MERGER ANTITRUST LAW

Class 16 (October 24):   H&R Block/TaxACT (Unit 9)[1]

After we finish anything left over from Class 15, the next topic will be unilateral effects. (HMG § 6, and slides 3-46). Unilateral effects is the primary theory of anticompetitive harm employed today by the agencies in their merger investigations. It is hard to find an agency decision to challenge a merger that did rely on this theory. So it is important that you understand the theory and its application.

Unilateral effects

My suggestion is that you first read the unilateral effects materials in the following order: (1) Section 6 of the Horizontal Merger Guidelines; (2) the unilateral effects theory section of the opinion (pp. 121-34); (3) the class notes on unilateral effect, reading with some care slides 3-17, skipping slides 18-23, and then skimming slides 24-46 just so you know what the content is, and (4) rereading the opinion and referring to the slides (including slides 24-46) as the court employs specific tools.

Theory. The basic idea of the unilateral effects theory is straightforward. Assume firms A and B produce products that are substitutes, that is, the products exhibit some cross-elasticity between each other. This means that if firm A, for example, was to increase its production level (requiring a decrease in its price to clear the market), some of firm A's new sales would come from firm B, and firm B would lose money. In other words, A's output increase imposes a negative externality on B. But A does not care about that premerger—B's profit loss is B's problem. Premerger, firm A maximizes its profit by choosing its production level to equate its marginal revenue to its marginal cost independently of its effect on the profits of B and any other firms.

Now assume that firm A acquires firm B as a subsidiary and tells B it will compensate B for its profit losses to the extent B's customers switch to A in response to A increasing its production. That is, A has now internalized the negative externality it would inflict on B. This adds an additional (negative) term to Firm A's marginal revenue: the payment it makes to B when B's customers switch to A. In this scenario, firm A is no longer equating its marginal revenue to its marginal cost at the premerger level of output and price: A's marginal revenue from a price increase is *less* than its marginal cost because of the payment to B.[2] Since A's postmerger marginal revenues are less than its marginal cost at premerger prices, A should increase its price (reduce its production) to restore the equality and maximize its profits. Hence, the merger results in a price increase in A's products even assuming that no other firm changes its price (that is, without the need for any accommodation). Indeed, we can show that the merged firm will have a

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

[2] Remember, marginal revenue at q is the revenue the firm would earn *if* it increased its output by one unit. It is not revenue the firm actually earns when it produces q.

profit-maximizing incentive to increase the prices of both A's and B's products, although a joint price increase would be less than if the merged firm only increase the price of one of the two products.[3]

Here is a schematic way to think about unilateral effects when A is considering about increasing output (when marginal cost is constant):

Premerger: $MR_A^{\text{Premerger}} = MC_A$ since A is profit maximizing

Postmerger: $MR_A^{\text{Postmerger}} = MR_A^{\text{Premerger}} - \text{Payment by A to B for B's losses} < MC_A$

Since $MR_A^{\text{Postmerger}} < MC_A$, A should decrease output from premerger level to maximize postmerger profits, which will result in a price increase for A's products (given the downward sloping demand curve facing A).

The story is most straightforward when the firm is considering increasing its production because marginal revenue and marginal cost are commonly interpreted to mean the gain in revenue (positive or negative) and the additional cost the firm confronts when it increases its production by one unit. But the antitrust story deals with price increases from quantity reductions. Here, we need to reintrepretate marginal revenue and marginal cost. When the firm is considering increasing its price by reducing its production level, marginal cost is the production cost *savings* the firm makes when reducing its output by one unit and its marginal revenue is the *loss* the firm confronts from the reduction of its sales by one unit. The profit-maximizing first order condition for the firm can then be written $-MR = -MC$, that is, the loss of marginal revenue (positive or negative) from a reduction in the firm's production by one unit is just equal to the savings the firm makes from the reduction in production costs from producing one less unit.[4] Now when A increases its price by lower its production, B receives a positive externality of the additional profits its earns when some of A's customers switch their purchases to B. Premerger, A does not take B's positive externality into account in making its production decisions. But if A acquires B and requires B to pay A the additional profits B earns from A's former customers, then A's marginal revenue loss from the price increase will be less than its marginal cost at the premerger level of output and prices. To reequilibrate marginal revenue loss and marginal cost savings, A needs to decrease its output and raise its price to maximize its profits. Schematically:

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[3] Analytically, this is similar to the situation of pollution. When a firm emits pollution that harms as a third party, it will ignore this harm—known in economics as a *negative externality*—in making its production decisions. If, however, the firm has to pay the third party for the damages the pollution inflicts, the firm is now forced to take into account the negative externality its actions impose on the third party. As a result, the firm will reduce its production level precisely because the payment for the negative externality reduces the firm's marginal revenue and the firm must cut back on its production to reequilibrate its marginal revenue and its marginal cost. This is called *internalizing the externality*.

[4] The conditions $MR = MC$ and $-MR = -MC$ are mathematically identical, since the second condition is simply the first condition when both sides are multiplied by -1.

Premerger: $-MR_A^{\text{Premerger}} = -MC_A$ since A is profit maximizing

Postmerger: $-MR_A^{\text{Postmerger}} = -MR_A^{\text{Premerger}} + \text{Payment by B to A for B's profit gains} < -MC_A$

Since $-MR_A^{\text{Postmerger}} < -MC_A$, A should decrease output from premerger level to maximize postmerger profits, which will result in a price increase for A's products (given the downward sloping demand curve facing A).

The first few slides in the class notes give a definition of unilateral effects and explain the general idea (slides 4-5). Slides 6-9 use some mathematics to make the idea explained in the previous paragraph more precise. Try to wade through the math and the diagram so that you can see the difference between the profit-maximizing first order condition for a single firm premerger and the profit-maximizing first order conditions for the combined firm postmerger and how to interpret the terms in the first order condition (bottom of slide 8). This is the heart of the unilateral effects theory. (Slides 18-23 present the theory more formally, but if you do not know calculus you may skip them).

Study the numerical example and the charts on slides 10-12 and the application of unilateral effects theory to the Nestlé-Dreyer's merger (slides 13-15). Slides 16-17 give the Merger Guidelines' requirements for the application of the theory and examine two types of evidence especially probative on the theory.

Diversion ratios. Slides 24-31 explore diversion ratios. In our example 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 (decreases its production level). Say Δq_A is the total decrease in A's sales and $\Delta q_{A \to B}$ is B's gain of unit sales from A and let Δp_A be the price decrease in A necessary to clear the market after the production increase. Then we can define the diversion ratio from A to B as:

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

For example, if in response to a SSNIP in A's product, firm B loses 100 unit sales and firm B gains 24 of those sales, then the diversion ratio from A to B is 0.25. Slide 26 gives another illustration. If you think that diversion ratios are closely related to cross-elasticities, you would be correct. Slide 27 gives the formal relationship and Slide 28 gives an example.

Diversion ratios are becoming a key variable of interest in merger antitrust analysis for reasons we will shortly see. Diversion ratios are empirical facts and there are a variety of ways to try to estimate them. Slide 29 discusses this. A frequently used—although not particularly accurate— means of estimating diversion ratios when you have no cross-elasticity or even switching data is to use relative market shares (see the bottom of slide 29 and the example on slide 30). This estimation method assumes that customers divert in proportion to the market shares of the competitor firms (after adjusting for any out-or-market diversion). So if there are three firms A, B, and C with shares of 50%, 40%, and 10% respectively and then is no switching to any other firms, then the market share estimation says that if firm A raises its prices, 80% of its lost customers will divert to firm B (since B has 80% of the market share excluding firm A) and 20%

will divert to firm C (since C has 20% of the market share excluding firm A). The diversion ratios between A to B and A to C are then 0.8 and 0.2, respectively. Mathematically,

$$D_{A \to B} = \frac{s_B}{1 - s_A}.$$

This formula assumes that all of the diverted units go to the products of interest (say the products in the candidate market). If some diversion goes to other products (the "outside option"), we need to modify the formula to take this into account:

$$D_{A \to B} = \left(1 - \frac{\Delta q_{outside}}{\Delta q_A}\right) \frac{s_B}{1 - s_A},$$

where Δq_A is the total number of unit sales A loses when it raises its price and $\Delta q_{outside}$ is the number of these diverted units that go to the outside option.

Warren-Boulton used this market share estimation method in H&R Block/TaxACT to estimate diversion ratios (see slide 31 and p. 129).[5]

Merger simulation. Why do diversion ratios matter? Remember, the theory of unilateral effects is based on internalizing the externality A imposes on B when A changes its output (price) levels. In the case when 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. 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's 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 the 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 the 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 32-33). 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:

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

where the merging firms produce products A and B, respectively, and GUPPI1 is the measure for product A. Section 6.1 of the 2010 DOJ/FTC Horizontal Merger Guidelines implicitly creates of measure of this type.

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Let $m_B = \dfrac{p_B - c_B}{p_B}$ be the percentage gross margin of product B and DR_{AB} be the unit diversion ratio between product A and product B. Then multiplying by p_B/p_B yields:

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

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.[6]

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 changes 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 the slides show, diversion ratios (D_{AB}) are mathematically related to cross-elasticities (ε_{AB}), but GUPPIs weight 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 turns 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. So among antitrust economists, diversion ratios and GUPPIs are "crowding out" cross-elasticities as the variables of interest.

3. 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 leaving the price of product B at its premerger level:

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

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[6] 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 35).

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 linearity of demand and the symmetry assumptions in the model. Slide 36 reports these results and slides 37-42 provide some applications. Slide 43 illustrates how the formula for simulated postmerger price increases become much more complicated as the assumptions are relaxed.[7]

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 in support of his conclusion that DDIY was the relevant product market (see pp. 92-93). Warren-Boulton also used his merger simulation using GUPPIs more directly in support of his conclusion that the merged firm would raise prices under the unilateral effects theory (see pp. 128-30). 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.

For completeness, I have repeated two slides on unilateral effects with a competitive fringe from the competition economic unit (slides 44-45). 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. 134-39). Read this section of the opinion, Section 10 of the Horizontal Merger Guidelines, and then the class notes (slides 48-71).

Efficiencies that permit a firm to lower its costs of production, increase its product quality, or accelerate its rate of innovation or product improvement can make the market more competitive and increase consumer welfare. In the proper circumstances, efficiencies can negate the likelihood that a merger would be anticompetitive. Under this idea, the greater the magnitude of the likely anticompetitive effect in the absence of efficiencies, the greater the efficiencies must be to offset it. Likewise, the more certain the likelihood of an anticompetitive effect in the absence of efficiencies, the more certain the offsetting efficiencies must be.[8]

To be "cognizable" under the Merger Guidelines, efficiencies must be verifiable, be merger-specific and not result from an anticompetitive reduction in output or service. Cognizable efficiencies may include, for example, shifts in production among the facilities of the merging firms that enable the combined firm to reduce its marginal costs of production. Efficiencies relating to research and development may be substantial, but are often difficult to verify and may

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[7] You will not be required to apply the formula on slide 43.

[8] *See* FTC v. University Health, Inc., 938 F.2d 1206, 1223 (11th Cir. 1991); FTC v. Arch Coal, Inc., 329 F. Supp. 2d 109, 15051 (D.D.C. 2004).

be the result of anticompetitive reductions in output (presumably R&D output). Efficiencies related to procurement, management, or capital costs may not be merger-specific or substantial.

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Agency practice since the 1997 amendments make clear that the federal enforcement agencies will consider efficiencies only to the extent that they ultimately benefit customers in the relevant market.[9] As a result, efficiencies that reduce costs, for example, will be taken into account to the extent that the cost savings is passed on to customers. This adds another significant hurdle in establishing an efficiencies defense, because the merging parties will have to show not only that the efficiencies exist but also that it is in the profit-maximizing interest of the combined firm to pass on some of the benefits of the efficiencies to customers in the form of lower prices or increased quality, as opposed to retaining the benefits for the combined firm's owners.[10] In at least one investigation, however, the Antitrust Division found it sufficient that the significant cost savings that likely result would enable the combined firm to compete more effectively.[11]

Failing company defense

The last slides in the Class 16 notes examine the failing company defense (slides 72-73). In 1930, the Supreme Court, in International Shoe Co. v. FTC,[12] held that when the acquired company's resources were depleted, business failure was a grave possibility, and no noncompetitor was willing to purchase the failing firm, an acquisition by a competitor that otherwise might threaten competition would not violate the Clayton Act. The legislative history

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[9] *See* 2010 DOJ/FTC Horizontal Merger Guidelines § 10 (recognizing efficiencies as a defense only to the extent that the "efficiencies likely would be sufficient to reverse the merger's potential to harm customers in the relevant market, e.g., by preventing price increases in that market.") (footnote omitted), Appendix 3-1; 1992 DOJ/FTC Horizontal Merger Guidelines § 4 (same), Appendix 3-2; *see also* FTC v. CCC Holdings, Inc., 605 F. Supp. 2d 26, 74 (D.D.C. 2009) (rejecting cost-savings efficiency defense where there was "no evidence to suggest that a sufficient percentage of those savings will accrue to the benefit of the consumers to offset the potential for increased prices"); FTC v. University Health, Inc., 938 F.2d 1206, 1223 (11th Cir. 1991) (holding that defendant asserting an efficiency defense "must demonstrate that the intended acquisition would result in significant economies and that these economies ultimately would benefit competition and, hence, consumers").

[10] The courts, to the extent that they consider efficiencies, are also adopting the view that efficiencies should be considered only to the extent that they benefit customers. *See* FTC v. Swedish Match, 131 F. Supp. 2d 151, 172 (D.D.C. 2000).

[11] See U.S. Dep't of Justice, Press Release, Statement of the Department of Justice's Antitrust Division on its Decision to Close its Investigation of the Joint Venture Between SABMiller plc and Molson Coors Brewing Company (June 5, 2008) ("In one of the key parts of the investigation, the Division verified that the joint venture is likely to produce substantial and credible savings that will significantly reduce the companies' costs of producing and distributing beer. These savings meet the Division's criteria of being erifiable and specifically related to the transaction and include large reductions in variable costs of the type that are likely to have a beneficial effect on prices. The large amount of these savings and other evidence obtained by the Division supported the parties' contention that the venture should make a lower-cost, and therefore more effective, beer competitor.") (paragraph break omitted).

[12] International Shoe Co. v. FTC, 280 U.S. 291 (1930).

of the 1950 amendments to the Clayton Act specifically recognized this "failing company" defense.[13] In *General Dynamics*,[14] the Supreme Court characterized the defense as a "lesser of two evils" approach, in which the possible threat to competition resulting from the acquisition was preferable to the adverse competitive impact and other losses that would be incurred if the failing company failed.[15]

The failing company defense is frequently invoked in transactions that are prima facie unlawful under the *PNB* presumption. It has been invoked on numerous occasions in the courts, usually without success.[16] Likewise, although the 2010 DOJ/FTC Horizontal Merger Guidelines acknowledge that the failing company doctrine is at least a factor in the competitive analysis, if not a standalone defense, the Guidelines employ the doctrine restrictively.

The DOJ and FTC always have been antagonistic to the failing company doctrine, but in deference to its long judicial acceptance the 2010 DOJ/FTC Horizontal Merger Guidelines, as have the earlier guidelines, include a section on failing companies.[17] Like the more demanding courts, the Guidelines recognize the defense only when: (1) the firm is failing in the sense that it is unable to meet its financial obligations in the near future; (2) the firm is unable to reorganize successfully under Chapter 11 of the Bankruptcy Act; and (3) the firm has made unsuccessful good-faith efforts to elicit reasonable alternative offers that would keep its tangible and intangible assets in the relevant market and pose a less severe danger to competition than does the proposed merger.[18]

There have been very few invocations of the failing company defense that have been successful before either the DOJ or the FTC. As before the courts, although it is relatively easy to show that the company or division is failing, historically it has been difficult to convince the agencies that the requisite effort has been made to find a less anticompetitive purchaser. Success means that

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[13] S. REP. NO. 1775, 81st Cong., 2d Sess. 7 (1950); H.R. REP. NO. 1191, 81st Cong., 1st Sess. 6 (1949).

[14] United States v. General Dynamics Corp., 415 U.S. 486 (1974).

[15] Id. at 507.

[16] The successful cases include International Shoe Co. v. FTC, 280 U.S. 291 (1930); Union Leader Corp. v. Newspapers of New England, Inc., 284 F.2d 582 (1st Cir. 1960); Reilly v. Hearst Corp., 107 F. Supp. 2d 1192, 120305 (N.D. Cal. 2000); FTC v. Great Lakes Chem. Corp., 528 F. Supp. 84, 96-98 (N.D. Ill. 1981); United States v. M. P. M., Inc., 397 F. Supp. 78 (D. Colo. 1975). *See* Granader v. Public Bank, 417 F.2d 75 (6th Cir. 1969) (summary dismissal of Section 7 complaint affirmed after state court receivership proceedings had found Public Bank insolvent and acquirer only prospective purchaser). For cases in which the defense was unsuccessful, see, for example, United States v. Greater Buffalo Press, Inc., 402 U.S. 549 (1971); Citizen Publ'g Co. v. United States, 394 U.S. 131 (1969); United States v. Third Nat'l Bank in Nashville, 390 U.S. 171 (1968); United States v. Von's Grocery Co., 384 U.S. 270 (1966); United States v. El Paso Natural Gas Co., 376 U.S. 651 (1964); United States v. Philadelphia Nat'l Bank, 374 U.S. 321, 372 n.46 (1963); United States v. Diebold, Inc., 369 U.S. 654 (1962); Michigan Citizens for an Independent Press v. Thornburgh, 868 F.2d 1285, 128788, (D.C. Cir. 1989) (Newspaper Preservation Act); FTC v. ProMedica Health Sys., Inc., 2011 WL 1219281, at *57 (N.D. Ohio 2011); FTC v. Harbour Group Invs., L.P., Civ. No. 90–2525, 1990 WL 198819 (D.D.C. Nov. 19, 1990); FTC v. Bass Bros. Enters., Inc., 1984 WL 355 (N.D. Ohio 1984).

[17] 2010 DOJ/FTC Horizontal Merger Guidelines § 11.

[18] *See id*. The 1992 Guidelines included a fourth requirement: absent the acquisition under investigation, the assets of the failing firm would exit the relevant market. 1992 DOJ/FTC Horizontal Merger Guidelines § 5.1. The four-part 1992 Guidelines test has been adopted by some courts. *See* FTC v. Arch Coal, Inc., 329 F. Supp. 2d 109, 154 (D.D.C. 2004).

the challenged transaction cannot go forward, and the agencies almost conclusively presume that the failure to find a less anticompetitive purchaser is the result of a failure of effort, not a real absence of alternative purchasers. This skepticism is compounded by the agencies' view, expressed in a footnote in the Guidelines, that any offer to purchase the assets of the failing firm or division at a price above liquidation value is a reasonable alternative offer that vitiates the defense.

The Guidelines, like many courts, extend the defense to failing divisions of otherwise healthy companies, although they emphasize that great care must be exercised in analyzing the division's cash flow to ensure that it is negative in an economically meaningful sense and not just an artifact of financial accounting. In analyzing divisional cash flow, as well as in determining whether the division's assets will leave the market if the acquisition is unable to proceed, the agencies will require evidence beyond business plans or financial statements prepared by management.

On Thursday, we will finish with anything that did not did cover on H&R Block/TaxACT opinion. We will take a break from the more technical aspects of merger antitrust law to look at the ABI/Grupo Modelo beer merger. Then on Tuesday we will start on the Sysco/U.S. Foods case study.

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

Dale