

## MERGER ANTITRUST LAW

LAW 1469  
Georgetown University Law Center  
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Tuesdays and Thursdays, 3:30 pm – 5:30 pm  
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### **Class 11 (September 29): H&R Block/TaxACT (Unit 5)<sup>1</sup>**

In this class, we will continue our examination of market definition. In the last class, we developed the hypothetical monopolist test when discussing Sanford Health/MDC and introduced its critical loss implementation. We will begin with applications of critical loss, including homogeneous product markets with differentiated margins, and then turn to the one-product and uniform SSNIP recapture implementations of the HMT for differentiated product markets.

*Critical loss applications.* We ended the last class with the basic critical loss implementation of the hypothetical monopolist test. Recall the essential idea: for a specified SSNIP, the critical loss is the maximum loss of sales the hypothetical monopolist can sustain while still earning at least as much profit as before the price increase. The SSNIP is profitable if the actual loss is less than the critical loss and unprofitable if the actual loss is greater than the critical loss.

In this class, we will begin by applying that basic framework in several different ways. Depending on the information available, the relevant comparison may involve unit loss, percentage loss, elasticity, revenue loss, or simply a brute-force accounting of the gains and losses from the SSNIP. We also will consider an important complication: even in a homogeneous-product market, the firms in the candidate market may have different margins. In that situation, the profitability calculation depends on the margins associated with the sales actually lost rather than simply on a single common market margin.

With this background, review the critical loss algorithm from the end of the last class and work through the applications in the class notes (slides 116-136). The profit-maximization material is optional (slide 128). Pay particular attention to the brute-force method, the unit loss share-weighted average margin, and the maximum-margin sufficiency test (slides 131-136). Make sure you understand the examples; these illustrate techniques you should be able to apply to a hypothetical merger. *Whole Foods* illustrates how critical loss analysis can become more complicated when stores sell mixed product types and how framing choices can drive different conclusions about the relevant market (pp. 136-45). Read the excerpt with those points in mind.

*One-product SSNIP recapture tests.* The critical loss implementation primarily applies 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.

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

The 1982 Merger Guidelines required a uniform SSNIP across the products in the candidate market. Later Guidelines permitted selective price increases in differentiated product markets. Under the 2010 Guidelines and the prevailing judicial formulation, the HMT can be satisfied by a profitable SSNIP on a single product, but the SSNIP must be imposed on at least one product sold by one of the merging firms. The 2023 Guidelines retain selective application of the test and extend it to a SSNIPT, but no longer require that the price increase or other worsening of terms be imposed on a product of one of the merging firms. This distinction will matter in the special case of 100% recapture discussed later in the notes.

When a hypothetical monopolist raises the 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 covered in the previous class 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-product 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.

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 points are worth noting 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 Siggi'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 passes 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 result in market shares and market concentration levels that are higher than in those relevant markets that must satisfy a uniform SSNIP test.<sup>2</sup> This tendency often makes one-product SSNIP tests appealing to plaintiffs.

All of this should feel familiar from our study of unilateral effects. If you already understand the basic principle of unilateral effects—where a merged firm profits from raising price on only one product because it recaptures enough diverted sales on its other product—you will recognize the logic of the one-product SSNIP recapture test. Here the same principle applies, except that the hypothetical monopolist recaptures diverted sales across all of the products in the candidate market that do not experience the SSNIP.

The next step is to translate this intuition into measures that can be used in the HMT. The key building block is the *diversion ratio*: the share of Product 1's lost sales that goes to a particular other product when Product 1's price increases and the destination product's price is held constant.

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

Diversion is directional and specific to the price experiment being tested. The class notes review several ways diversion ratios may be estimated, including ordinary-course win/loss data, company documents, surveys, switching data, econometric demand estimation, and—when better evidence is unavailable—the relative market share method. Pay particular attention to Warren-Boulton’s use of market shares to estimate diversion between H&R Block and TaxACT (slides 139-145). The notes introduce the one-product SSNIP immediately before this discussion (slides 137-138).

Once the individual diversion ratios are understood, the next question is how much of Product 1’s total lost sales stay inside the candidate market. The aggregate recapture ratio is the share recaptured by all of the other products inside the candidate market. Individual diversion ratios tell you where particular lost sales go; the aggregate recapture ratio adds the diversion to all inside products. The 2010 Guidelines and prevailing judicial formulation require the one-product SSNIP to be profitable on at least one product of a merging firm, while the 2023 Guidelines do not retain the merging-product requirement. The class notes develop this legal and economic framework and collect cases accepting the one-product approach (slides 146-148).

The minimum recapture ratio required to make the SSNIP profitable is called the *critical recapture ratio*. This ratio is specific to the product on which the SSNIP is imposed and the magnitude of the SSNIP. The one-product SSNIP recapture test then holds:

*If the actual recapture ratio exceeds the critical recapture ratio, the candidate market satisfies the one-product SSNIP implementation of the HMT.*

*Otherwise, the candidate market fails this implementation of the HMT.*

Two points to note here.

First, whereas the critical loss test looks to whether actual loss is less than the critical loss, the one-product SSNIP recapture test looks to whether the actual recapture ratio exceeds the critical recapture ratio. This makes sense: critical loss asks whether the marginal sales of the hypothetical monopolist are too large to make the SSNIP profitable, while the one-product SSNIP test asks whether the hypothetical monopolist recaptures enough of the lost marginal sales to make the SSNIP profitable.

Second, it is essential to remember that a candidate market that fails one implementation of the HMT but satisfies a different implementation still passes the HMT. So, a candidate market that fails a uniform SSNIP critical loss test but satisfies a one-product SSNIP test still passes the HMT. Likewise, a candidate market that fails a one-product SSNIP test when the SSNIP is applied to one product, but satisfies the test when the SSNIP is applied to another product, passes the HMT. Do not make the mistake of concluding that a candidate market fails the HMT just because it fails one implementation.

The critical recapture comparison can also be written as a formula. For Product 1, the critical recapture ratio is:

$$R_{Critical}^1 = \frac{\delta p_1}{\$m_{RAve}} \left( = \frac{\$SSNIP_1}{\$m_{RAve}} \right),$$

where  $\delta$  is the percentage SSNIP applied to Product 1<sup>3</sup>

$p_1$  is the pre-SSNIP price of Product 1

$\delta$ SSNIP is the dollar SSNIP applied to Product 1

$\$mRAve$  is the recapture-share-weighted average dollar margin of the recapturing products in the candidate market (see slide 154)

Don't worry too much about how to calculate the  $\$mRAve$ . The key thing to remember is that it is the weighted average of the dollar margins of the products in the candidate market, where the weights are each product's relative recapture share. The effect is that products that recapture more of Product 1's lost marginal sales count more heavily in the average than those that recapture fewer.

The formula makes the same point as the brute-force accounting: the SSNIP is profitable when enough of Product 1's lost sales are recaptured at the margins earned by the recapturing products. The class notes set out the notation and the fundamental critical recapture proposition (slides 153-154). The derivation is optional (slides 155-157), and you will not be tested on the algebra. For most purposes, it is enough to understand why the actual recapture ratio is compared with the critical recapture ratio.

Several simplifications follow from the general formula. You need not know Corollaries 1-3, which are optional (slide 158). You should know the symmetric-products result in Corollary 4 (slide 159) and the two-product result in Corollary 5 (slide 160); the latter is the same basic condition we will later use in unilateral-effects analysis. The mechanics of calculating a recapture-share-weighted average dollar margin are optional (slides 161-165). The gourmet-pizza examples show how the simplified formulas reproduce the brute-force result (slides 166-167). Even here, brute-force accounting remains an acceptable and often preferable way to solve the problem.

There are two cautions worth understanding before leaving the one-product test. First, the Katz-Shapiro formula that is sometimes cited for a one-product SSNIP is incorrect for a one-product test because it assumes that recaptured sales also receive the SSNIP; it is, however, the correct symmetric formula for a uniform SSNIP (slide 168). Second, 100% recapture does not have the same implication under the 2010/current judicial formulation and the 2023 Guidelines. Under the former, 100% recapture for every product does not necessarily make the candidate market pass if neither merging product can profitably bear the SSNIP. Under the 2023 Guidelines, the SSNIP may be applied to any product in the candidate market, and the notes show why a candidate market with 100% recapture across all products will satisfy the test under the stated assumptions. The counterexample is important (slides 169-170); the proof is optional (slides 171-173).

The *IQVIA* excerpt provides a recent judicial application of the one-product approach. As you read it, focus on how the court frames the one-product HMT and evaluates the diversion and recapture evidence used to support the proposed market. Read the excerpt after completing the one-product SSNIP materials (pp. 146-55).

The one-product analysis assumes that only Product 1's price changes. A uniform SSNIP asks a different question because all products in the candidate market receive the price increase. The inside products are therefore less attractive destinations for Product 1's lost sales, so the

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<sup>3</sup> By convention, unless otherwise specified, Product 1 is the product on which the hypothetical monopolist applies the one-product SSNIP.

diversion and recapture rates generally differ from those generated by a one-product SSNIP. In addition, recaptured sales earn the recapturing products' increased margins rather than their original margins. The class notes develop this distinction and the corresponding notation and critical recapture formulas (slides 174-179). In the symmetric case, note that the uniform SSNIP critical recapture formula has the same mathematical form as the familiar percentage critical loss formula, even though one is a recapture rate and the other is a loss rate.

Which test is appropriate depends on the evidence available. One-product diversion and recapture rates measure substitution when only Product 1's price rises and the other inside products remain at their original prices. Uniform SSNIP recapture rates measure substitution when all products in the candidate market receive the price increase. General switching data directly measures neither experiment, but it may be a better proxy for uniform SSNIP recapture than for one-product recapture because the switching is not generated by a controlled change in one product's relative price.

The final concept for this class is a useful sufficiency test for a uniform SSNIP. If every product's uniform recapture rate is at least its critical rate and at least one product's rate strictly exceeds its critical rate, the aggregate uniform SSNIP is profitable. But this is only a sufficient condition, not a necessary one: a loss on one product can be more than offset by gains on other products. Do not infer that the candidate market fails the HMT merely because one product fails this product-by-product test (slide 180).

For Class 11, stop with the uniform-SSNIP sufficiency test (slide 180). We will begin Class 12 with an example applying that test (slide 181), then apply the uniform-SSNIP framework to Warren-Boulton's H&R Block analysis (slides 182-184) and complete market definition before turning to the next part of the case.

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