

MERGER ANTITRUST LAW

LAW 1469
Georgetown University Law Center
Fall 2026

Tuesdays and Thursdays, 3:30 pm – 5:30 pm
Dale Collins

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Class 10 Homework Assignment—Instructor's Answer

Instructions

Submit by email by 3:30 pm on Thursday, September 24

Send to wdc30@georgetown.edu

Subject line: Merger Antitrust Law: Assignment for Class 10

Assignment

Calls for a memorandum to a partner (which may be sent to a client) and numerical problems.

Part A. Product market definition memorandum

John Clark, a partner in Able & Baker LLP with whom you work, has asked you to prepare a short memorandum explaining the role of product market definition in merger antitrust cases. Clark believes that the relevant geographic market will not be in dispute, so he would like you to focus on product market definition. Clark understands that courts typically use two complementary approaches in defining relevant product markets: (1) the *Brown Shoe* “outer boundaries” analysis based on reasonable interchangeability of use and cross-elasticity of demand, informed by the *Brown Shoe* “practical indicia”; and (2) the hypothetical monopolist test (HMT) under the Merger Guidelines. Clark would like the memorandum to explain the basic idea behind each approach, the kinds of evidence that are relevant in applying it, and how the two approaches relate to one another in practice. Write the memorandum so that it can be understood by a business client. You need not include formulas or perform any numerical HMT calculations in this part.

Part B. Critical loss problems

Calls for answers to questions (not in a memo form). Show your work.

1. Products A and B are being tested as a candidate market. The market price for each unit of either product is \$300, each type of product has a constant incremental cost of \$160 per unit and each product type has aggregate sales of 1000 units (i.e., 1000 units of Product A and 1000 units of Product B). When the price for both products is increased by \$15, each firm loses 100 units to products other than A and B. What is the critical loss for the candidate market of products A and B? Do A and B satisfy the hypothetical monopolist test using critical loss analysis and SSNIP of 5%?

2. In *FTC v. Occidental Petroleum Corp.*, No. 86-900, 1986 WL 952 (D.D.C. Apr. 29, 1986), the FTC challenged the pending acquisition by Occidental Petroleum, a major producer of polyvinyl chloride (“PVC”), of Tenneco’s PVC business. Both companies produced PVC in plants in the United States. The parties agreed that the relevant product markets were suspension

homopolymer PVC and dispersion PVC, and the PI proceeding focused largely on the relevant geographic market. The FTC alleged that the relevant geographic market was the United States for both types of products; the merging parties argued that the relevant geographic market was worldwide. In the Section 13(b) proceeding for a preliminary injunction, the evidence showed that if the price of all suspension homopolymer PVC produced in the United States was increased by 5%, U.S. customers would divert about 17% of their purchases to imports from foreign suppliers (who were ready to serve these customers). The evidence also showed that if the price of all dispersion PVC produced in the United States was increased by 5%, U.S. customers would divert about 12% of their purchases to imports from foreign suppliers (again, who were ready to serve these customers).¹ The evidence in the hearing also showed that the percentage gross margins for homopolymer PVC and dispersion PVC were 28% and 45%, respectively. Was the FTC correct that the relevant geographic market was the United States using the hypothetical monopolist test and a SSNIP of 5%?

3. Premium ice cream sells at \$4.00/pint and has a constant marginal cost of \$2.25/pint. The own-elasticity of aggregate demand for premium ice cream is -1.9, with almost all diversion going to regular ice cream. Two premium ice cream manufacturers proposed to merge. Does premium ice cream satisfy the hypothetical monopolist test under a 5% SSNIP, or should the market be expanded to include regular ice cream?

If you have any questions, send me an email. See you in class.

Instructor's Answers

Part A

¹ I have made up some of the facts here, but the hypothetical is consistent with the results in the case.

ABLE & BAKER LLP

To: John Clark
FROM: Dale Collins

Product Market Definition Tests

You have asked me to prepare a short memorandum explaining the role of product market definition in merger antitrust analysis and the tests that the courts use to define relevant product markets.

Section 7 of the Clayton Act prohibits acquisitions of stock or assets “where in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly.”¹ By its terms, a Section 7 violation contains three essential elements: (1) a relevant product market (“line of commerce”), (2) a relevant geographic market (“section of the country”), and (3) a reasonably probable anticompetitive effect in the relevant market (that is, the combination of the relevant product market and the relevant geographic market). Accordingly, adducing sufficient evidence to make out a relevant product market is an essential element in the proof of a Section 7 violation.

There are two complementary judicial “tests” for whether a particular product grouping—usually called a “candidate” or “provisional” market—is a relevant product market for merger antitrust analysis under Section 7: the “outer boundaries” and “practical indicia” test set forth by the Supreme Court in *Brown Shoe Co. v. United States*² and the hypothetical monopolist test under the Merger Guidelines.³ Courts commonly use both the *Brown Shoe* factors and the hypothetical monopolist test to define the boundaries of the relevant product market, although cases have held that either is sufficient.⁴

¹ 15 U.S.C. § 18.

² 370 U.S. 294, 325 (1962).

³ See U.S. Dep’t of Justice & Fed. Trade Comm’n, Horizontal Merger Guidelines § 4 (rev. Aug. 19, 2010) (“2010 Merger Guidelines”); U.S. Dep’t of Justice and Fed. Trade Comm’n, Merger Guidelines (rev. Dec. 18, 2023) (“2023 Merger Guidelines”). Although the 2010 Merger Guidelines were superseded by the 2023 Merger Guidelines, the 2010 Guidelines describe the price-SSNIP implementation of the HMT in greater detail, and most judicial precedent applying the HMT was developed under the 2010 Guidelines or their predecessors. See, e.g., *FTC v. Tapestry, Inc.*, 755 F. Supp. 3d 386, 414 (S.D.N.Y. 2024) (using the term SSNIP to conform with the majority of the case law).

⁴ See *Tapestry*, 755 F. Supp. 3d at 414-15; *FTC v. Meta Platforms Inc.*, 654 F. Supp. 3d 892, 912 (N.D. Cal. 2023); see also *FTC v. Tempur Sealy Int’l, Inc.*, 768 F. Supp. 3d 787, 824 (S.D. Tex. 2025). The 1982, 1992, and 2010 Merger Guidelines only recognized the hypothetical monopolist test for defining markets, although the DOJ and FTC in court also used the *Brown Shoe* tests because the courts expected it. The 2023 Merger Guidelines identified three additional tools for defining markets and listed the hypothetical monopolist test as a fourth tool: (1) direct evidence of substantial competition between the merging parties; (2) direct evidence of the exercise of market power; (3) the *Brown Shoe* “practical indicia”; and (4) the hypothetical monopolist test. 2023 Merger Guidelines § 4.3. Although the 2023 Merger Guidelines contain some commentary on the hypothetical monopolist test, they provide no guidance on how to apply the other three tools to define market boundaries. Courts have now begun citing the 2023 Guidelines in market-definition analysis, while treating them as persuasive rather than binding.

The *Brown Shoe* test. Under *Brown Shoe*, the “outer boundaries” of the relevant product market “are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it.”⁵ Moreover, “within this broad market, well-defined submarkets may exist which, in themselves, constitute product markets for antitrust purposes. The boundaries of such a submarket may be determined by examining such practical indicia as industry or public recognition of the submarket as a separate economic entity, the product’s peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.”⁶ This list is not exhaustive, and courts may consider any evidence qualitatively probative of the presence or absence of reasonable interchangeability of use and high cross-elasticity of demand. Courts have considered, for example, ordinary course business documents identifying competitors, customer testimony and switching behavior, pricing relationships, differences in product characteristics and uses, industry recognition, and supplier or product reputation when important to customer choice.⁷

The original purpose of the *Brown Shoe* “practical indicia” was to enable the finding of relevant (sub)markets within larger markets defined by the “outer boundaries” test. Modern courts, however, do not treat submarkets as legally different from markets and regard the *Brown Shoe* “practical indicia” as qualitative circumstantial factors probative of reasonable interchangeability of use and high cross-elasticity of demand.⁸

The hypothetical monopolist test. Under the 2010 Merger Guidelines, the hypothetical monopolist test “requires that a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present and future seller of those products (‘hypothetical monopolist’) likely would impose at least a small but significant and non-transitory increase in price (‘SSNIP’) on at least one product in the market, including at least one product sold by one of the merging firms.”⁹ The idea is that if a hypothetical monopolist—effectively a merger of all firms in the candidate market—could not profitably impose the specified SSNIP because too many customers would substitute to products outside the candidate market, the candidate market is too narrow to capture the significant competitive constraints on the products within it.

The 2023 Merger Guidelines retain the HMT but differ from the 2010 Guidelines in three respects relevant here. First, the 2010 Guidelines use the HMT as the principal market-definition methodology, while the 2023 Guidelines identify several alternative tools: direct evidence of substantial competition between the merging parties, direct evidence of the exercise of market power, the *Brown Shoe* practical indicia, and the HMT. Second, the 2023 Guidelines expand the price SSNIP to a “small but significant and non-transitory increase in price or other worsening of terms” (“SSNIPT”), which may include changes in quality, service, capacity investment, product variety or features, or innovative effort. Third, the 2010 Guidelines expressly require the price

authority. *See Tapestry*, 755 F. Supp. 3d at 414; *FTC v. Henkel AG & Co. KGaA*, No. 1:25-cv-10371-KPF, [slip op.](#) at 52-53 (S.D.N.Y. Aug. 14, 2026).

⁵ *Brown Shoe*, 370 U.S. at 325.

⁶ *Id.* (internal citations and footnotes omitted).

⁷ *See, e.g., United States v. H&R Block, Inc.*, 833 F. Supp. 2d 36, 51-53 (D.D.C. 2011); *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 27-33 (D.D.C. 2015); *Tapestry*, 755 F. Supp. 3d at 414-38.

⁸ *See FTC v. Meta Platforms Inc.*, 654 F. Supp. 3d 892, 914 (N.D. Cal. 2023); *Tapestry*, 755 F. Supp. 3d at 438-39.

⁹ 2010 Merger Guidelines § 4.1.1.

increase to apply to at least one product sold by a merging firm; the 2023 Guidelines omit that express requirement and require only that at least one product in the candidate market be subjected to the SSNIPT.¹⁰ Courts, however, continue largely to describe and apply the HMT using the traditional price-SSNIP framework reflected in the 2010 Guidelines and earlier precedent.¹¹

The hypothetical monopolist test was introduced in the 1982 DOJ Merger Guidelines. That version of the test required only that the hypothetical monopolist be able to increase prices profitably by a SSNIP. The 1992 and 2010 Guidelines instead asked whether a profit-maximizing hypothetical monopolist would impose at least the specified SSNIP. The 2023 Guidelines retain the profit-maximization formulation but broaden the inquiry to ask whether the hypothetical monopolist likely would undertake at least one SSNIP or SSNIPT. To illustrate, say, for example, for a SSNIP of 5%, the hypothetical monopolist would make more profits—that is, be more profitable—with the SSNIP than at prevailing prices, but the hypothetical monopolist’s profit-maximizing price increase would only be 4.3%, a little less than the SSNIP. In this case, the candidate market would be a relevant market under the profitability test of the 1982 Merger Guidelines, but would be rejected as a relevant market under the profit-maximizing test of the 2010 and 2023 Merger Guidelines.

As a practical matter, the difference between the formulations is insignificant. The number of cases in which the results would differ is probably small since this requires that the current price be within 5 percent of the monopolist’s profit-maximizing price. I have found no case in the case law where the results would differ depending on the formulation used. Moreover, the courts adopted the hypothetical monopolist test during a time when the agencies looked only at whether a SSNIP by a hypothetical monopolist was profitable, not whether the profit-maximizing price was equal to or greater than a SSNIP. As a result, it was the profitability test that entered into the judicial precedent. Although some courts use the profit-maximizing version of the hypothetical monopolist test, most courts still employ the language of the profitability test.¹²

The 2010 Merger Guidelines also modified the hypothetical monopolist test in two other significant ways:

- First, earlier versions of the Guidelines generally treated the *smallest* product grouping satisfying the HMT as the relevant market (the “smallest market principle”). The 2010 Guidelines relaxed that approach. They recognize that the HMT may identify multiple relevant markets and that the agencies may evaluate a merger in any relevant market satisfying the test, although when relying on market shares and concentration the agencies usually use the smallest relevant market satisfying the HMT. The 2023

¹⁰ Compare 2010 Merger Guidelines § 4.1.1, with 2023 Merger Guidelines §§ 4.3, 4.3.A.

¹¹ See, e.g., *Tapestry*, 755 F. Supp. 3d at 414 (using the conventional SSNIP terminology to conform with the majority of the case law); *FTC v. Meta Platforms Inc.*, 654 F. Supp. 3d 892, 912 (N.D. Cal. 2023).

¹² Formally, the profit-maximization formulation was adopted in the 1992 DOJ/FTC Horizontal Merger Guidelines, but the agencies did not emphasize the difference until the 2010 Merger Guidelines were released. Indeed, in investigations and in their briefs in court, the agencies continued to use the profitability version of the hypothetical monopolist test (probably because it is much easier to understand and implement). Courts nevertheless frequently continue to state and apply the HMT as a profitability test. See, e.g., *Tapestry*, 755 F. Supp. 3d at 414; *FTC v. IQVIA Holdings Inc.*, 710 F. Supp. 3d 329, 368-69 (S.D.N.Y. 2024); *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 33-34 (D.D.C. 2015); *United States v. H&R Block, Inc.*, 833 F. Supp. 2d 36, 51-52 (D.D.C. 2011).

Guidelines go further: they do not state a smallest-market preference and expressly recognize that multiple narrower, broader, or overlapping markets may be relevant.¹³

- Second, the hypothetical monopolist test originally required the hypothetical monopolist to increase the prices of all the products in the candidate market by the same SSNIP (the “uniform SSNIP test”). Under the 2010 Merger Guidelines, however, the hypothetical monopolist can selectively raise the prices of one or more differentiated products while leaving the other products unchanged.¹⁴ The 2010 Guidelines require only that the hypothetical monopolist be able to profitably raise the price of a subgroup within the candidate market—including a single product—by a SSNIP for the product grouping to be a relevant market, provided that the subgroup contains a product from at least one of the merging firms (the “one-product SSNIP test”). The 2023 Guidelines retain the ability to use a selective SSNIP or SSNIPT on at least one product in the candidate market, but omit the 2010 Guidelines’ express requirement that the product be sold by a merging firm.¹⁵

Courts have repeatedly applied the 2010 Guidelines’ selective and one-product SSNIP approach.¹⁶

¹³ Prior to 2010 the agencies on occasion had alleged relevant markets that satisfied the smallest market principle but did not look like any market or product grouping the industry or its customers had ever recognized. Courts tended to hold this departure from the “business realities” against the agency in rejecting the agency’s market definition. The 2010 Merger Guidelines addressed this problem by expressly recognizing that the HMT may identify multiple relevant markets and that the agencies may evaluate a merger in any relevant market satisfying the test, while usually relying on the smallest relevant market when using market shares and concentration. The FTC did this, for example, in alleging its market for DDIY tax preparation software in *H&R Block*. The FTC defined the market to include all DDIY tax products, although any two of the three major products satisfied the hypothetical monopolist test and hence the all-DDIY tax products market did not satisfy the smallest market principle. *See* 2010 Merger Guidelines § 4.1.1. The 2023 Guidelines state no smallest-market preference and expressly recognize that multiple narrower, broader, or overlapping markets may be relevant. *See* 2023 Merger Guidelines § 4.3.

¹⁴ Note that in the absence of search costs [which we will assume throughout the course], only if the products in the candidate market are differentiated can the market support different prices for different products. If the products are homogeneous (that is, they are all identical), then customers will purchase only on price and consequently will only purchase from the lowest price supplier. This will drive the market to a single price, so that the hypothetical monopolist test must be performed by uniformly increasing all the prices of all products in the candidate market by the SSNIP.

¹⁵ *Compare* 2010 Merger Guidelines § 4.1.1 (rev. 2010) (“Specifically, the test requires that a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present and future seller of those products (‘hypothetical monopolist’) likely would impose at least a small but significant and non-transitory increase in price (‘SSNIP’) *on at least one product in the market, including at least one product sold by one of the merging firms.*”) (emphasis added), *with* 2023 Merger Guidelines § 4.3.A (requiring a SSNIP or SSNIPT for at least one product in the group, without expressly requiring that product to be sold by a merging firm).

¹⁶ *See, e.g.,* FTC v. IQVIA Holdings Inc., 710 F. Supp. 3d 329, 368 (S.D.N.Y. 2024); FTC v. Meta Platforms Inc., No. 5:22-CV-04325-EJD, 2023 WL 8629125, at *15 (N.D. Cal. Dec. 13, 2023); FTC v. RAG-Stiftung, 436 F. Supp. 3d 278, 293 (D.D.C. 2020); FTC v. Wilh. Wilhelmsen Holding ASA, 341 F. Supp. 3d 27, 47 (D.D.C. 2018); United States v. Anthem, Inc., 236 F. Supp. 3d 171, 198 (D.D.C. 2017); United States v. Aetna Inc., 240 F. Supp. 3d 1, 20 (D.D.C. 2017); FTC v. Staples, Inc., 190 F. Supp. 3d 100, 121 (D.D.C. 2016); FTC v. Sysco Corp., 113 F. Supp. 3d 1, 33 (D.D.C. 2015); United States v. H & R Block, Inc., 833 F. Supp. 2d 36, 51-52 (D.D.C. 2011).

Note to class: The one-product SSNIP test introduces a twist into the profit calculus of the hypothetical monopolist. We will cover this in Class 11.

Application of the HMT can draw on both qualitative and quantitative evidence. Relevant evidence may include margins, customer switching and diversion data, win-loss information, customer surveys and testimony, ordinary-course documents concerning competitive alternatives, pricing relationships, natural experiments, and evidence concerning the costs and timing of switching. Quantitative implementations include the critical loss and recapture analyses discussed elsewhere in this course.¹⁷

Relationship between the two approaches. The *Brown Shoe* analysis and the HMT ask the same fundamental question from different directions: which products meaningfully constrain one another. *Brown Shoe* uses qualitative evidence of commercial realities to identify products customers regard as substitutes, while the HMT asks whether substitution outside the candidate market would be sufficient to defeat a hypothetical monopolist's SSNIP or SSNIPT. The evidence relevant to the two approaches often overlaps, and courts frequently use both, although, as noted above, either can be sufficient.¹⁸

Please let me know if you need more information on market definition or want to discuss it further.

¹⁷ See 2023 Merger Guidelines §§ 4.2, 4.3.C; *United States v. H&R Block, Inc.*, 833 F. Supp. 2d 36, 51-53 (D.D.C. 2011); *FTC v. Tapestry, Inc.*, 755 F. Supp. 3d 386, 414-15, 438-50 (S.D.N.Y. 2024).

¹⁸ See *FTC v. Meta Platforms Inc.*, 654 F. Supp. 3d 892, 912, 919 (N.D. Cal. 2023); *Tapestry*, 755 F. Supp. 3d at 414-15.

Part B

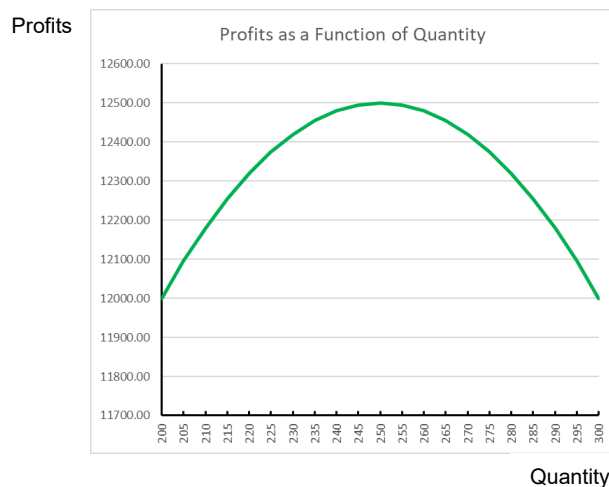
1. Products A and B are being tested as a candidate market. The market price for each unit of either product is \$300, each type of product has a constant incremental cost of \$160 per unit and each product type has aggregate sales of 1000 units (i.e., 1000 units of Product A and 1000 units of Product B). When the price for both products is increased by \$15, each firm loses 100 units to products other than A and B. What is the critical loss for the candidate market of products A and B? Do A and B satisfy the hypothetical monopolist test using critical loss analysis and SSNIP of 5%?

Answer

Critical loss is the maximum loss Δq a hypothetical monopolist can sustain from a specified price increase without reducing its profits below the level earned at current prices and output.

Assuming that the market is not already monopolized (so that current prices are below the monopoly price and aggregate production is above the monopolist's output), a small decrease in output by a hypothetical monopolist from current levels will increase its profits. At some point as further reductions are made, the hypothetical monopolist will reach a level of reduction that maximizes its profits. After that point, a continued reduction in output will decrease profits below the profit-maximizing level but still maintain them above the profits earned at current prices and output. Again, as reductions continue, at some point the reduction will be sufficiently large that profits will equal current profits and a further reduction will reduce profits below current profits. The total reduction in output from the prevailing level to this lower breakeven output is called the "critical loss."

A diagram may be helpful. Say the current price (p_1) is 145, the current output is 275, fixed costs are zero, and marginal costs are constant at 100. Accordingly, current profits are 12,375, as shown in the graph below:



As the chart illustrates, the same profits could be made by reducing the output to 225. Any further reduction would reduce profits below the prevailing level (that is, below the horizontal dotted line). The difference in output between the prevailing level and the lower breakeven output—here, 50 ($= 275 - 225$)—is the *critical loss*. If the output reduction associated with a

given price increase exceeds the critical loss, the price increase is unprofitable. If the output reduction associated with the price increase is less than the critical loss, the price increase is profitable.

Applied to the hypothetical monopolist test, if the actual output loss from a SSNIP is less than the critical loss, then the profits resulting from a SSNIP will be greater than current profits. Consequently, under the profitability version of the hypothetical monopolist test, the candidate market would be a relevant market. If the actual loss from a SSNIP is greater than the critical loss, the SSNIP is unprofitable and the candidate market fails this critical-loss implementation of the HMT.

Here, $p_1 = \$300$, $q_1 = 2000$ units (1000 units of product A plus 1000 units of product B), and the marginal cost of production is \$160 per unit. The gross margin on each sale is \$140 per unit (= price (\$300) – marginal cost (\$160)). A price increase of \$15 is 5% of the current price ($\$15/\$300 = 5\%$), so a price increase of \$15 is a 5% SSNIP. At a 5% SSNIP, the problem states that the actual loss would be 200 units (100 units of product A plus 100 units of product B).

The breakeven condition for the critical loss Δq_{cl} requires that profits at current prices and output are equal to profits with a SSNIP and the associated critical loss:

$$p_1 q_1 - c q_1 = (p_1 + \Delta p_1)(q_1 - \Delta q_{cl}) - c(q_1 - \Delta q_{cl})$$

Collecting terms:

$$(p_1 - c)q_1 = (p_1 + \Delta p_1 - c)(q_1 - \Delta q_{cl})$$

BTW, when fixed costs are zero and marginal costs are constant, the dollar gross margin $\$m$ times sales q is equal to profit ($\$mq = \pi$).

Applying the parameters in the hypothetical:

$$(300 - 160)2000 = (300 + 15 - 160)(2000 - \Delta q_{cl})$$

Solving, critical loss $\Delta q_{cl} = 193.55$ units.¹

We know from the statement of the problem that the actual loss for a 5% SSNIP is 200 units.

Since the actual loss is greater than the critical loss, A and B fail the critical loss implementation of the HMT using a uniform 5% SSNIP.

NOTE: Neither precision nor accuracy is a hallmark of market definition. Although actual loss is greater than critical loss, the difference is so small that it is unlikely a court would reject A and B as a relevant market if the qualitative evidence had convinced the judge that A and B are a proper relevant market.

¹ If you do not want to do the math, just plug the equation into [MathPapa](#) (but using x rather than Δq_{cl} which MathPapa will not understand).

Alternative 1. We can use another “brute force” approach to the problem that does not use critical loss:

Parameters from problem

Price	p	300
Cost	c	160
Market output	Q	2000
\$SSNIP	Δp	15
Customer loss	ΔQ	200

Gain on inframarginal sales = $(Q - \Delta Q)\Delta p$

$(Q - \Delta Q)$	1800	= 2000 - 200
Δp	15	
Gain	27,000	

Loss on marginal sales = $m\Delta Q$

\$Margin	$\$m$	140	= price - cost
Customer loss	ΔQ	200	
Loss		-28,000	

Since the gain on the inframarginal sales is less than the loss on the marginal sales, Products A and B do not satisfy the hypothetical monopolist test and therefore fail this uniform-SSNIP implementation of the HMT (subject to the above caution).

Alternative 2. Use the unit critical loss formula:

$$\begin{aligned}\Delta q_{cl} &= \frac{Q\Delta p}{(p + \Delta p) - c} \\ &= \frac{2000 \cdot 15}{(300 + 15) - 160} \\ &= 193.55\end{aligned}$$

This is the same critical loss we calculated originally. This is the most efficient way of implementing the hypothetical monopolist test given the parameters in the problem.

2. In *FTC v. Occidental Petroleum Corp.*, No. 86-900, 1986 WL 952 (D.D.C. Apr. 29, 1986), the FTC challenged the pending acquisition by Occidental Petroleum, a major producer of polyvinyl chloride (“PVC”), of Tenneco’s PVC business. Both companies produced PVC in plants in the United States. The parties agreed that the relevant product markets were suspension homopolymer PVC and dispersion PVC, and the PI proceeding focused largely on the relevant geographic market. The FTC alleged that the relevant geographic market was the United States for both types of products; the merging parties argued that the relevant geographic market was worldwide. In the Section 13(b) proceeding for a preliminary injunction, the evidence showed that if the price of all suspension homopolymer PVC produced in the United States was increased by 5%, U.S. customers would divert about 17% of their purchases to imports from foreign suppliers (who were ready to serve these customers). The evidence also showed that if the price of all dispersion PVC produced in the United States was increased by 5%, U.S. customers would divert about 12% of their purchases to imports from foreign suppliers (again, who were ready to serve these customers).² The evidence in the hearing also showed that the percentage gross margins for homopolymer PVC and dispersion PVC were 28% and 45%, respectively. Was the FTC correct that the relevant geographic market was the United States using the hypothetical monopolist test and a SSNIP of 5%?

Answer

This problem gives the actual loss in percentages, so we can use the percentage critical loss formula to calculate the percentage critical loss $\% \Delta q_{cl}$:

$$\% \Delta q_{cl} = \frac{\delta}{\delta + m},$$

where δ is the percentage SSNIP and m is the percentage gross margin (NOT the dollar gross margin). Substituting the parameters from the statement of the problem:

$$\% \Delta q_{cl-suspension\ PVC} = \frac{5\%}{5\% + 28\%} = 15.15\%$$

$$\% \Delta q_{cl-dispersion\ PVC} = \frac{5\%}{5\% + 45\%} = 10.00\%$$

Because actual loss exceeds critical loss for both products, the United States fails the 5% uniform SSNIP critical loss implementation of the HMT for both suspension homopolymer PVC and dispersion PVC. On the assumed facts, therefore, the FTC was not correct that the United States was the relevant geographic market under this HMT analysis

² I have made up some of the facts here, but the hypothetical is consistent with the results in the case.

3. Premium ice cream sells at \$4.00/pint and has a constant marginal cost of \$2.25/pint. The own-elasticity of aggregate demand for premium ice cream is -1.9, with almost all diversion going to regular ice cream. Two premium ice cream manufacturers proposed to merge. Does premium ice cream satisfy the hypothetical monopolist test under a 5% SSNIP, or should the market be expanded to include regular ice cream?

Answer

This problem gives the actual own-elasticity, so we can use the percentage critical elasticity formula to calculate the critical elasticity ε_{cl} :

$$|\varepsilon_{cl}| = \frac{1}{\delta + m}.$$

The percentage gross margin m is equal to 43.75% ($= (4.00 - 2.25)/4.00$)

Substituting the parameters from the statement of the problem:

$$|\varepsilon_{cl}| = \frac{1}{5\% + 43.75\%} = 2.05.$$

The problem gives the actual own-elasticity as -1.9 or, in absolute value, 1.9. Since the absolute value of the actual own-elasticity is less than the absolute value of the critical elasticity, premium ice cream satisfies this 5% HMT implementation, and the candidate market need not be expanded to include regular ice cream.