

MERGER ANTITRUST LAW

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Class 15 (October 19): H&R Block/TaxACT (Unit 9)¹

After finishing anything on coordinated effects, we will turn to mavericks, unilateral effects, and efficiencies in *H&R Block*. If all goes well, this will be the last class on *H&R Block* (but don't hold your breath).

Mavericks

A “maverick” is a competitor that disrupts coordinated interaction among the other, more accommodating competitors that would occur in the maverick's absence.² When an accommodating competitor acquires a maverick, the acquiring firm is likely to suppress the maverick's disruptive conduct, resulting in a less competitive market equilibrium. The *H&R Block* court, as do many analysts, treats mavericks as part of the coordinated effects theory. While this is analytically correct, it is more convenient in talking to clients to isolate mavericks in their own separate theory.

Mavericks have that Potter Stewart “I know it when I see it” quality.³ The most likely reason a firm is a maverick is idiosyncratic: The particular management of the firm simply believes—rightly or wrongly—that being disruptive is a profit-maximizing strategy over whatever time horizon the management has. There is an argument that mergers should not be prohibited merely because one merging firm's current management—perhaps even just the current CEO—believes in being disruptive. After all, even in the absence of the merger, the management in the future could change its strategy and become more accommodating, or shareholders could become disillusioned with a disruptive strategy and vote the current management out.

Even so, the agencies and the courts recognize the elimination of a maverick in a market susceptible to oligopolistic interaction (coordinated effects) to be a valid theory of anticompetitive harm. Still, the courts at least are likely to require a plaintiff invoking a maverick theory to show that the firm likely would remain a maverick and continue to disrupt the market if the merger did not occur. The *H&R Block* court set out a sensible four-part test for the elimination of a maverick through a merger to be anticompetitive:

- (1) the market must be conducive to a materially higher degree of coordinated interaction than it exhibits premerger;

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

² Recall from our examination of ABI's attempted acquisition of Grupo Modelo in Unit 6 that the Justice Department alleged that Modelo was a “maverick” in the U.S. beer market in that, unlike Miller/Coors and other U.S. beer suppliers, it was unwilling to follow ABI's leadership in raising prices.

³ *Jacobellis v. Ohio*, 378 U.S. 184, 197 (1964) (in reference to constitutionally unprotected hard-core pornography).

- (2) the disruptive conduct of the merger target must be 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 coordination interaction in the market to the harm of consumers.

Typically, smaller firms have more incentive to be a maverick than larger firms because they have less to lose in pursuing a disruptive pricing strategy. Consider a single-price market. If a large firm elects an aggressive pricing strategy, it must lower the prices on all the products making up its large market share. This will result in a large margin loss that the aggressive strategy will have to make up in the profits from substantial additional sales of the now lower-priced products. On the other hand, a small firm has relatively few existing sales on which it must reduce its prices and hence requires a much smaller increase in sales to offset this loss. This difference could lead a smaller firm to pursue an aggressive pricing strategy when a larger firm would not. Of course, when the disruptive firm merges with a horizontal competitor, the combined market share increases, reducing the incentive of the combined firm to continue the aggressive strategy.

Read the *H&R Block* treatment of mavericks (pp. 118-21), the very brief maverick sections of the 2010 Horizontal Merger Guidelines and the 2023 Draft Merger Guidelines (p. 248), and the class slides (slides 87-98).

Unilateral effects

The next topic will be unilateral effects. Unilateral effects has been the primary theory of anticompetitive harm employed by the agencies in their horizontal merger investigations since their introduction in the 1992 Horizontal Merger Guidelines. It is hard to find a modern agency challenge to a horizontal merger that did not rely on this theory, so it is important that you understand the theory and its application.

Theory. The basic idea of the unilateral effects theory is straightforward and echoes a bit the underlying economics of a one-product SSNIP test in a two-product candidate market. Assume firms A and B produce differentiated products that are substitutes, that is, the products exhibit some cross-elasticity/diversion between each other. This means that if firm A was to increase its price and firm B was to hold its price constant, firm A would lose some sales (its marginal sales) and some of these lost sales would be diverted to firm B at firm B's original price.⁴ Say that we have the following pre-price increase situation:

| | Pre-Price Increase | | | | |
|--------|--------------------|-------|--------|-----|---------|
| | p | mc | margin | q | Profits |
| Firm A | \$300 | \$100 | \$200 | 100 | 20000 |
| Firm B | \$350 | \$90 | \$260 | 120 | 31200 |

⁴ Remember, when firm A increases its price, firm B's product becomes more attractive to some of firm A customers at firm B's original price.

BTW, firm A should be at its profit-maximizing output level in the pre-price increase situation. Now suppose that firm A increases its price by \$30 to \$330 and, as a result, firm A loses 15 units, 9 of which go to firm B. Now we have:

Post-Price Increase

| | |
|------------------------------------|------|
| Firm A increases prices by: | \$30 |
| Firm A marginal (lost) unit sales: | -15 |
| Diversion: A to B | 60% |
| Unit sales firm A loses to firm B: | 9 |

| | p | mc | margin | q | Profits | Profit change |
|--------|-------|-------|--------|-----|----------|---------------|
| Firm A | \$330 | \$100 | \$230 | 85 | \$19,550 | -\$450 |
| Firm B | \$350 | \$90 | \$260 | 129 | \$33,540 | \$2340 |

Note that firm A loses \$450 due to the price increase (as it should since firm A was originally at its profit-maximizing output and price). Firm B’s profits increase by \$2340 as a result of the diversion, but what happens to firm B is irrelevant to firm A. So firm A should not raise its price.

Suppose that firm A acquires firm B. Now firm A seeks to maximize the joint profits of itself and firm B. When firm A increased its prices, firm B gained nine units of sales from the diversion, which provided firm B with an additional \$2340 in profits. Jointly, the combined firm makes \$1890 when firm A increases its price and firm B holds its price constant, so the combined firm can profitably increase firm A’s price postmerger.⁵

This is the theory of unilateral effects. The recapture of diverted sales by firm B changes the combined firm’s profit-maximizing function and *creates upward pricing pressure*. Now you should read the unilateral effects sections of the 2010 Horizontal Merger Guidelines and the 2023 Draft Merger guidelines (pp. 250-59), the H&R Block court’s analysis of unilateral effects (pp. 142-55), and slides 99-107 of the class notes.

Continuing with the class notes, Example 2 illustrates unilateral effects diagrammatically and is worth some study (slides 108-13). Think about the examples this way: When A acquires B, hold B’s price constant and require A to compensate B for B’s profit losses from diverted sales when A increases production and lowers its price.⁶ This internal accounting within the combined firm maintains B’s profits at the premerger levels and books all of B’s losses to A, allowing us to look only at A’s incentives to change production levels and price postmerger. (Note that the combined firm’s profits are unchanged regardless of how the firm accounts for losses between A and B on

⁵ This analysis does not explain by how much the combined firm should increase firm A’s price postmerger. Moreover, usually with unilateral effects, if the combined firm should increase firm A’s price, then it should also increase firm B’s price. As the hypothetical monopolist increases firm B’s price, the profit-maximizing increase in firm A’s price decreases.

⁶ Be watchful here. In Example 1, we *increased* firm A’s price, which caused A to lose sales, some of which were diverted to firm B. In example 2, we *decreased* firm A’s price, which caused A to gain some sales, some of which came from B (because A became relatively more attractive). We changed because it is easier to see the change in the first-order condition for profit-maximization when A is gaining sales rather than losing them.

its internal books.) Premerger, A did not consider B's profit losses when A made its profit-maximizing decisions. Postmerger, however, A must compensate B for B's losses when A increases its production. This imposes an *opportunity cost* on A postmerger that did not exist premerger.⁷

Slide 103 shows the accounting for Example 2. We see that firm A's premerger profit-maximizing production level is 140, which provides a market-clearing price of 160. But A did not take into account the profit loss to B if A were to increase its production and lower its price. When A acquires B, however, A must consider B's losses. Using our accounting assumption that A must pay B for its losses, A must take into account this opportunity cost when calculating marginal revenue. In particular, if A increases production by one unit, B will lose 0.3 units ($D_{BA} = 0.3$). If B's profit margin ($\$m_B$) is 140 at B's premerger price (which could be different than A's premerger price), then the loss to B will be $D_{BA} * 0.3 * \$m_B = 140 = 42$. Postmerger, A will have to consider this *marginal opportunity cost* in A's marginal revenue:

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

So the merger reduces A's postmerger marginal revenue.⁸ Diagrammatically, since A's postmerger marginal revenue is less than its marginal cost, this shifts A's postmerger marginal revenue down and to the left (slide 109). As a result, the intersection of A's postmerger marginal revenue and marginal cost shifts to the left (slide 110). A must reduce production level and increase its price to satisfy its postmerger first-order condition. Setting A's postmerger marginal revenue equal to A's marginal cost, A's postmerger production level decreases to 119 and its postmerger price increases to 181 (slide 110). It is this difference between the profit-maximizing first order condition for a single firm premerger and the profit-maximizing first order condition for the combined firm postmerger that is the essence of the unilateral effects theory.

Slides 111-13 develop Example 2 numerically and graphically. You can see on slide 112 (which graphs the data on slide 111) how firm A's profit curve changes with the acquisition. Slide 114 summarizes the general principle behind Example 2. Slides 115-16 approach unilateral effects more formally. These slides are optional but well worthwhile if you are up for a little math.

Unilateral effects as a theory of anticompetitive harm was conceived to handle situations like the Nestlé-Dreyer merger if the relevant market is all-ice cream (slides 117-19). In an all-ice cream market, the HHIs fall below the Merger Guidelines thresholds for indicating competitive concern. But the high cross-elasticities among super-premium ice cream and relatively low cross-elasticities between super-premium ice cream and regular ice cream suggest that the

⁷ An opportunity cost is the potential benefit an actor foregoes when choosing one alternative over another. For example, by attending law school a student foregoes the income she would have made by continuing to work for three years. This foregone income is an opportunity cost for the student. Opportunity costs are real costs in the sense that they must be deducted from the benefits of taking the action. If attending law school increases the net present value of the student's income stream by \$4 million but the student foregoes income of \$300,000 by attending law school, the net present value of law school is \$3.7 million. For some good quick treatments, see Jason Fernando, [Opportunity Cost Formula, Calculation, and What It Can Tell You](#), Investopedia.com (undated), Marginal Revolution University, [What Is Opportunity Cost](#) (YouTube), or Econclips, [Opportunity Cost: The Road Not Taken](#) (YouTube).

⁸ As you can see, you could equivalently treat the marginal opportunity cost of B's loss as an addition to A's marginal cost.

merger could eliminate local competition between Nestlé and Dreyer's, resulting in higher super-premium ice cream prices and harm to consumers.

In practice, however, unilateral effects is not used as originally conceived. Instead, if there is cross-elasticity between the products of the merging companies of the magnitude necessary to have a material anticompetitive unilateral effect, it is almost always possible to define the relevant market narrowly around those products and other very close substitutes. In these narrow markets, the combined company's market share and the resulting increase in market concentration have been high enough to easily predicate the *PNB* presumption. Indeed, as you can see, the economics behind unilateral effects and market definition using one-product SSNIP tests are closely related and typically yield comparable results.

Slides 120-21 give the Merger Guidelines' requirements for the application of the theory and examine two types of evidence especially probative on the theory. Unilateral effects also has implications for market definition (slide 122) and offsetting marginal cost efficiencies (slide 123).

Finally, quickly read the excerpts on unilateral effects from *United States v. Bazaarvoice, Inc.* (Bazaarvoice/PowerReviews), *New York v. Deutsche Telekom AG* (T-Mobile/Sprint), and *United States v. Anthem* (Anthem/Cigna) (pp. 260-73). These excerpts should give you a very good feel for how parties argue and courts treat unilateral effects as a theory of anticompetitive harm.

Merger simulation

This section is a bit complicated. You may want to skip it until after you have read everything else. Antitrust economists like to predict price increases resulting from a merger through a "merger simulation," but courts give these predictions little weight and usually cite them only when they support a conclusion that the court reached on other evidence. But you will hear "merger simulation" and "GUPPI" with some frequency, so you should have a basic understanding of these terms.

Diversion ratios, as already apparent, are fundamental to unilateral effects. In Example 2 above, when firm A increased its production level, some, but presumably not all, of its increased unit sales came from firm B. Now suppose that firm A *increases* its price and so decreases its production level. Say Δq_A is the total decrease in A's sales and $\Delta q_{A \rightarrow B}$ is B's gain of unit sales from A, and let Δp_A be the price increase in A necessary to clear the market after the production decrease. Then we can define the diversion ratio from A to B as:

$$D_{A \rightarrow B} \equiv D_{AB} = \frac{\frac{\Delta q_{A \rightarrow B}}{\Delta p_A}}{\frac{\Delta q_A}{\Delta p_A}} = \frac{\Delta q_{A \rightarrow B}}{\Delta q_A}.$$

For example, if in response to a SSNIP in A's product, firm B loses 100 unit sales and firm B gains 25 units of those sales, then the diversion ratio from A to B is 0.25.

Why do diversion ratios matter? Remember, the unilateral effects theory is based on internalizing the externality firm A imposes on firm B when firm A changes its output (price) levels. In the case where A decreases its output to increase price, the magnitude of this (positive) externality on B is the number of units B gains as a result of A's price increase (Δq_B) times the gross margin

$(p_B - c_B)$ B earns on each diverted unit, so to keep B's profits at premerger levels B has to pay A (rather than the other way around). As we can see from the schematic equations earlier, the magnitude of A's postmerger adjustment to its production levels depends on the magnitude of the externality the merger internalizes: the more B earns from the diverted sales, for example, the larger the payment from B to A and the greater A's reduction in its production level to reequilibrate its marginal revenue and its marginal cost postmerger. If we know the magnitude of the externality the merger internalizes, the shape of A's residual demand curve, and A's marginal costs, we can estimate the magnitude of A's production reduction and the resulting price increase for A's products as a result of the merger (under whatever assumption we make about how other firms respond to this price increase with their own output and price changes).

Estimates of the magnitude of the changes in price and output that would result from a merger is known as *merger simulation* (slides 124-26). Antitrust economists define a measure called the *gross upward pricing pressure index (GUPPI)* to measure the magnitude of the pricing externality, which they can then use to assess the merged firm's incentive to raise prices under a unilateral effects theory in the absence of entry, repositioning, and efficiencies:

$$GUPPI_A \equiv \frac{\text{Value of profits from sales diverted to product B}}{\text{Value of all sales lost by product A}} = \frac{\Delta q_B (p_B - c_B)}{\Delta q_A p_A},$$

where the merging firms produce products A and B, respectively, and $GUPPI_A$ is the measure for product A. Section 6.1 of the 2010 DOJ/FTC Horizontal Merger Guidelines implicitly creates a measure of this type. Right now, don't try to make sense of what a GUPPI means. Just learn the definition. (It is not intuitive at all to me.)

Let $m_B = \frac{p_B - c_B}{p_B}$ be the percentage gross margin of product B and D_{AB} be the unit

diversion ratio between product A and product B. Then multiplying by p_B/p_B yields:

$$GUPPI_A = \frac{\Delta q_B (p_B - c_B)}{\Delta q_A} \frac{p_B}{p_B} \frac{p_B}{p_A} = D_{AB} m_B \frac{p_B}{p_A},$$

which is the usual form of a GUPPI in antitrust analysis. The larger the GUPPI, the more firm A has an incentive to increase its prices when it acquires firm B.⁹ Read slides 129-30.

Before continuing, we should make three important points about GUPPIs:

1. GUPPIs, like elasticities, are dimensionless, that is, they do not change in magnitude with different units of measurement. As the above equation shows, GUPPIs are the product of three ratios (each of which is dimensionless). So changing the dollar measure from dollars to pounds sterling, for example, will not change the magnitude of the GUPPI.
2. GUPPIs give you more information about the likely price effects of a merger than cross-elasticities. As you know, diversion ratios (D_{AB}) are mathematically related to cross-elasticities (ϵ_{AB}), but GUPPIs weigh the diversion ratios by the percentage margin of product B. So if we hold the cross-elasticity between product A and B constant (which, in

⁹ We may call this a *unit sales GUPPI* because the measure of diversion is unit sales. We could also create a dollar sales or revenue GUPPI by measuring diversion in dollar sales (see slide 130).

turn, holds the diversion ratio constant), the greater the percentage gross margin of product B, the more incentive firm A has to raise its prices postmerger (since A is recapturing more of the lost marginal profits on A's own sales). So among antitrust economists, diversion ratios and GUPPIs are "crowding out" cross-elasticities as the variables of interest.

- Without more structure on the demand system, the cost functions, and the nature of equilibrium in the market (i.e., how firms react to changes in one another's output and price choices), GUPPIs give at best only a qualitative indication of the magnitude of the likely price increases that might result from a horizontal merger. In other words, as the GUPPI increases, the magnitude of the likely postmerger price increase is likely to increase, but we cannot tell by looking at the GUPPI what the price increase is likely to be.

By adding structure, however, we can use GUPPIs to simulate price increases resulting from mergers. In the very special case of linear residual demand curves and equal diversion ratios ($D_{AB} = D_{BA} = D$), equal marginal costs, equal prices, and equal market shares, Bertrand competition, no changes in the prices of any nonmerging firm, and no entry, expansion, repositioning, or efficiencies, the GUPPI gives the profit-maximizing price increase postmerger under the unilateral effects theory. The profit-maximizing price increase for product A when B keeps its price at its premerger level:

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

The profit-maximizing price increase for both product 1 and product 2 when raising the price of both products:

$$\frac{\Delta p_1^*}{p_1} = \frac{\Delta p_2^*}{p_2} = \frac{GUPPI}{2(1-D)} = \frac{Dm}{2(1-D)}.$$

In other words, the profit-maximizing price increase when the merged firm raises the price of both products is half of the profit-maximizing price increase when the merged firm raises the price of only one of the two products. This makes sense given the model's linearity of demand and the symmetry assumptions. Slide 131 reports these results and slides 132-41 provide some applications. Slide 140 illustrates how the formula for simulated postmerger price increases becomes much more complicated as the assumptions are relaxed.¹⁰ GUPPIs are beginning to appear in some court opinions, but they are often plagued with data problems and, to date, have only provided additional support for more reliable means of proving the requisite anticompetitive effect (slide 141).

Note that if we impose enough structure on the model to allow GUPPIs to predict the magnitude of postmerger price increases, we can use merger simulations using GUUPIs to apply the hypothetical monopolist test for market definition. Warren-Boulton did this in H&R Block/ TaxACT to support his conclusion that DDIY was the relevant product market (see pp. 113-14). Warren-Boulton also used his merger simulation using GUPPIs more directly to support his conclusion that the merged

¹⁰ You will not be required to apply the formula on slide 128. I include it only to show you how complicated the formulas become for more general situations.

firm would raise prices under the unilateral effects theory (see pp. 149-53). This part of the opinion deserves some careful attention. Given the background provided by the class notes, you should be able to understand what Warren-Boulton was doing here, although the court does not give enough information in the opinion to enable you to replicate the results.

For completeness, I have included a few slides on a dominant firm with a competitive fringe, which can be part of a theory of unilateral effects (slides 142-46). You can skip those for now, but we will return to this theory in a later unit.

Efficiencies

The defendants' next rebuttal argument addressed in the opinion is that of efficiencies (pp. 155-60). Read this section of the opinion and the efficiencies sections of the 2010 Horizontal Merger Guidelines and the 2023 Fraft Merger Guidelines (pp. 290-96). The class notes in the Downward Pricing Pressure Defenses deck (slides 12-35) provide some more detail. Finally, quickly read the excerpts on efficiencies from *Anthem*, *Wilhelmsen*, and *Hackensack* (pp. 304-12). If you are put for it (now or later), look at the excerpts from the opinion and the Transcript of Record in *Bertelsmann* (pp. 313-38).

On Tuesday, we will finish with anything we did not cover on H&R Block/TaxACT. We will then turn to U.S. Sugar/Imperial Sugar, our next case study.

Enjoy the reading! Email me if you have any questions.