MERGER ANTITRUST LAW

LAWJ/G-1469-05   Tuesdays and Thursdays, 3:30-4:55 pm
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Fall 2018   dale.collins@shearman.com
                                                         www.appliedantitrust.com

CLASS 19 WRITTEN ASSIGNMENT—INSTRUCTOR'S ANSWER

Instructions

Submit by email by 3:30 pm on Thursday, November 1
Send to dale.collins@shearman.com
Subject line: Merger Antitrust Law: Assignment for Class 19

Assignment

Calls for a memorandum.

Coca-Cola and Fresh OJ have made a presentation to the staff on their defenses, and the staff has undertaken some additional investigation, both to confirm the facts stated by the merging parties and to find additional evidence relevant to the parties' defenses. Melissa Brown, your section chief at the FTC, has asked you to revise your memorandum of whether the FTC can make out a prima facie case in court that the Coca-Cola/Fresh OJ merger, if consummated, would violate Section 7. In particular, Ms. Brown has asked you to update your memorandum with any new facts pertinent to the FTC's ability to establish a prima facie Section 7 violation to add a section that assesses the merits of the parties' defenses. Ms. Brown also would like your conclusion as to whether the FTC will prevail on a Section 7 challenge in court.

In the meeting with the staff, the merging parties made three points:

1.   The merger will permit the combined firm to reduce annually recurring overhead costs by consolidating management, back office, and sales operations and eliminating almost all of the corresponding Fresh OJ operations.

2.   The merger will permit the combined firm to reduce operating costs by consolidating all production in the Coca-Cola plants and closing and dismantling all of the Fresh OJ plants, which were running at 65% capacity. The Coca-Cola plants, which were running at 60% of capacity and which postmerger will run at full capacity, will be able to produce 87.1% of the output of the two companies premerger. While this will result in a production shortfall of 45 million gallons compared to the combined output of the merging firms premerger, Coca-Cola expects with the anticipated decline in aggregate demand in the coming years, it will again have excess capacity in a year and a half or so.

3.   Tropicana has more than sufficient excess capacity to make up any shortfall or, for that matter, any attempt by the merged firm to anticompetitively reduce output in order to raise prices.

After the meeting, the staff developed the following information on capacity utilization in the production of orange juice in the current year along with a postmerger projection based on Coca-Cola postmerger plans:

Orange Juice	Premerger			Postmerger		
	Gallons	Capacity		Gallons	Capacity	
	(millions)	(millions)	%util	(millions)	(millions)	%util
Tropicana	291	416	70%	291	416	70%
Coca-Cola	136	227	60%	227	227	100%
Fresh OJ	136	209	65%	--	--	--
OJ Natural	46	46	100%	46	46	100%
Others (6)	38	38	100%	38	38	100%
	648	936	69%	602	727	83%

Moreover, the staff found that over the last three years, OJ Natural and the "Others" have maintained a 100% utilization of their production capacity, while the "Big Three" have been reducing their orange juice production by about 5.4% in response to falling demand.

Note 1: You may assume that Ms. Brown is familiar with the facts, so that you do not need to include a statement of facts in the memorandum. Just cite to the facts as you do the analysis.

Note 2: All demand is linear in all prices and quantities of interest.

INSTRUCTOR'S ANSWER

To: Melissa Brown, Assistant Director

From: Dale Collins

Coca-Cola/Fresh OJ: The Prima Facie Case

As you requested, this memorandum updates my previous memorandum analyzing ~~You have asked me to analyze~~ whether the FTC can make out a prima facie case of anticompetitive effect in court against Coca-Cola's pending acquisition of Fresh OJ. It also adds a section that assesses the merits of the parties' defenses. I conclude that the FTC would have a strong case on the merits and would prevail in court.~~In particular, you have asked that I analyze the dimensions of the relevant market and whether the evidence is sufficient to allow the court to conclude (in the absence of any defenses) that the merger is likely to result in an anticompetitive effect in the relevant market.~~

This memorandum is organized into three ~~The memorandum is I will analyze the prima facie case in four~~ sections:

1. The prima facie case
    a. The relevant product market
    b. The relevant geographic market
    c. Market shares, concentration, and the *PNB* presumption
    d. Additional evidence supporting the prima facie case
    d. Conclusion on the prima face case
2. Downward-pricing pressure defenses
3. Conclusion

1. The prima facie case

a. The relevant product market

The relevant product market in this case is ready-to-serve orange juice.

First, orange juice satisfies the *Brown Shoe* "outer boundaries" test. One brand of orange juice is likely to have a much higher cross-elasticity of demand with another brand of orange juice than with any brand of apple juice given the differences in consumption patterns between the two products. While both orange juice and apple juice are considered by many to be "healthy" drinks, orange juice has a much more acidic taste and is consumed largely by adults and older children. Given the acidic taste, babies do not like orange juice. Apple juice, on the other hand, has a sweet taste and is the drink of choice for babies. Apple juice has only a small following among adults. The own-price elasticity for orange juice is -1.1, with 55 out of 1000 customers switching away from orange juice in response to a 5% increase in price. Even if 100% of the diversion was to apple juice (as opposed to apple juice along with other products), the cross-elasticity of orange juice with apple juice would be relatively low at -1.1 (assuming customers switched gallon for gallon).

The *Brown Shoe* "practical indicia" further support orange as a relevant market. In addition to the product's "peculiar characteristics and uses" given its consumption patterns, orange juice largely requires unique production facilities and has unique production technology. Although Mott's, which currently produces no orange juice, has the ability to switch from apple juice to orange juice production quickly and without significant switching costs (making it an

uncommitted or "rapid" entrant under the Merger Guidelines), Mott's' capacity of 80 million gallons is equal to a little more than 2.1% (=13/648) of current orange juice production. Consequently, 100% of orange juice is produced today on unique production facilities, and even if Mott's were to switch its entire capacity to producing orange juice over 90% of orange juice production would still be on unique production facilities.[1] Finally, the prices of orange juice ($5.00/gallon) and apple juice ($6.00/gallon) differ by 20%. This, together with their low cross-elasticity of demand indicates that they could support different prices under different demand conditions.

Second, orange juice satisfies the hypothetical monopolist test. Here, the manufacturer's price for orange juice across all brands is $5.00/gallon and the marginal cost is $3.00, for a gross margin of $2.00 and a percentage gross margin of 40%. If the hypothetical monopolist loses 55 out of every 1000 gallons sold with a 5% price increase ($0.25), its gross gain on its retained sales would be $0.25 × (1000 – 55) = $236.25 and its gross loss of the diverted sales would be 55 × $2.00 = $110.00. Since the gross gain is larger than the gross loss, a SSNIP of 5% would be profitable for a hypothetical monopolist of orange juice.

Alternative formulation: Orange juice satisfies the hypothetical monopolist test. The critical elasticity ε^* may be calculated from the product grouping's percentage gross margin (m) and the percentage SSNIP (δ):

$$|\varepsilon^*| = \frac{1}{\delta + m} = \frac{1}{.05 + .40} = 2.22.$$

Since the absolute value of the actual own-price elasticity of demand (1.1) is less that the absolute value of the critical elasticity (2.22), a SSNIP of 5% would be profitable for the hypothetical monopolist.

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b. The relevant geographic market

The relevant geographic market is the United States.

At least 94% of all orange juice is branded orange juice sold nationally at a uniform price throughout the country. Courts have held that where the companies in the relevant product market sell their products nationwide at uniform prices, the United States is a relevant geographic market. Moreover, using the hypothetical monopolist test, we know that a hypothetical monopolist could profitably raise prices by 5% across all products across the country. (The math is the same here as in the relevant product market analysis). This confirms that the relevant geographic market is the United States. Although smaller relevant markets may exist within this broader market, if the transaction violates Section 7 in the broader relevant geographic market it, is unnecessary to explore any smaller markets

c. Market shares, concentration, and the *PNB* presumption

Given that the evidence establishes that orange juice sold is the United States is a proper relevant market in which to analyze the transaction, we next need to identify the participants in the

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[1] If Mott's added its 67 million gallons of production to the existing 648 million gallons of orange juice, total orange juice production would be 715 million gallons. Mott's would account for about 9.3% of this expanded production (67/715), so about 90.7% of orange juice would be produced on unique facilities.

market and their respective market shares. The participants in the market include the incumbent firms at their current production levels plus any "uncommitted" entrants, which would be credited with the production level they would have if the relative prices in the relevant market increased by a SSNIP (here, 5%). Mott's is an uncommitted entrant that would switch 20% of its 60 million gallons of production capacity, or 12 million gallons, to orange juice if the price of orange juice were to increase by 5%. The following table gives the resulting market participants and market shares under the Merger Guidelines:

Orange Juice

	Production (million gal.)	Share	HHI
Tropicana	291	44.1%	1944
Coca-Cola (Simply Orange, Minute Maid)	136	20.6%	423
Fresh OJ	136	20.6%	423
OJ Natural	46	7.0%	48
Others (6)	38	5.8%	33
Mott's (uncommitted entrant)	13	2.0%	
	661	100.0%	2873
Delta (2+3)			847
Post			3719
Combined market share		41.2%	

Here, the transaction involves the number 2 firm with a 20.6% revenue share combining with the number 3 firm with a 20.3% revenue share to create a combined firm with a revenue share of 41.2%. The post-merger HHI is 3719, which is highly concentrated under the 2010 Horizontal Merger Guidelines. The change in the HHI (delta) created by the transaction is 847. Ignoring fringe firms, the transaction is a 3-to-2 merger. These numbers are sufficient to predicate the *PNB* presumption under the case law. Moreover, under the Horizontal Merger Guidelines, mergers in markets with a post-merger HHI above 2500 and a delta of 200 or more, as is the case here, "will be presumed to be likely to enhance market power. The presumption may be rebutted by persuasive evidence showing that the merger is unlikely to enhance market power." The market share of the combined firm and the increase in market concentration are sufficient to invoke the *PNB* presumption under judicial precedent and the Merger Guidelines and so establish a prima facie case of the requisite anticompetitive effect under Section 7.

d. Additional evidence supporting the prima facie case

Unilateral effects. First, the transaction threatens competition in the national orange juice market under the unilateral effects theory. Although the orange juice manufacturers each charge $5.00/gallon for their product, the products are differentiated through brand names and reputation and they could charge different prices. Under the Merger Guidelines, the incentive and ability of the merged firm to raise prices can be assessed by looking at the gross upward pricing pressure the merger creates. Gross upward pricing pressure is measured by multiplying the sales diversion ratio times the margin. Here, the evidence shows that each manufacturer's margin is 40%. The sales diversion ratios can be estimated based on market shares. Using this method of estimation, the diversion ratio from Coca-Cola to Fresh OJ is 25.9% (= Fresh OJ's share of 20.6%/(100-Coca-Cola's share of 20.6%)). The diversion ratio from Fresh OJ to Coca-

Cola is also 20.6%, since both firms have the same share. Multiplying these diversion ratios by the manufacturer's margin of 40%, the gross upward pressing pressure index (GUPPI) for both products is 10.4%. Given linear demand and symmetry in prices, costs, margins, and diversion ratios, the price increase in both products predicted by the GUPPI is:

$$\frac{\Delta p_1 *}{p_1} = \frac{\Delta p_2 *}{p_2} = \frac{GUPPI}{2(1-D)} = \frac{0.104}{2(1-0.259)} = 0.07 \text{ or } 7\%.$$

The incentive of the merged firm to raise the price of both Coca-Cola and Fresh OJ brands of orange juice by 7% makes out a unilateral effects theory.

In addition, the new evidence shows that the merger will eliminate the excess capacity of two of the three firms with excess capacity in the market, leaving only Tropicana with excess capacity. Even if Coca-Cola operates at full capacity, Tropicana will now be in a position unilaterally to decrease production without concern that any other orange juice manufacturer could expand output and "fill the hole" to prevent a market price increase. Under these assumptions, Tropicana's residual demand curve is simply the market demand curve minus the (fixed) production of the orange juice producers.[2]

Coordinated effects. Second, the transaction is likely to increase prices under the theory of coordinated effects. The market is already susceptible to oligopolistic coordination premerger:

1. Excluding the fringe firms, there are only three significant players in the market (Tropicana, Coca-Cola, and Fresh OJ), which collectively account for over 85% of the relevant market (including Mott's as an uncommitted entrant but still a fringe firm).

2. Prices have remained at $5.00/gallon over the last three years despite a 15% decrease in demand, indicating significant tacit (if not express) coordination to reduce production in order to maintain prices. Indeed, the new evidence on capacity utilization shows that the Big Three have been systematically reducing their aggregate production by about 5.4% per year to maintain prices at $5.00/gallon in the wake of falling demand, while the other firms continue to produce at full capacity.

The merger will increase the preexisting incentives and ability to engage in successful tacit collusion by removing the third largest firm as an independent decision maker in the market, leaving only two significant firms in the market (Tropicana and Coca-Cola, together comprising over 85% of postmerger production. It will also remove significant excess capacity from the market, thereby more closely aligning the interests of Tropicana and Coca-Cola to tacitly coordinate their production decisions.

e. Conclusion on prima facie case

The evidence in the investigation establishes that the relevant market is orange juice sold in the United States. Within this relevant market, the *PNB* presumption applies to establish a presumption of anticompetitive effect. The presumption is further strengthened by evidence

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[2]   *Note to students*: This is a somewhat atypical theory of anticompetitive harm in that the actor that would be responsible for the output reduction (in addition to that created by the inability of the merged firm to cover all of its premerger production) is Tropicana, a third party. Antitrust theories of anticompetitive harm are flexible, as the 2010 Horizontal merger Guidelines point out, and any theory that concludes that customers are likely to be harmed and is supported by the evidence is a cognizable theory under Section 7.

showing that the merger is likely to be anticompetitive under both the unilateral effects and coordinated effects theory. This establishes a prima facies Section 7 case. The prima facies case does not require the staff to anticipate and rebut the merging parties' downward pricing pressure defenses

2. Downward-pricing pressure defenses

The parties' defenses fail under judicial precedent and the Merger Guidelines.

When, as here, the anticompetitive concern is higher prices postmerger, to be a defense the efficiencies must generate sufficient downward pricing pressure to offset the upward pressure resulting from the merger's reduction of competition. The merging parties offer two downward-pressure defenses to the transaction: efficiencies and output expansion.

Efficiencies. First, the Merger Guidelines recognize an efficiency defense when the efficiencies will negate the anticompetitive effect shown in the proof of the prima facie case. Courts have been more cautious in recognizing the validity of the principle of an efficiencies defense because of statements in earlier Supreme Court cases (*Brown Shoe* and *Procter & Gamble*), but have analyzed efficiencies defenses assuming but not deciding that the defense is cognizable. Consistent with the Merger Guidelines, our position in court should be that an efficiencies defense does exist notwithstanding the earlier Supreme Court cases but that the merging parties have not made out that defense here. We should also take the position, consistent with the Merger Guidelines, that because a profit-maximizing firm will set prices and output so that its marginal revenue will equal its marginal cost, only changes in marginal costs resulting from the merger will generate downward-pricing pressure on the merged firm's prices.

Here, all of the cost savings the merging parties say will result from the merger—a reduction in annually recurring overhead costs by consolidating management, back office, sales operations, and production facilities—are fixed costs that will not affect marginal cost. Fixed cost savings are not cognizable efficiencies under the Merger Guidelines. There is no judicial precedent on point, so we will have to establish this principle to the satisfaction of the court.

Even if the court were to recognize fixed cost savings as a cognizable efficiency in this case, however, we should argue that the merging parties have failed to satisfy their burden of production under step 2 of the Baker Hughes burden-shifting approach since they have not explained, much less proven, that their fixed cost savings will have any effect on the prices they charge. Even if the court finds that the efficiencies here will have some downward effect on the merged firm's price, we should also take the position that the merging parties have not satisfied their burden of production since they have not presented any evidence that would allow the court to find that this downward-pressure will offset the upward pricing pressures from the unilateral and coordinated effect anticompetitive harm resulting from the merger.

Finally, by the defendants' own account, some of the merger's cost savings will result from a reduction in output as the merged firm shuts down the Fresh OJ plants and shifts production from to the Coca-Cola plants. However, since Coca-Cola only has 91 million gallons of excess capacity (=227-136) and Fresh OJ's production requires 136 million gallons of capacity, Coca-Cola will fall short of replacing Fresh OJ's production by 45 million gallons (=136-91). Absent some compensating expansion by some other firm in the market, this shortfall will increase market prices by approximately 6.7%:

$$\frac{\frac{\Delta q}{q}}{\frac{\Delta p}{p}} = -1.1 \rightarrow \frac{\Delta p}{p} = \frac{\frac{\Delta q}{q}}{-1.1} = \frac{\frac{-45}{661}}{-1.1} = 6.7\%$$

This (gross) output reduction resulting from the merger will increase prices and is anticompetitive, and consequently any cost savings resulting from that reduction should be excluded from the efficiency analysis.

The court should reject the merging parties' efficiency defense.

Output expansion. Second, the merging parties argue that even though their combined production will fall short by 45 million gallons in the first year, Tropicana has more than sufficient excess capacity to make up any shortfall or, for that matter, any attempt by the merged firm to anticompetitively reduce output in order to raise prices. This defense should fail on the merits. While Tropicana does have more than enough excess capacity to make up the shortfall, as the coordinated effects analysis above shows, Tropicana's incentive, if anything, is to *decrease* production postmerger, not increase it. The merging parties have presented no evidence to the contrary. Moreover, even the merging parties have failed to satisfy their burden of persuasion of producing evidence—as opposed to just an assertion—that Tropicana would have the incentive to expand production in an amount sufficient to makeup the production reduction resulting from the merger ("fill the hole") and hence offset the upward pricing pressure resulting from the merger's unilateral and coordinated anticompetitive effects.

Very optional (but read it anyway):[3] If you are really into this, you can calculate what Tropicana's postmerger profit-maximizing production would be. There are three steps: (1) derive the industry inverse demand curve, (2) derive Tropicana's residual inverse demand curve, and (3) find Tropicana's profit-maximizing production level by setting its marginal revenue equal to its marginal cost.

Step 1. Derive the industry demand curve

The hypothetical says that all demand curves are linear at all points of interest, so the inverse demand curve is linear. Say the industry inverse demand curve is of the form $p = a + bQ$, where p is the market-clearing price, a is the y-intercept of the inverse demand curve, b is the slope of the inverse demand curve, and Q is the market quantity. We also know the own-elasticity of the aggregate demand curve is -1.1, so at the premerger price and aggregate production:

$$\varepsilon = -1.1 = \frac{\Delta Q}{\Delta p}\frac{p}{Q} = \frac{1}{b}\frac{p}{Q} = \frac{1}{b}\frac{5}{648},$$

where $b = \frac{\Delta p}{\Delta Q}$, which is the slope of the demand curve. Solving, b = -0.00701459.[4] Now we can substitute a into the inverse demand curve and solve for *a* (again using premerger price and aggregate output):

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[3] You will not be responsible for doing anything like this on the exam.

[4] You can do the arithmetic manually, but it is much better to use a spreadsheet or, even better, an algebra calculator on the web (MathPapa works just fine).

$$p = 5 = a - 0.007015q = a - (0.007015)(648)$$

So $a = 9.545454545$. Therefore, the aggregate demand curve (which does not change postmerger) is:

$$p = 9.545454545 - 0.00701459Q$$

Step 2. Derive Tropicana's residual inverse demand curve

Under the conditions of the hypothetical, postmerger all firms except Tropicana will produce at their maximum capacity. Collectively, then, these firms will produce 311 million gallons. Tropicana's inverse demand curve is then:

$$p = 9.54545455 - 0.00701459(q_T + 311)$$
$$= 7.363917 - 0.00701459q_T,$$

where q_T is Tropicana's production level.

Step 3. Select q_T so that Tropicana's marginal revenue is equal to its marginal cost

Tropicana's revenue r_T is:

$$r_T = pq_T$$
$$= (7.363917 - 0.00701459q_T)q_T$$
$$= 7.363917q_T - 0.00701459q_T^2$$

So Tropicana's marginal revenue mr_T is:

$$mr_T = 7.363917 - (2)(0.00701459)q_T$$
$$= 7.363917 - 0.014029q_T.$$

Set mr_T equal to Tropicana's marginal cost of 3 and solve for the profit-maximizing production level q_T*:

$$7.363305 - 0.014029q_T^* = 3,$$

or $q_T* = 311$ million gallons, an *increase* of 20 million gallon above its premerger production. Industry production would be Tropicana's production of 311 million gallons plus the 311 million gallons collectively produced by the other firms, so that $Q = 622$ million gallons, or only 26 million gallons less than the aggregate level of premerger production. At $Q = 622$ million gallons, the market-clearing price postmerger would increase to $5.18, or 3.6% above the premerger price.

What is happening here is that, with the other firms in the market output constrained, Tropicana reaps 100% of the profit associated with its output expansion. Given the particular parameters in the hypothetical, Tropicana has an incentive to increase output, although not by enough to offset the output reduction caused by the merger. A different set of parameters could have made an output reduction by Tropicana the profit-maximizing strategy.

This analysis shows that the merging parties' output expansion argument is better than it first appears, although there is still a (minor) aggregate output reduction and a (not overwhelming) price increase. If the cost savings to the merging parties is significant (as the hypothetical suggests that it is), a court could very well decide that from a social perspective is worth the

small increase in price, especially since the merged company will have excess capacity again within a year and a half or so. The way the court would likely write an opinion denying the preliminary injunction is to find, given the limitations of the model and the data, that a 3.6% price increase cannot be say to be significantly different than zero.[5] On the other hand, if the court was convinced that the merger was anticompetitive, it would have been easy to write an opinion supporting that conclusion notwithstanding the low price increase.[6]

3. Overall conclusion

The FTC has a strong prima facie case. The *Brown Shoe* "outer boundaries" and "practical indicia" factors point strongly to an orange juice only product market, which is further supported by the critical loss analysis under the hypothetical monopolist test. Similarly, the commercial realties and a critical loss analysis point strongly to a nationwide geographic market. Within this nationwide market for orange juice, the market share and HHI statistics (adjusted for Mott's probable expansion into orange juice) are sufficient to predicate the PNB presumption under both judicial precedent and the Merger Guidelines. Finally, the Commission's prima facie case is further strengthened by a unilateral effects merger simulation using diversion ratios and margins showing a postmerger price increase in both Coca-Cola's and Fresh OJ's orange juice products of about 7% and a coordinated effects theory showing that the merger is likely to decrease market production directly by about 7 percent (45 million gallons out of 611 premerger gallons). Moreover, the merger would eliminate all of the excess production capacity from two of the only three firms that had excess production capacity premerger. With all firms other than Tropicana capacity-constrained, Tropicana would be free to further reduce its production in order to raise market prices even higher.

The merging parties offer two downward-pricing pressure defenses: efficiencies and output expansion. Their efficiencies defense fails because their efficiencies result from fixed cost savings that produce no downward-pricing pressure and because, even if the efficiencies could produce some downward-pricing pressure, the merging parties have produced no evidence of the magnitude of this pressure or that the downward pressure would be sufficient to offset the upward pricing pressure resulting from the merger from the unilateral and coordinated anticompetitive effects just discussed. The output expansion defense also fails because they rely

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[5] *Note to students*: This exercise also shows the need for the instructor to work through the problem completely before giving out a homework assignment.

[6] *Note to students*: As we have discussed in class, a critical piece of evidence—which is missing from the hypothetical but surely would have been investigated by the staff—is what Tropicana says it would do with its production level if the merger were allowed to go through. If Tropicana was well counselled, it would have said that it would increase its output, not just by 20 million gallons but by 45 million gallons! Consider the following:

> Tropicana's premerger profits producing 291: ($5-$3) x 291 = $582 million
> Tropicana's postmerger profits producing 311: ($5.18-$3) x 311 = $687 million
> Tropicana's postmerger profits producing 336 ("filling the hole"): ($5-$3) x 336 = $672 million

So even through Tropicana's would maximize its profit at 311 million gallons postmerger, if that was not enough to convince the FTC and the court to let the merger go through, Tropicana should commit to increase its production to 336 million gallons (or even more) to completely fill the production hole created by the consolidation of the Fresh OJ plants into the Coca-Cola plants. Although Tropicana would not make the maximum profits it could theoretically obtain, it would still make $90 million more with the merger than without it.

solely on an output expansion by Tropicana, which while possessing sufficient excess production capacity to offset any (gross) output reduction resulting from the merger, has an incentive to reduce production, not increase it.

The FTC should prevail on the merits in court.