the Guidelines example

GUPPIs

■ Merger screening with GUPPIs

□ The idea

- GUPPI measures merger-created pricing pressure; it does not by itself predict the actual postmerger price increase.
- The FTC used store-level GUPPIs as an initial screen to identify local markets that appeared more or less likely to warrant further investigation. The Commission then considered the GUPPIs together with other quantitative and qualitative evidence

□ Example: Dollar General/Dollar Tree/Family Dollar

■ The situation

- Contested takeover of Family Dollar between Dollar Tree and Dollar General in 2014-2015
 - Family Dollar: 8,200 stores (multi-price point stores generally < \$10)
 - Dollar Tree: 5,000 stores (fixed-price point stores, selling everything for \$1 or less)
 - Dollar General: 11,300 stores (multi-price point stores)

□ The outcome

- Dollar Tree completed its \$9.2 billion acquisition of Family Dollar
 - The FTC required the divestiture of 330 Family Dollar stores
- *FTC problem:* How to perform a merger antitrust analysis on so many stores in two separate investigations?
 - Number of stores made an individual analysis difficult as a practical matter

GUPPIs

■ Merger screening with GUPPIs

□ Example: Dollar General/Dollar Tree/Family Dollar (con't)

■ The method

1. Determine a GUPPI screening threshold below which significant unilateral price effects would be treated as unlikely, absent contrary evidence
2. Estimate the GUPPI for each store in the investigation
3. Compare the estimated GUPPI against the screening threshold

The FTC treated the GUPPI screen as a starting point, not as a rigid presumption or safe harbor, and considered other evidence before identifying stores for divestiture

GUPPIs

■ Merger screening with GUPPIs

□ Example: Dollar General/Dollar Tree/Family Dollar (con't)

1. Determine a GUPPI screening threshold: An example

- Suppose that the agency decided that a 5-to-4 merger among equally sized firms charging the same price, with all diverted sales allocated among the remaining firms in proportion to their shares, presumptively would not raise competitive concerns
- If we know the margin of the stores, then we can determine the GUPPI for each store (which will be the same for all stores in this hypothetical market)
 - Estimate the diversion ratio according to the proportional share method: $D = 25\%$
 - Say the agency determined that the proper margin to use is 30%
 - Then $GUPPI = Dm = 25\% \times 30\% = 7.5\%$
 - Use 7.5% as the screening threshold (that is, if a $5 \rightarrow 4$ merger in a market of equally sized firms was acceptable to the agency and the GUPPI for each store in the merger was 7.5% , then any store in the transaction with a GUPPI less than or equal to 7.5% should be presumptively acceptable)
- In the *Family Dollar* investigation, the FTC used different GUPPI thresholds for the stores of the two firms:
 - 7.5% for Family Dollar ($\rightarrow$ 5 equivalent firms premerger with a 30% margin)
 - 10.0% for Dollar Tree ($\rightarrow$ 4 equivalent firms premerger with a 30% margin)
 - The explanation for the higher GUPPI threshold for Dollar Tree is that DT's format is not to sell items for more than a dollar, so given the disincentives associated with a fundamental change to the store's format the merged, firm will be more likely to resist changing DT prices even if there is pricing pressure to do so.

GUPPIs

■ Merger screening with GUPPIs

□ Example: Dollar General/Dollar Tree/Family Dollar (con't)

2. Estimate the GUPPI for each store in the investigation

- Retail stores that use electronic registers and bar code scanners collect data on each item sold and its price. This point-of-sale (POS) data is collected by services such as [Nielsen](#) and [IRI](#) and made available for purchase
- Retail sales data were available for Dollar General, Dollar Tree, and Family Dollar
- Using variation in sales while controlling for prices, promotions, and other factors affecting demand, econometric analysis can estimate how much of one store's lost revenue is captured by the other store
- Clarify the relationship between sales-diversion and revenue-diversion:

$$D_{12}^{sales} = \frac{\Delta q_2}{\Delta q_1} \frac{p_2}{p_1} = D_{12} \frac{p_2}{p_1},$$

where the quantities lost and gained are expressed as positive amounts

- Therefore:

$$GUPPI_1 = D_{12} m_2 \frac{p_2}{p_1} = D_{12}^{sales} m_2.$$

- If several Dollar Tree stores recapture sales lost by a Family Dollar store, write the final relationship as:

$$GUPPI_1 = \sum_j D_{1j}^{sales} m_j,$$

where j indexes the merger partner's recapturing stores

GUPPIs

■ Merger screening with GUPPIs

□ Example: Dollar General/Dollar Tree/Family Dollar (con't)

3. Compare the estimated GUPPI against the screening threshold

- Dollar Tree proposed that any required divestitures consist solely of Family Dollar stores
- The FTC used store-level GUPPIs as an initial screen to identify local overlaps in which the merger might harm competition
- The FTC then considered other evidence—including store proximity, ordinary-course business documents and data, information from market participants, and analyses conducted by state attorneys general—to evaluate the screened-in overlaps and identify additional overlaps that might present a Section 7 concern
- According to Commissioner Wright, the GUPPI-threshold process identified approximately half of the 330 stores ultimately required to be divested. Additional stores below the threshold were identified using qualitative evidence
- The FTC accepted an administrative consent order requiring Dollar Tree to divest 330 Family Dollar stores

GUPPIs

- “Merger simulation” with GUPPIs
 - Even with linear demand and constant marginal cost, allowing diversion ratios and margins to differ produces a substantially more complicated two-price formula
 - For example, when residual demand for both firms is linear but diversion ratios and margins differ, the optimal price increase formula becomes:

$$\frac{\Delta p_A^*}{p_A} = \frac{2D_{AB}m_B \frac{p_B}{p_A} + D_{BA}(D_{BA} + D_{AB})m_A}{4 - (D_{BA} + D_{AB})^2}$$

- The point is only to show how quickly the formula becomes more complicated when the symmetry assumptions are relaxed. *You will not be required to know or use this formula.*

GUPPIs

■ GUPPIs in court

- FTC v. Wilh. Wilhelmsen Holding ASA, 341 F. Supp. 3d 27, 64-65 (D.D.C. 2018)
 - Treating the FTC's GUPPI analysis as corroborative of more reliable ordinary course evidence of competitive effects
- FTC v. RAG-Stiftung, 436 F. Supp. 3d 278, 319 & n.33 (D.D.C. 2020)
 - Giving no weight to the FTC expert's GUPPI analysis because he inferred diversion from market shares in candidate markets the court had rejected; the court also identified additional reliability problems
 - Applying the 2010 Horizontal Merger Guidelines, the court also stated:

Even setting aside the GUPPI's market-share input, the model is unreliable here because: (1) the Merger Guidelines only recommend using the GUPPI to predict upward pricing pressure for “differentiated products,” § 6.1, and the products here are homogenous within each relevant product market (hydrogen peroxide formulated for a specific end use); (2) the GUPPI “assumes that customers have little or no bargaining power,” which is not the case with hydrogen peroxide customers; and (3) accurate GUPPI results “require[] precise information on pass-through behavior,” and Dr. Rothman provides no evidence to support his .8 pass-through rate of cost to price.¹

¹ *RAG-Stiftung*, 436 F. Supp. 3d at 319 n.33.

GUPPIs

■ GUPPIs in court

- United States v. Bertelsmann SE & Co. KGaA, 646 F. Supp. 3d 1, 43-44 (D.D.C. Nov. 7, 2022) (record citations omitted):

[D]r. Hill also ran a series of models based on the “gross upward pricing pressure index” (GUPPI). The GUPPI models use diversion ratios and margins as inputs, with higher diversion ratios and higher margins leading to a higher prediction of harm. But the GUPPI models used by Dr. Hill are more difficult for the defendants to challenge because those models were originally adopted by the defendants' own economists during the pre-complaint investigation of the instant merger. The GUPPI models also predict a reduction in author advances due to the merger, across different auction formats and using various diversion ratios, including those calculated by Professor Snyder. The government summarized Dr. Hill's findings as follows:

Figure 8. Dr. Hill's Estimates From Second-Score Auction and GUPPI Models (PX-964)

Model	Diversion Assumption	% Reduction in Author Compensation	
		PRH	S&S
Second-score auction model	Diversion according to share	4.3%	11.6%
Multi-round auction GUPPI	Diversion according to share	7.3%	19.2%
Multi-round auction GUPPI	Snyder diversion ratios	7.4%	12.8%
Single-round and hybrid GUPPI	Diversion according to share	3.7%	9.6%
Single-round and hybrid GUPPI	Snyder diversion ratios	3.7%	6.4%

There is ample precedent for using GUPPI and similar models to predict harm in antitrust cases. See *Wilhelmsen*, 341 F. Supp. 3d at 64; *Anthem*, 236 F. Supp. 3d at 212; see also *FTC v. Sanford Health*, No. 1:17-cv-133, 2017 WL 10810016, at *12–13 (D.N.D. Dec. 15, 2017), *aff'd*, 926 F.3d 959 (8th Cir. 2019).

GUPPIs

■ GUPPIs in court

- ❑ FTC v. IQVIA Holdings Inc., 710 F. Supp. 3d 329, 386-88 (S.D.N.Y. 2024)
 - The proposed acquisition would combine Lasso and DeepIntent, close competitors in the business-to-business market for healthcare-provider programmatic advertising, where prices were negotiated
 - The FTC's expert estimated diversion ratios from customer win/loss data and applied both GUPPI and a merger simulation to assess the merged firm's pricing incentives
 - Defendants' expert argued that GUPPI was inappropriate for a negotiated business-to-business market and challenged the diversion ratios and incremental margins used as inputs
 - The court found the FTC expert's analysis more persuasive:
 - ❑ Other courts had accepted GUPPI in business-to-business markets characterized by bargaining
 - ❑ A GUPPI variant designed for bidding markets produced even higher diversion ratios, indicating that the original analysis was conservative
 - ❑ The win/loss data and incremental-margin estimates were adequately supported
 - The court treated the quantitative analysis as additional evidence of anticompetitive effects because it was consistent with ordinary-course documents and testimony showing substantial head-to-head competition

Bottom line: IQVIA supports using GUPPI to assess pricing incentives in negotiated business-to-business markets when the methodology fits the competitive process and the inputs are supported by the evidence