

MERGER ANTITRUST LAW

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Georgetown University Law Center
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Tuesdays and Thursdays, 3:30 pm – 5:30 pm
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Class 13 (October 8): H&R Block/TaxACT (Unit 9)¹

In this class, we will continue our examination of market definition. We introduced the hypothetical monopolist test in Class 11 and followed with its critical loss implementation in Class 12. We will finish market definition in *H&R Block* with its diversion ratio implementation of the hypothetical monopolist test.

The critical loss implementation we examined in the last class applies primarily to homogeneous product markets where quantity is the control variable and there is no price discrimination. Empirically, this occurs relatively infrequently in the real world. Instead, competing products tend to be differentiated from a consumer perspective (either by product characteristics or by location), giving each firm some ability to set its own price to maximize profits against the firm's (downward-sloping) residual demand curve.

In addition, although the original hypothetical monopolist test in the 1982 Merger Guidelines required the hypothetical monopolist to increase the prices of all of the products in the candidate market by a uniform percentage SSNIP, the 2010 and 2023 Merger Guidelines allow the hypothetical monopolist to raise the prices of one or more products in a differentiated market selectively while leaving the prices of the other products constant, provided that at least one of the products subject to the SSNIP is a product of one of the merging firms. Under this change, the hypothetical monopolist test only requires that the hypothetical monopolist be able to profitably *raise the price of a single product* of one of the merging firms in the product group for the product grouping to be a relevant market.

When a hypothetical monopolist raises price on only one product (say product 1), three things happen:

1. The monopolist gains the \$SSNIP on each of the inframarginal sales of product 1
2. The monopolist loses the profit margin on the lost marginal sales of product 1
3. The monopolist gains the profit margin on any lost marginal sales “recaptured” by other products in the candidate market (which the hypothetical monopolist controls).

The first two factors characterize the critical loss tests of Class 12 since there is no recapture of lost marginal sales by other products in the candidate market. Instead, all lost sales divert to products outside the candidate market. In a differentiated products market, however, some of product 1's lost marginal sales may divert to other products in the candidate market, and the hypothetical monopolist will earn incremental profits on those recaptured sales.

¹ A reasonably complete set of the most important filings in the litigation (including the trial transcript) may be found [here](#) on AppliedAntitrust.com.

An example may be helpful to compare a uniform SSNIP test with a one-product SSNIP test. Consider a candidate market consisting of four different types of gourmet yogurt with the following characteristics:

	Price	\$Margin	Unit Sales
Siggi's	\$2.50	\$1.00	1000
Noosa	\$2.50	\$1.25	800
La Fermiete	\$3.50	\$1.75	600
Oikos Triple Zero	\$4.00	\$2.00	500
			2900

When the prices of all products are increased by five percent, each product loses ten percent of its sales. None of these sales divert to another product in the group. Does the product group satisfy the HMT under a uniform SSNIP of five percent?

We can set up the following worksheet for a “brute force” accounting:

	Price	\$Margin	Unit Sales	Marginal Sales	%Δq	Inframarginal Gain	Marginal Loss	Net
Siggi's	\$2.50	\$1.00	1000	100	10.00%	112.50	100.00	12.50
Noosa	\$2.50	\$1.25	800	80	10.00%	90.00	100.00	-10.00
La Fermiete	\$3.50	\$1.75	600	60	10.00%	94.50	105.00	-10.50
Oikos Triple	\$4.00	\$2.00	500	50	10.00%	90.00	100.00	-10.00
						387.00	405.00	-18.00

Inframarginal gain for each product is 5% of the product’s price times the inframarginal unit sales. Marginal loss is the dollar margin of the product times the marginal unit sales. The sum of the net incremental profits is -\$18.00, so a uniform 5% SSNIP is unprofitable.

Now, let’s perform a one-product SSNIP test. Say Siggi’s is a product of one of the merging firms and subject it alone to a five percent SSNIP. Suppose Siggi’s loses 120 sales (12%) due to the price increase. Siggi’s loses one half of these unit sales to products outside the candidate market while the other half diverts to the other products in the candidate market at the levels shown in the Recaptured Sales column:

	Price	\$Margin	Unit Sales	Marginal Sales	Recaptured Sales	Inframarginal Gain	Marginal Loss	Recapture Gain	Net
Siggi's	\$2.50	\$1.00	1000	120		\$110.00	-\$120.00		-\$10.00
Noosa	\$2.50	\$1.25	800		30			\$37.50	\$37.50
La Fermiete	\$3.50	\$1.75	600		20			\$35.00	\$35.00
Oikos Triple	\$4.00	\$2.00	500		10			\$20.00	\$20.00
			2900		60	\$110.00	-\$120.00	\$92.50	\$82.50

Two things of note here. First, Siggi’s loses more sales when only its price increases than when the (percentage) price increase is applied to all four products because the other products in the group are more attractive to Siggi’s marginal customers at the lower prices. Second, notwithstanding the greater unit and dollar losses on Siggi’s when only its price is subject to the

SSNIP, the hypothetical monopolist makes a positive profit of \$82.50 because of the profits earned on Siggis's lost marginal sales that are diverted (recaptured) by the other three products in the candidate market. Hence, although the candidate market fails the uniform SSNIP test, it satisfies the one-product SSNIP test.

As this example suggests, one-product SSNIP tests typically yield relevant product markets that are smaller (have fewer products) than uniform SSNIP tests, which in turn often results in market shares and market concentration levels that are higher than in relevant markets that must satisfy a uniform SSNIP test.² This tendency often makes one-product SSNIP tests appealing to plaintiffs.

With this introduction, read the class notes on one-product SSNIPs and "aggregate diversion analysis." After an introductory slide (slide 139), the class notes review diversion ratios, discuss how experts estimate them, and develop the DOJ's estimation in H&R Block/TaxACT (slides 140-46). Diversion ratios refer to the percentage of unit marginal sales lost by a single product subject to a SSNIP that are diverted or recaptured by other products in the candidate market. You can see by the above example that this notion of diversion or recapture is central to one-product SSNIP implementations of the hypothetical monopolist test.

Brute force accounting will always work, but some formulas simplify the mechanics of the test. These formulas turn on the notion of a terribly named *aggregate diversion ratio*, which is much better descriptively as the *recapture ratio*, *recapture rate*, or *group recapture rate* (slide 147). These synonymous terms all mean the total percentage of lost marginal sales due to a SSNIP recaptured by all other products in the market not subject to the SSNIP. In the example on the previous page, 60 units of the 120 lost marginal sales are recaptured by other products in the candidate market, so the recapture ratio is 50%.

Intuitively, the larger the recapture ratio of lost marginal sales by other firms in the candidate, the more likely a one-product SSNIP will be profitable to the hypothetical monopolist. The smallest recapture ratio that allows the hypothetical monopolist to just break even on profits with or without the one-product SSNIP is called the *critical recapture ratio*. One-product SSNIP tests compare the *actual recapture ratio* to the critical recapture ratio. *If the actual recapture ratio is greater than the critical recapture ratio, the one-product SSNIP is profitable. If the actual recapture ratio is less than the critical recapture ratio, the one-product SSNIP is unprofitable.* The 2010 and 2023 Merger Guidelines reflect this principle (slide 148), and the class notes provide some intuitions that do not rely on math (slides 149-50). Two "brute force" applications should also help you understand the underlying principle (slides 151-52).

I SUGGEST THAT YOU SKIP THESE SLIDES FOR NOW AND RETURN TO THEM AFTER YOU HAVE FINISHED THE REST OF THE READING—The class notes derive various formulas for the one-product SSNIP test using recapture ratios under different assumptions about prices and margins of the products in the candidate market (slides 153-65). The class notes also give two applications of two single-product SSNIP formulas in the case of a candidate market with symmetric products (slide 166) and a candidate single-price market with products with different margins (slides 167).³ These slides are

² A one-product SSNIP also is likely to yield smaller geographic markets around the locations of the merging firms.

³ To be clear, I will expect you to be able to perform a one-product SSNIP test for symmetric products on the graded homework assignment and the final exam.

unquestionably complex, and I have marked most of the slides as optional. Nonetheless, I encourage you to try to plow through them if you have time after you have finished everything else.

Two significant issues plague this area of antitrust economics. First, the literature often lacks rigor, with propositions not clearly stated as theorems and frequently hiding critical assumptions. As a result, these formulas may be misapplied, leading even expert witnesses to errors. It is crucial to identify such mistakes early in your case preparation rather than risk them being exposed by the opposing side during deposition or, worse, on the stand. Second, many propositions are not properly derived, and some include errors that undermine their validity (see slide 169 for an example). Yet, flawed formulas still appear in expert reports and court opinions.

Exam tip: While the formulas may help you answer an exam question more quickly, if you know how to do the critical loss and recapture tests through brute force accounting, you will be able to answer the question without penalty.

The final implementation of the HMT we will discuss is the so-called “aggregate diversion ratio test” applied to a uniform SSNIP in a differentiated candidate market (slides 170-79). Why, you might sensibly ask, would anyone want to apply a uniform SSNIP to a differentiated products market? Why not use a standard one-product SSNIP test instead? The answer likely lies in the nature of the observed diversion ratios (recapture rates) in the market. Technically, diversion ratios represent the percentage of lost marginal sales from one product (subject to a SSNIP) that shift to other products, holding their prices constant. This is the type of diversion ratio necessary for a one-product SSNIP test. However, if the available data reflect price increases across all products—such as switching data driven by cost increases for a common factor—a standard one-product SSNIP test cannot be applied.⁴ The aggregate diversion ratio test, used by the DOJ expert in the H&R Block case, seems designed for such scenarios.

The class notes introduce the aggregate diversion ratio test (slides 171-72). Try to plow through the (admittedly complex) notation (slide 173) and Proposition 1 and its corollary for symmetric products (slide 174). You do not have to fully understand Proposition 1 (and you will not be required to use it on the exam), but study the corollary since the DOJ’s expert used it in *H&R Block*. Then look at Proposition 2, which provides a set of sufficient conditions for satisfying the aggregate diversion ratio test (slide 175) and the hypothetical on the following slide (slide 176).

Now, you are ready to follow what the DOJ expert did in *H&R Block* (pp. 110-12, p. 115 for the diversion ratios, and slides 177-78). *Query*: Is the DOJ expert’s analysis correct? Did he apply the right formula given the facts of the case?

The DOJ’s expert also used merger simulation to support his market definition conclusion. Like the Court, we will defer discussion of merger simulation until we examine competitive effects (pp. 112-13 and slide 186).

The merging parties attempted to refute the DOJ’s expert and present an alternative market definition through their own expert (pp. 113-24). As you will see, this did not go well. Review

⁴ The diversion ratios in the two situations are likely to differ materially: for any product in the candidate market subject to a SSNIP, the other products in the candidate market are more attractive substitutes (have a higher diversion ratio) when the prices of the other products remain constant than when their prices increase.

briefly the note on expert evidence (pp. 182-89) before closely examining Judge Howell's Memorandum Opinion and Order, which denied the DOJ's motion to exclude the defendants' email survey and the related expert testimony (pp. 167-81).

Enjoy the reading! As always, email me if you have any questions.