MERGER ANTITRUST LAW

LAW 1469
Georgetown University Law Center
Fall 2025

Tuesdays and Thursdays, 3:30 pm – 5:30 pm
Dale Collins
wdc30@georgetown.edu
www.appliedantitrust.com

CLASS 5 HOMEWORK ASSIGNMENT

Instructions

CORRECTED ANSWER TO PROBLEM 4

Submit by email no later than 3:30 pm on Tuesday, September 9
Send to wdc30@georgetown.edu
Subject line: Merger Antitrust Law: Assignment for Class 5

Solve the HMT problems. Feel free to work out the problems using pencil and paper and send me a photo of your work.

Assignment

Problem 0. Explain the mechanics of the HMT using the uniform SSNIP implementation.[1]

The hypothetical monopolist test (HMT) was introduced in the 1982 Merger Guidelines to define relevant markets. It asks whether a hypothetical monopolist controlling all sales within a candidate market—defined by proposed product and geographic boundaries—could profitably impose a "small but significant and non-transitory increase in price" (SSNIP), typically 5%, over prevailing prices. If the price increase would be profitable, the candidate market satisfies the HMT and may be considered a relevant market. If not, the candidate market fails the test and should be expanded. The idea is that a relevant market for antitrust purposes must be one where a monopolist could exercise market power and profitably raise prices. If the candidate market would not permit a hypothetical monopolist of all sales in the market to exercise market power, then the candidate market fails to include all the significant price-constraining products and needs to be expanded.

A uniform SSNIP implementation of the HMT requires the hypothetical monopolist to increase the prices of all products in the candidate market by the same percentage amount.

The "brute force" method of performing a uniform SSNIP HMT requires knowledge of four variables:

The dollar margin ($\$m$)
The dollar SSNIP ($SSNIP)
Total pre-SSNIP sales in the candidate market (q)
Marginal sales lost due to the SSNIP (Δq)

three calculations:

[1] A *uniform SSNIP implementation* of the HMT is when the prices in the candidate market are all increased by the same percentage SSNIP. In Unit 4, we will examine the *one-product SSNIP implementation* of the HMT introduced in the 2010 Merger guidelines.

The gross profit gain from inframarginal sales = \$SSNIP × (q – Δq)
The gross profit loss from foregone marginal sales = \$$m$ × Δq
The net profit gain = The gross profit gain from inframarginal sales
minus the gross profit loss from foregone marginal sales

and a comparison:

If the net profit gain is positive, the candidate market satisfies the HMT
If the new profit gain is negative, the candidate market fails the HMT

Problem 1. TreeTop and AppleWay together sell 60 million bottles of apple juice annually—35 million by TreeTop and 25 million by AppleWay—out of 100 million bottles sold across all apple juice brands. TreeTop and AppleWay both sell for \$2.50 per bottle and earn a gross margin of 40%. If a hypothetical monopolist controlling all apple juice brands raised prices by 5% to \$2.63 per bottle, 13 million bottles would divert to other fruit juices such as orange, cranberry, or grape juice, whose prices remain unchanged. Does the candidate market of all apple juice satisfy the HMT?

Data			Analysis			Result		
Price (p)	\$2.50	per bottle	**Loss on marginal sales**					
Percentage gross margin	40%		Δq	13.00	million	**Net gain**	-\$2.1250	million
\$margin (\$$m$)	\$1.00	per bottle	\$$m$	\$1.00		HMT	FAILED	
%SSNIP (%Δp)	5.00%		Gross loss	\$13.00	million			
\$SSNIP (\$$\Delta p$)	\$0.1250	per bottle						
Quantity (q)	100	million	**Gain on inframarginal sales**					
Unit marginal loss (Δq)	13.00	million	q - Δq	87.00	million			
			\$SSNIP	\$0.1250				
			Gross gain	\$10.88	million			

Since the 5% SSNIP would result in the hypothetical monopolist's profits decreasing by \$2.125 million, the SSNIP would be unprofitable and the candidate market of all apple juice fails the HMT. Note that this problem illustrates that market definition through the HMT is a distinct analytical step that precedes the analysis of competitive effects. The detailed information about TreeTop and AppleWay's specific market shares is irrelevant when testing whether all apple juice constitutes a relevant market.

Problem 2. Kraft is considering acquiring Hershey's premium chocolate bar business. The merging parties argue that the relevant product market should include not only Kraft and Hershey but also other premium chocolate bar producers such as Lindt, Godiva, Ghirardelli, and Tony's Chocolonely. The FTC staff believes that Kraft and Hershey have been too aggressive in including these other producers, which the staff views as makers of superpremium chocolate bars with relatively low cross-elasticities with the products of the merging parties. The FTC wants to test a narrower candidate product market consisting of only Kraft and Hershey chocolate bars. The Kraft and Hershey brands both sell for \$2.00 per bar, with a variable cost of \$1.20, and together account for 50 million bars in annual sales. The superpremium brands are priced at \$2.50, with a variable cost of \$1.70, and collectively sell another 50 million bars. If a hypothetical monopolist controlling only Kraft and Hershey raised the price by 5% to \$2.10 per

bar, the hypothetical monopolist would lose 2.5 million bars, all to either superpremium or generic brands. Does the candidate market of Kraft and Hershey chocolate bars satisfy the HMT?

Data			Analysis			Result		
Price (p)	$2.00	per bar	**Loss on marginal sales**					
Costs (c)	$1.20	per bar	Δq	2.50	million	**Net gain**	$2.75	million
%SSNIP (%Δp)	5.00%		$\$m$	$0.80		HMT	PASSED	
$SSNIP ($\Δp)	$0.10	per bar	Gross loss	$2.00	million			
$margin ($\m)	$0.80	per bar						
Quantity (q)	50	million	**Gain on inframarginal sales**					
Percentage marginal loss (%Δq)	5.00%		$q - \Delta q$	47.50	million			
Unit marginal loss (Δq)	2.5	million	$SSNIP	$0.10				
			Gross gain	$4.75	million			

Because a hypothetical monopolist controlling only Kraft and Hershey chocolate bars would profit by $2.75 million from a 5% price increase, the candidate market passes the HMT. Again, this problem illustrates that information may be included in the hypothetical that is irrelevant to the HMT.

Problem 3. Fresco Farms is considering acquiring PureHarvest, one of its competitors in the refrigerated orange juice market. The two firms together sell 80 million gallons of orange juice annually—50 million by Fresco and 30 million by PureHarvest—out of 120 million gallons sold across all brands. The average price of refrigerated orange juice is $4.00 per gallon, and the average gross margin is 40%. Industry analysts estimate that the own-price elasticity of demand for refrigerated orange juice as a whole is –1.2. Would a hypothetical monopolist controlling all refrigerated orange juice brands find it profitable to impose a 5% price increase? Does refrigerated orange juice satisfy the HMT?

Data			Analysis			Result		
Price (p)	$4.00	per gallon	**Loss on marginal sales**					
Percentage gross margin	40.00%		Δq	7.20	million	**Net gain**	$11.04	million
$margin ($\m)	$1.60	per gallon	$\$m$	$1.60		HMT	PASSED	
%SSNIP (%Δp)	5.00%		Gross loss	11.52	million			
$SSNIP ($\Δp)	$0.20	per gallon						
Quantity (q)	120	million	**Gain on inframarginal sales**					
Own-elasticity (ε)	-1.2		$q - \Delta q$	112.80	million			
Percentage marginal loss (%Δq)	6.00%		$SSNIP	$0.20				
Unit marginal loss (Δq)	7.2	million	Gross gain	$22.56	million			

Because a hypothetical monopolist controlling all refrigerated orange juice sales would profit by $11.04 million from a 5% price increase, the candidate market passes the HMT. Not that in this problem, the value of the foregone marginal sales had to be calculated from the own-elasticity of demand for refrigerated orange juice. Recall the definition of own-elasticity of demand:

$$\varepsilon = \frac{\%\,\Delta q}{\%\,\Delta p},\ so\ \%\,\Delta q = \varepsilon\,\%\,\Delta p = 1.2 \times 5\% = 6\%$$

which implies that Δq = 6% × 120 million =7.2 million gallons.

Problem 4. FreshMart is considering acquiring GreenValley, which also operates two full-service grocery stores in the town of Collegeville. The merged firm would control 4 of the 10 full-service supermarkets in Collegeville and account for approximately 40% of local grocery sales. Each store sells an average grocery basket for $100, with a gross margin of 50%. Total annual grocery sales in Collegeville are 1 million baskets. If a hypothetical monopolist controlling all 10 Collegeville stores raised prices by 5% to $105 per basket, 100,000 baskets would divert to stores in the nearby town of Fairfax, where prices remain unchanged. Does the candidate geographic market consisting of Collegeville alone satisfy the HMT?

Data		Analysis		Result	
Price (p)	$100.00 per basket	**Loss on marginal sales**			
Percentage gross margin	50.00% per basket	Δq	0.10 million	**Net gain**	-$0.50 million
$margin ($\m)	$50.00 per basket	$\$m$	$50.00	HMT	FAILED
%SSNIP (%Δp)	5.00%	Gross loss	$5.00 million		
$SSNIP ($\Δp)	$5.00 per basket				
Quantity (q)	1.00 million	**Gain on inframarginal sales**			
Unit marginal loss (Δq)	0.10 million	$q - \Delta q$	0.90 million		
	CORRECTED	$SSNIP	$5.00		
		Gross gain	$4.50 million		

Even with the merged firm controlling only 40% of the market, the hypothetical monopolist test is applied to all 10 stores in Collegeville. A monopolist controlling those 10 stores would lose $500,000 if it attempted a 5% price increase, making the SSNIP unprofitable. Therefore, Collegeville alone fails the HMT and is not a valid relevant geographic market.

Problem 5. Praxon Gas and Oxynex Supply, the only two suppliers of industrial gases located in the town of Ashford, propose to merge. Industrial gas suppliers deliver their products directly to the customer's location under contract. The merging parties argue that the relevant geographic market must include Brookfield, the nearest town with its own industrial gas supplier, located 25 miles away. The FTC disagrees and wants to test whether Ashford alone constitutes a relevant geographic market. Industrial gases are typically sold under long-term contracts for on-site delivery, with an average price in Ashford of $10,000 per customer per year and a gross margin of 40%. Praxon and Oxynex together serve 120 customers in Ashford. If a hypothetical monopolist controlling all industrial gas sales in Ashford raised prices by 5%, 20 customers would switch to Brookfield-based suppliers or adopt alternative gas-handling systems. Does the candidate geographic market consisting of Ashford alone satisfy the HMT?

Data			Analysis		Result	
Price (p)	$10,000	per cust.	**Loss on marginal sales**			
Percentage gross margin	40%		Δq	20	**Net gain**	-$30,000
$margin ($\m)	$4,000	per cust.	$\$m$	$4,000	HMT	FAILED
%SSNIP ($\%\Delta p$)	5.00%		Gross loss	$80,000		
$SSNIP ($\Δp)	$500	per cust.				
Quantity (q)	120	customers	**Gain on inframarginal sales**			
Unit marginal loss (Δq)	20	customers	$q - \Delta q$	100		
			$SSNIP	$500		
			Gross gain	$50,000		

A hypothetical monopolist controlling all industrial gas sales in Ashford alone would lose $30,000 by imposing a 5% price increase. Technically, because the SSNIP would not be profitable, Ashford fails the Hypothetical Monopolist Test. However, a loss of $30,000 is relatively modest in the context of the market as a whole. In practice, where the HMT yields borderline results like this one, courts are likely to place less weight on the test and instead rely more heavily on the *Brown Shoe* practical indicia to assess whether Ashford constitutes a relevant geographic market

If you have any questions, send me an email.