GEORGETOWN UNIVERSITY LAW CENTER
EXAMINATION IN MERGER ANTITRUST LAW
TAKE HOME EXAM
(5 HOURS)

Professor Dale Collins

Date Exam Opens: Tuesday, December 5, 2023, at 8:30 am. ET
Date Exam Closes: Thursday, December 14, 2023, by 6:30 pm. ET

INSTRUCTIONS:

1. This is a TAKE HOME mode exam.
2. This five (5) hour exam will be available beginning at 8:30 am ET on Tuesday, December 5, 2023, and must be submitted five (5) hours after it is downloaded but no later than 6:30 pm ET on Thursday, December 14, 2023. The exam must be downloaded and submitted via www.exam4.com. Do **not** use the Exam4 software to type and submit your answers. **Write your answers to both questions as a *single* Word document**. When you are ready to submit your exam, you will upload the document via the www.exam4.com website where you downloaded the exam. Once an examination is submitted for grading, no amendments or supplements will be permitted or accepted.
3. This exam is final. No clarifications or corrections will be provided. If you are convinced that there is an error, inconsistency, or omission in the exam, please identify the problem, give your reasons why you believe there was a mistake, provide what you believe the correct information should be, and write your answer accordingly. If you have good reasons for believing there was a mistake in the problem (even if I disagree) and provide a sensible correction in the context of the hypothetical as a whole, I will accept the correction and grade your paper accordingly.
4. Exams at the Law Center are graded on an anonymous basis. The Student Disciplinary Code provides that the "unauthorized breach of anonymity in connection with a blind-graded examination" is a disciplinary violation. Therefore, be sure that you do not reveal your identity as the author of an examination in your answers themselves, in any communications with the professor, or otherwise discuss the substance of the exam with your professor(s) or with any other student from the time the exam is first administered until after grades are published.
5. You may consult any written source, including the reading materials, class notes, cases, outlines (commercial or otherwise), books, treatises, the Internet, Westlaw, and Lexis-Nexis. You may use Ctrl-F or search engines on your computer. Citations to cases or other primary sources are not required or particularly desired, although you may find reference to a case that we covered helpful at times to make your analysis more compelling or to shorten the exposition. Citations to secondary sources will *not* be helpful or appreciated. You may use calculators or spreadsheets as well as any spreadsheet templates you have prepared in advance.
6. As we discussed in class, you may cut and paste short passages ***from materials you have collected in a single document*** to introduce a concept, a rule of law, a legal principle, or an economic proposition or formula ("boilerplate"). You may include quotes from cases in the materials you create for this purpose, but if you do so, prepare the quote and cite the case (in proper Blue Book form) as you would in a brief. You are prohibited from

copying/cutting and pasting any other prewritten text (written before starting your exam) into your take-home exam responses, regardless of who authored the text.

7. Students who elect to print out take-home exam questions must destroy all exam documents after they have submitted their exam responses.
8. This exam consists of one question. The question presents a hypothetical fact situation that you are asked to analyze from a particular perspective (e.g., a special assistant to the Assistant Attorney General making a recommendation on the disposition of an investigation, a private practitioner providing advice on the antitrust risks and likely outcome of a proposed transaction, a law clerk preparing an initial analysis of the application of the law to the evidence for a judge). Be sure that you write from the assigned perspective *and* answer the question(s) asked.
9. Grading will be on the completeness, coherency, and persuasiveness of your answers to the questions presented and not on whether you reach the same conclusion as I did. Ideally, your answer to the question will persuade me that you have correctly identified the issues, properly analyzed them in the context of the prevailing legal standards and the facts presented, and advised a sensible course of action. I have no doubt that some of you will persuade me to go one way on a question, while others of you will equally persuade me to go a different direction on the same question.
10. Present your analysis in a well-organized, linear, and concise manner. Think about your answers before writing. *Remember Pascal's apology*: "I am sorry that this was such a long letter, but I did not have the time to write you a short one." Clarity of thinking and exposition are much more important than throwing in the kitchen sink. Penalties will be levied for excessive length, verbosity, lack of organization, or the inclusion of irrelevant boilerplate.
11. If asked to write a memorandum in any capacity, you may start the answer with the first sentence of the memorandum. There is no need to include a privilege legend, "To" and "From" lines, or a subject line. Also, you may refer to a table in your answer by the table number in the question.
12. If you are asked to write a memorandum as an attorney in a law firm at a confidential phase of the transaction, it is *not* necessary or desirable to use code names for the transaction or the parties. This is an exception to the usual rules of practice.
13. You should assume that federal subject matter jurisdiction exists and that it is unnecessary to address any jurisdictional questions in your answers. Also, in the areas of interest all demand curves are linear and all marginal costs are constant.
14. If the hypothetical gives prices or costs for a group of products as being "around" a given number, you should treat that number as the arithmetical average with only small variations around the mean, and use that number in any formula. (This is designed to simply the math and substitutes for the less realistic assumption that all prices have coincidentally converged to the same number, notwithstanding their differentiation.)[1]
15. If there is an inconsistency between a number given in a table and supposed the same number given in the text, use the number in the table.
16. It should go without saying that, outside of this examination, you should not believe everything (or anything) in the statement of any hypothetical fact situation. I have taken considerable liberties in fashioning the problems and have totally ignored reality whenever it

[1] When the average has only small variations around the arithmetical mean, the formulas work reasonably well in practice using the average.

was convenient. It will be in your best interest to unlearn the "facts" in the questions as soon as possible after you finish the examination.

17. The hypothetical facts should be complete in the sense that they present what is known at the time the analysis is requested. As in life, some information you would like to have may simply not be available. Analyze the facts as they are presented in the question.
18. Since this is an examination, I will not hold out hope that you find it enjoyable, but I do hope that you find it intellectually stimulating. I have sought to make the questions challenging, but you should be well-prepared to tackle them.

This exam consists of sixteen (16) pages, including these three (3) cover pages. Please be sure your exam is complete.
Please be sure that you use your exam number (not your student ID number or social security number).

HONOR STATEMENT

BY SUBMITTING THIS EXAM THROUGH EXAM4, I AFFIRM ON MY HONOR THAT I AM AWARE OF THE STUDENT DISCIPLINARY CODE, AND (I) HAVE NOT GIVEN NOR RECEIVED ANY UNAUTHORIZED AID TO/FROM ANY PERSON OR PERSONS, (II) HAVE NOT USED ANY UNAUTHORIZED MATERIALS IN COMPLETING MY ANSWERS TO THIS TAKE-HOME EXAMINATION, AND (III) HAVE NOT WORKED MORE THAN FIVE (5) HOURS ON THIS EXAM.

ENGINEERED WOOD PRODUCTS MERGER

You are an attorney in the Healthcare and Consumer Products Section (HCP) of the Antitrust Division. HCP is conducting a second request investigation of the pending acquisition by WoodFusion Technologies, Inc. (WFT) of Delta Mills Corporation for $280 million in cash. Both companies manufacture medium density fiberboard (MDF) and particleboard—two types of engineered wood products—in the Southeastern United States.

Although the investigation is not yet complete, Joyce Davenport, the HCP section chief, has asked you to prepare a memorandum analyzing the likelihood that the Division could prevail in court to block the transaction under Section 7 of the Clayton Act on the facts that the investigation has revealed to date. In particular, Ms. Davenport would like the memorandum to address the strength of the Division's prima facie case, the strength of any defenses the parties have (including any defenses you can anticipate that the parties have not raised), what additional questions, evidence, and competitive analysis the Division should explore as it continues the investigation to strengthen its case further. Finally, Ms. Davenport would like your analysis on whether the merging parties could restructure the deal in any way and "litigate the fix" if the Division challenges the transaction in court.

To date, the investigation has developed the facts from publicly available information (including third-party market research reports), information received from the merging parties, and preliminary interviews with customers and competitors. The Composite Panel Association (CPA) and the American Plywood Association (APA) have been especially helpful in supplying averaged data, but the investigating staff has not obtained detailed information on the operations of individual companies.

Here are the facts the investigation has developed to date:

Engineered wood products. Engineered wood products are manufactured from wood fibers, chips, strands, or veneers bound together with adhesives into boards, panels, or other structural forms. Unlike solid wood cut directly from trees for use in its natural form, engineered woods use a controlled manufacturing process that optimizes the product for strength, workability, and uniformity with consistent, predictable properties. Engineered wood tends to be more uniform in strength and size, cost-effective, and adaptable to specific performance requirements than solid wood. These properties make engineered wood a versatile and widely utilized material in home and office furnishings and in construction. Engineered wood, increasingly refined in quality, can mimic the aesthetic qualities of solid wood through the application of veneers and finishes[2]. However, in applications such as cabinetry, it typically falls short of solid wood in aspects of longevity and the singular charm inherent to natural wood aesthetics.

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[2] *Veneers* are thin slices of real wood or wood-like material bonded to the surface of the engineered wood product using adhesives by the manufacturer of the cabinet, furniture piece, or other final product. The veneer provides the appearance of natural wood, giving the product a more expensive and aesthetically pleasing look. It allows engineered wood such as MDF or particleboard to mimic the appearance of various wood grains and colors, enhancing the overall design and appeal of the final product while maintaining cost-effectiveness.

Laminates are synthetic materials bonded to the surface of the engineered wood product like veneers. Laminates are typically composed of layers of paper or other synthetic materials, which are impregnated with melamine, phenolic, or similar resins and then fused under high pressure and temperature to form a hard, durable surface layer. The uppermost layer of these laminates typically incorporates decorative elements, imitating the appearance of natural wood, single-color hard surface, or other textures.

The industry, trade associations, and third-party market research reports recognize three distinct types of engineered wood products: medium density fiberboard (MDF), particleboard, and plywood. Within each type, products are homogeneous and conform to standards published by the Department of Commerce and the American National Standards Institute (ANSI).[3] Specialized equipment is required to produce each type of engineered wood, and equipment cannot switch from producing one engineered product to another. However, the production technology is mature, and all plants that make the same type of wood have similar marginal costs.

Medium density fiberboard. MDF is an engineered wood product formed by breaking down hardwood or softwood residuals into wood fibers, combining them with wax and resin adhesives, and pressing the fibers into panels under high temperature and pressure. The result is a homogeneous, dense, and durable composite wood product. MDF is roughly 20% heavier than particleboard and 30% heavier than plywood. Unlike particle board, MDF accepts paint without undue absorption or undesirable warping. MDF is extensively used for cabinetry, shelving, and decorative moldings due to its affordable cost, machinability, stability, and smooth surface suitable for veneering and laminating. Because MDF is so dense, it is very heavy and unsuitable for large hanging cabinets. MDF has replaced plywood for many uses. Plywood, however, still maintains a significant advantage over MDF, where strength, light weight, or moisture resistance are important. MDF sells at around $0.90 per square foot at the manufacturer's level and has marginal costs of around $0.65 per square foot.[4]

Figure 1
Medium Density Fiberboard

The manufacture of MDF involves a production line requiring specialized equipment to refine and dry the wood fibers, blend in adhesives, form the panels, and finish the boards. Essential machines include chippers, grinders, and refiners to break down wood fiber; flash tube dryers to reduce moisture content; blenders to mix in resin binders and wax; forming machines to lay the fibers into mats; pressing systems with heated platens to compress and cure the boards; saws and sanders to trim and finish the panels; and conveyors to transport materials between processes. The capital investment in machinery is substantial—$150 million or more—for an MDF

[3] **Note to students**: To keep the hypothetical tractable, this problem assumes that there is only one type of engineered wood product within each category. In fact, there are many different grades and thicknesses of each type of engineered wood.

[4] Average prices and margins are obtained from trade association data. The investigation has not yet obtained data from suppliers on their individual operations.

production facility, which requires proper process control and integration of operations to produce extremely high volumes of uniform, engineered wood boards. The specialized equipment enables efficient, automated production of MDF at an industrial scale. The average capacity utilization of MDF plants in the Southeastern United States is around 75%. No new MDF plants have been built in this region in over 20 years.

Particleboard. Particleboard is an engineered wood product fabricated from wood residuals, including sawdust, chips, and shavings bonded with resin adhesives and compressed into panels at high temperatures and pressures. Particleboard is not as dense or strong as MDF, making it less suitable for weight-bearing applications. MDF also has superior screw-holding capabilities, more consistent machinability, and a more consistent surface for accepting finishes like veneers and laminates. Unlike MDF, particleboard is vulnerable to moisture, which can cause expansion and compromise its structural integrity. Particleboard also is not ideal for bending or molding, as it is more brittle than MDF and can be prone to breaking under stress. Particleboard, however, remains a popular choice where cost savings are a priority, and the demands on strength and moisture resistance are relatively low. It is commonly used to produce budget-friendly furniture, flooring, kitchen cabinets, partition walls, and decorative moldings. Particleboard sells at around $0.60 per square foot at the manufacturer's level and has marginal costs of around $0.45 per square foot.

Figure 2
Particleboard

Particleboard production utilizes specialized, automated, high-volume production lines across the manufacturing stages. Wood residuals are reduced to fine particles via chippers, hammer mills, and refiners. Particles are then dried in rotary dryers to the required low level of moisture content. Dried particles are blended with liquid resin adhesives in motorized mixers and conveyed to forming stations where distribution heads or conveyor systems deposit the particles into a layered mat. Hydraulic hot presses compress the mat under high temperatures and pressures to cure the resins and fuse the wood particles into a cohesive, dense panel. After pressing, trim saws cut boards to size, and sanders provide finishing. Precise process control for temperature, pressure, and resin metering ensures manufactured boards meet target density, strength, and dimensional specifications. The machinery alone in a minimum efficient scale particleboard plant would cost around $100 million, somewhat less than an MDF plant for the same production capacity. The average capacity utilization of particleboard plants in the Southeastern United States is around 61%. No new particleboard plants have been built in this region in over 25 years.

Plywood. Plywood is an engineered wood prized in construction and furniture for its strength and versatility. It comprises multiple thin layers, or "plies," of wood veneer glued together in alternating grain directions perpendicularly. The cross-graining greatly enhances plywood's strength, resistance to warping, and ability to distribute forces from nailing and screwing to avoid splitting evenly.

Figure 3
Plywood

Plywood significantly outperforms both MDF and particleboard in terms of strength, making it the preferred choice for load-bearing and structural applications. Its layered construction imparts superior durability while contributing to a lighter weight than the denser composition of MDF and particleboard. This weight advantage makes plywood easier to handle and install. Furthermore, plywood exhibits enhanced moisture resistance; its layered structure and adhesives protect significantly against swelling and degradation in damp conditions. In contrast, particleboard and, to a lesser degree, MDF are more prone to moisture damage. While MDF is favored for its smooth, uniform surface ideal for detailed aesthetic work, and particleboard is valued for cost-effectiveness in non-structural uses, plywood's strength, lightweight nature, and moisture resistance make it a more versatile and robust choice for demanding environments. Plywood sells at around $1.40 per square foot at the manufacturer's level and has marginal costs of around $1.18 per square foot.

Plywood production starts by conditioning logs through steamers or hot water vats to enable smooth peeling into thin, continuous sheets of veneers using spindleless lathes or clipper slicers. The peeled veneers are dried in heated rollers or jet dryers to optimal moisture content. Automatic grading machines then visually inspect each veneer sheet and sort them by grade. Graded veneers are coated on glue spreaders with moisture-resistant adhesives like urea or phenol-formaldehyde, applied by metering pumps. The treated veneers are stacked in alternating grain directions or "plies," which imparts the product's strong structural integrity. The plied veneers are pressed under controlled heat and pressure in hydraulic hot presses to cure the adhesive and bond the layers into cohesive panels. The presses feature automated loading/unloading systems to minimize cycle times. After pressing, panels are trimmed to size on panel saws and sanded by wide-belt sanders. Finally, edge sealing, branding, specialty coating, and other finishing steps are performed before shipment.

The machinery required to veneer logs, prepare layered mats, press, and finish plywood panels requires more capital investment than the less intricate MDF and particleboard plants and costs about $200 million. The average capacity utilization of plywood mills in the Southeastern United

States is around 83%. The most recent new plywood mill was the Southern Timber mill, which came online in 2020.

Engineered wood manufacturers. Industry participants, industry analysts, and third-party market research reports recognize three regions in the United States for the manufacture of engineered wood products: the Southeast, the Pacific Northwest, and the Northeast. The Southeast includes North Carolina, South Carolina, Georgia, Alabama, and Mississippi, which all have extensive softwood forests. The Pacific Northwest, primarily Oregon and Washington, contains abundant timber resources and forest product infrastructure to support significant production. Finally, the Northeast region, anchored by New York and Pennsylvania, hosts manufacturers converting hardwood resources into wood panel products. The timber supplies, established industry networks, and proximity to key markets in these three regions make them the primary U.S. clusters for manufacturing engineered wood products.

The Southeast supplies the largest volume of engineered wood products of the three regions. The region's dense softwood forests provide a steady, cost-effective wood fiber supply to support high-volume production. The warm climate enables year-round logging seasons. The region's infrastructure, transportation networks, and established wood products clusters facilitate efficient supply chains and access to specialized labor. The longevity of the timber industry in the region has also fostered a skilled workforce and supply chains to support MDF, particleboard, and plywood manufacturing. Tables 1 and 2 detail the firms operating in the Southeast and their manufacturing facilities. Maps 1-3 at the end of the document show mill locations.

Table 1

Engineered Wood Product Manufacturing Plants in the Southeastern United States

(The first line for each company is the total for that company)

		MDF			Particleboard			Plywood		
		Sq. Ft.	Revenues	Revenue	Sq. Ft.	Revenues	Revenue	Sq. Ft.	Revenues	Revenue
	Product	(millions)	(millions)	Share	(millions)	(millions)	Share	(millions)	(millions)	Share
Woodhaeuser		**435.0**	**$391.50**	**30.0%**	**573.75**	**$258.19**	**51.0%**	**1870.4**	**$2,618.56**	**28.0%**
Oxford, AL	MDF									
Cordele, GA	MDF									
Elkin, NC	MDF									
Claremont, NC	PB									
Black Mountain, NC	PB									
Barnwell, SC	PB									
Thomson, GA	PB									
Lumberton, NC	Plywood									
Plymouth, NC	Plywood									
Columbia, SC	Plywood									
Valdosta, GA	Plywood									
WoodFusion Technologies		**261.0**	**$234.90**	**18.0%**	**281.25**	**$126.56**	**25.0%**			
Columbus, MS	MDF									
Russellville, AL	MDF									
New Albany, MS	PB									
Adger, AL	PB									
Southern Timber		**246.5**	**$221.85**	**17.0%**	**157.50**	**$70.88**	**14.0%**	**1002**	**$1,402.80**	**15.0%**
Dudley, NC	MDF									
Chester, SC	MDF									
Hope Mills, NC	PB									
Sanford,NC	Plywood									
Kittrell, NC	Plywood									
Rosebud Forest Products		**203.0**	**$182.70**	**14.0%**				**1002**	**$1,402.80**	**15.0%**
Taylorsville, NC	MDF									
Newberry, SC	MDF									
Fayetteville,NC	Plywood									
Prosperity, SC	Plywood									
Delta Mills		**72.5**	**$65.25**	**5.0%**	**112.50**	**$50.63**	**10.0%**			
Clanton, AL	MDF									
Aliceville, AL	PB									
Columbia MDF		**130.5**	**$117.45**	**9.0%**				**668**	**$935.20**	**10.0%**
Helen, GA	MDF									
Abbeville,AL	Plywood									
Sierra Pacific Industries		**101.5**	**$91.35**	**7.0%**						
Thomasville, NC	MDF									
Joubert Plywood										
Peachtree City, GA	Plywood									
American Plywood										
Americus, GA	Plywood							1469.6	$2,057.44	22.0%
Demopolis, AL	Plywood									
Guntown. MS	Plywood									
Timber Products										
Magnolia, MS	Plywood							334	$467.60	5.0%
OE Plywood								**334**	**$467.60**	**5.0%**
Brookhaven, MS	Plywood									
TOTAL		1450.0	$1,305.00	100.0%	1125.00	$506.25	100.0%	6680	$9,352.00	100.0%

NB: Data obtained from trade associations. The investigation has not yet obtained data from suppliers on their individual operations.

Table 2

Southeastern U.S. Manufacturing Operations

	Average Manufacturer Price	Average Manufacturing Cost (sq. ft.)			Average Capacity
	Sq. Ft.	$	$margin	%margin	Utilization
MDF	$0.90	$0.65	$0.25	0.28%	75%
Particleboard	$0.60	$0.45	$0.15	0.25%	61%
Plywood	$1.40	$1.18	$0.22	0.16%	83%

NB: Averaged data obtained from trade associations.

MDF and particleboard plants are often situated on independent, standalone sites rather than within broader company complexes. Small, independent companies initially established many of these plants, often strategically located near raw material sources or key market areas. These individual sites were tailored to the specific operational needs of the time, focusing on regional demand and leveraging local forestry resources. As the engineered wood sector consolidated over time, larger corporations acquired these individual MDF and particleboard operations. Even today, it is common for individual MDF or particleboard plants to be bought and sold between different corporate owners seeking to optimize their portfolio of assets and adjust their capacity across states and regions. By contrast, plywood plants are often integrated with lumber mills and are traded only when the sawmill is sold.

MDF, particleboard, and plywood manufacturers are organized into trade associations. The Composite Panel Association (CPA) is the major trade association for MDF and particleboard manufacturers. The CPA has separate sections for MDF and particleboard and subsections for each of the three manufacturing regions in the United States. The American Plywood Association (APA) is the major trade association for plywood manufacturers and similarly has sections for each of the three U.S. manufacturing regions. Both associations and their members work closely with government agencies and other trade groups on manufacturing standards, building codes, and environmental regulations impacting their respective industries. They also collect data from members and distribute monthly aggregated (noncompany specific) statistics to members on average prices and production costs as well as on production, capacity, and capacity utilization by plant.

Engineered wood customers. Engineered wood products are used in producing consumer and office furnishings (primarily for furniture, cabinet, and shelving) and in construction (primarily for structural framing, flooring, roofing, and wall sheathing). Engineered wood companies sell their products directly to furnishing manufacturers and commercial distributors of construction materials. Customers range from large multiplant furnishing companies to small manufacturing shops and nationwide contribution distribution companies to local distributors.

Customers follow a two-step process when purchasing engineered wood products.

First, the intended application and required performance attributes determine the optimal product type—MDF, particleboard, or plywood. As discussed above, each panel type varies significantly in strength, weight, machinability, moisture resistance, workability, and other properties. Typically, one panel type will best satisfy the customer's requirements, with the other panel types distant second choices. This results in relatively inelastic aggregate demand for each

product category, with estimates ranging from -0.4 to -0.6 for each product type at both the state and regional levels at current prices. As Table 3 shows, marginal customers decreasing purchases following a price increase are mostly reacting to reduced end-user demand for furnishings or building materials rather than switching to alternative engineered wood products.

Table 3

Diversion Ratios for One-Product Type SSNIPS[5]

	To:			
From:	MDF	Particleboard	Plywood	Other
MDF	x	3%	4%	93%
Particleboard	5%	x	1%	94%
Plywood	6%	0%	x	94%

Data estimated by WFT.

Second, once the customer has determined a product type, the customer then chooses the manufacturing supplier that can provide the required panel at the lowest delivered cost. Customers solicit bids from suppliers for F.O.B. origin supply contracts. Under these contracts, the buyer takes ownership at the manufacturer's plant, owns the goods in transit, and pays the standard shipping rates of third-party shippers. Buyers select suppliers based on their total delivered price—base price at the factory plus shipping costs from the supplier's location. Shipping costs—by rail or truck—can be a small but meaningful portion of the total price. Transportation costs for MDF and particleboard average 2% of the product's price at the plant for every 100 miles, so a product that costs $50 at the plant would cost $55 to deliver to a customer 500 miles away ($50 x 0.02 x 5).[6] Plywood is much lighter and averages 0.75% of the product's price at the plant to ship 100 miles. Although multiple suppliers bid for each contract, over 70% of customers (by dollar volume) sign contracts to be supplied by the nearest plant. Suppliers know the customer's location when bidding on contracts, and customers do not arbitrage the products they purchase from their suppliers.

The parties

WoodFusion Technologies, Inc. (WFT). WFT owns and operates two MDF plants (Columbus, MS, and Russellville, AL) and two particleboard plants (New Albany, MS, and Adger, AL). WTF likes to operate plants that are close to each other so that they can back one another up in case one plant develops a production problem. In 2022, WFT earned $65.25 million in profits from the sale of MDF and $42.19 million from the sale of particleboard, for a total profit of $107.44 million.

The two WFT MDF plants, located 100 miles from each other, are in northeastern Mississippi and northwestern Alabama, where they supply numerous furniture manufacturers in the area. The two closest MDF plants are Delta Mill's Clanton, AL, mill and Woodhaesuer's Oxford, AL, mill. Plants in Georgia, South Carolina, and North Carolina rarely bid for business in the area given their much longer shipping distances.

[5] Applied to all products with the product type (i.e., all MDF, all particleboard, and all plywood) while holding the prices of all other product types constant.

[6] A distances are driving distances.

The two WFT particleboard plants, about 160 miles apart, are also in the same area of Mississippi and Alabama as the MDF plants. These plants primarily supply the construction industry. The two closest particleboard plants are Delta Mills' Aliceville, AL, mill and Woodhaeuser's Thomson, GA, mill.

Table 4 gives the driving distances in miles from each WFT plant to its two nearest competitors.

Table 4

WFT Driving Distances to Nearest Competitor Plant

WFT MDF	Delta Mills Clanton, AL	Woodhaeuser Oxford, Al
Columbus, MS	235	175
Russellville, AL	160	170

Particleboard	Delta Mills Aliceville, AL	Woodhaeuser Thomson, GA
New Albany, MS	130	370
Adger, AL	80	280

Delta Mills Corporation. Delta Mills has an MDF plant in Clanton, MS, and a particleboard plant in Aliceville, AL. The Clanton MDF plant serves the furniture industry. In 2022, Delta Mills earned $18.13 million in profits from the sale of MDF and $16.88 million from the sale of particleboard, for total profits of $35.00 million.

Its two closest competitors are Woodhaeuser, AL, mill and WFT's Columbus, MS, mill. Delta Mills' Aliceville plant serves the construction industry. Its two closet competitors are WFT's Adger, AL, mill and Woodhaeuser's Thomson, GA, mill. Table 5 gives the driving distances in miles from each Delta Mills' plant WFT plant to its two nearest competitors.

Table 5

DM Driving Distances to Nearest Competitor Plants

DM MDF	WFT Columbus, MS	Woodhaeuser Oxford, AL
Clanton, AL	235	80

Particleboard	WFT Adger, AL	Woodhaeuser Thomson, GA
Aliceville, AL	80	360

The transaction. Amelia Sawyer, the 71-year-old CEO of Delta Mills Corporation, decided to sell her family's company prior to retirement since her children lacked interest in managing the business. When Sawyer put the company up for auction, several firms bid and WFT emerged as the highest bidder by a significant amount. Carter Wood, WFT's CEO, had been looking for a medium-sized acquisition to grow the business and Delta Mills was an ideal target. The two

companies operated primarily in Mississippi and Alabama and WFT knew the local business environment and the customers. A key driver of WFT's bid price—which no other bidder could match—was the expected saving of $20 million per year WFT could gain by closing Delta Mills' Aliceville, AL particleboard plant and reallocating its production to WFT's facilities in New Albany, MS, and Adger, AL. WFT estimated that, at its weighted average cost of capital (WACC) of 6.2%, the present discounted value of the savings over the next ten years would be $145.8 million, or about 52% of the purchase price. The parties have not argued, and the investigation has not revealed, any other synergies from the transaction.

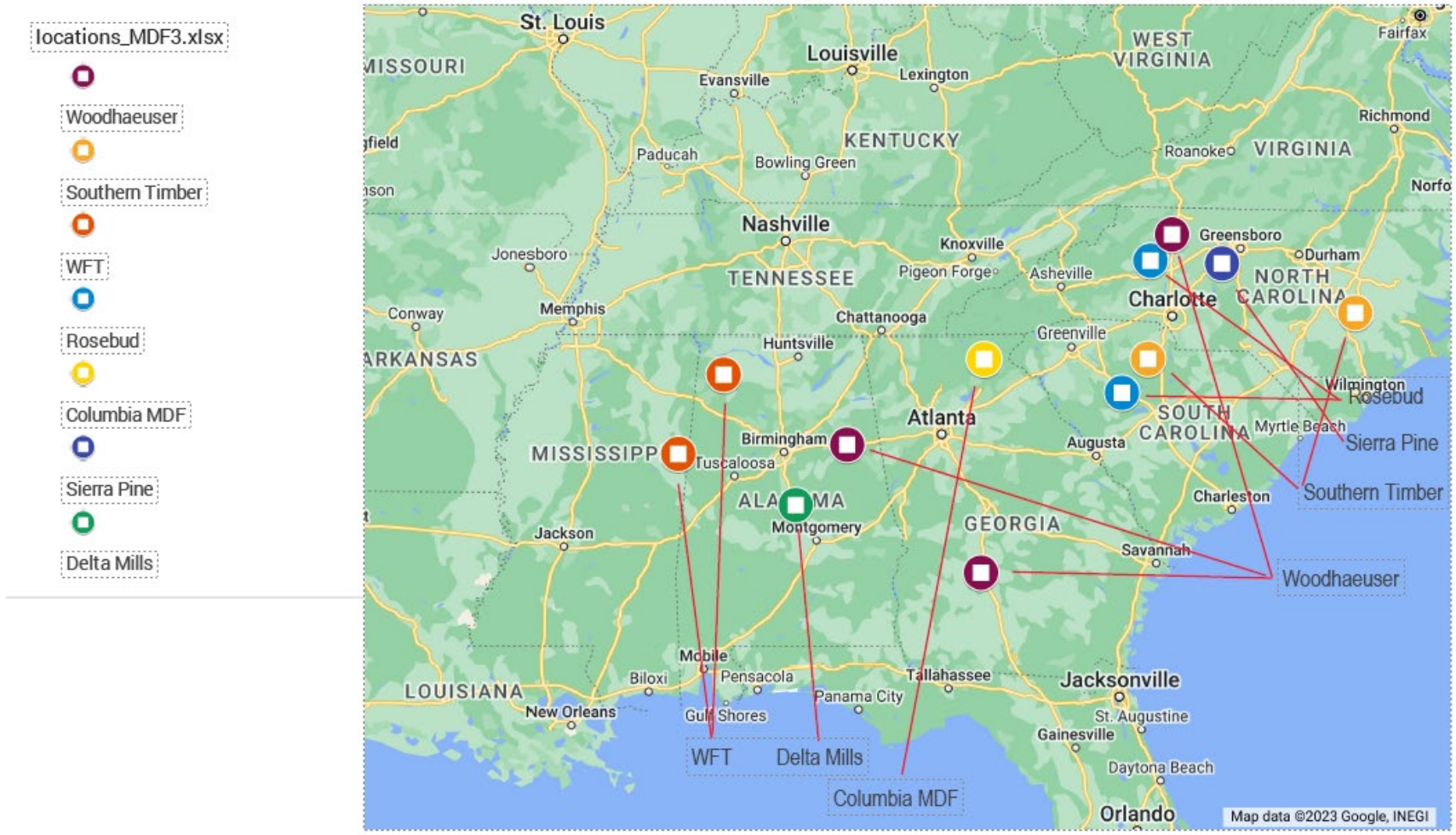
Although Delta Mills' Aliceville particleboard plant is operating profitably and Delta Mills had no plans to close the plant, after the signing of the purchase agreement, WFT secretly prevailed on Delta Mills to shut down the plant before the closing of WFT's acquisition and send its customers to WTF. This was important to WFT because it had been having some labor issues in its plants and hoped it would not be seen as responsible for shuttering the Aliceville plant if Delta Mills did it before the closing.

Customer reactions. The staff has had only limited success so far in contacting MDF and particleboard customers located in Mississippi and Alabama. Most customers have not returned the staff's telephone calls. Most of the WFT customers who the staff did contact supported the deal, saying they knew and liked Carter Wood, the WFT CEO, and that WFT had always treated them "right" and provided them products at prices that allowed them to be competitive when they sold their finished products downstream. A few WTF MDF customers also noted that the Woodhaeuser plant in Oxford, AL, was only 80 miles from the Delta Mills Clanton mill. One of these customers calculated that this could increase shipping costs by about $0.013 per square foot at most, or less than 1.5% of the price of MDF at the mill, and did not think that would have any material effect on her furniture business. However, particleboard customers to whom the staff spoke, especially Delta Mills customers, appeared to be more concerned about the transaction. They noted that postmerger WFT would be the sole manufacturer in Mississippi and Alabama and that the nearest competitors would require hundreds of miles of additional shipping to supply them. One Delta Mills particleboard customer observed that, after the acquisition, the nearest competitor to the merged firm would be Woodhaeuser in Thomson, GA, which would add over 300 miles of additional shipping and cost about $0.036 per square foot in additional shipping costs (or about 6% of the price of particleboard at the mill).

Neither the Mississippi nor Alabama attorney general expressed any concern in the transaction, but the staff does not consider this significant since neither state has been active in antitrust enforcement.

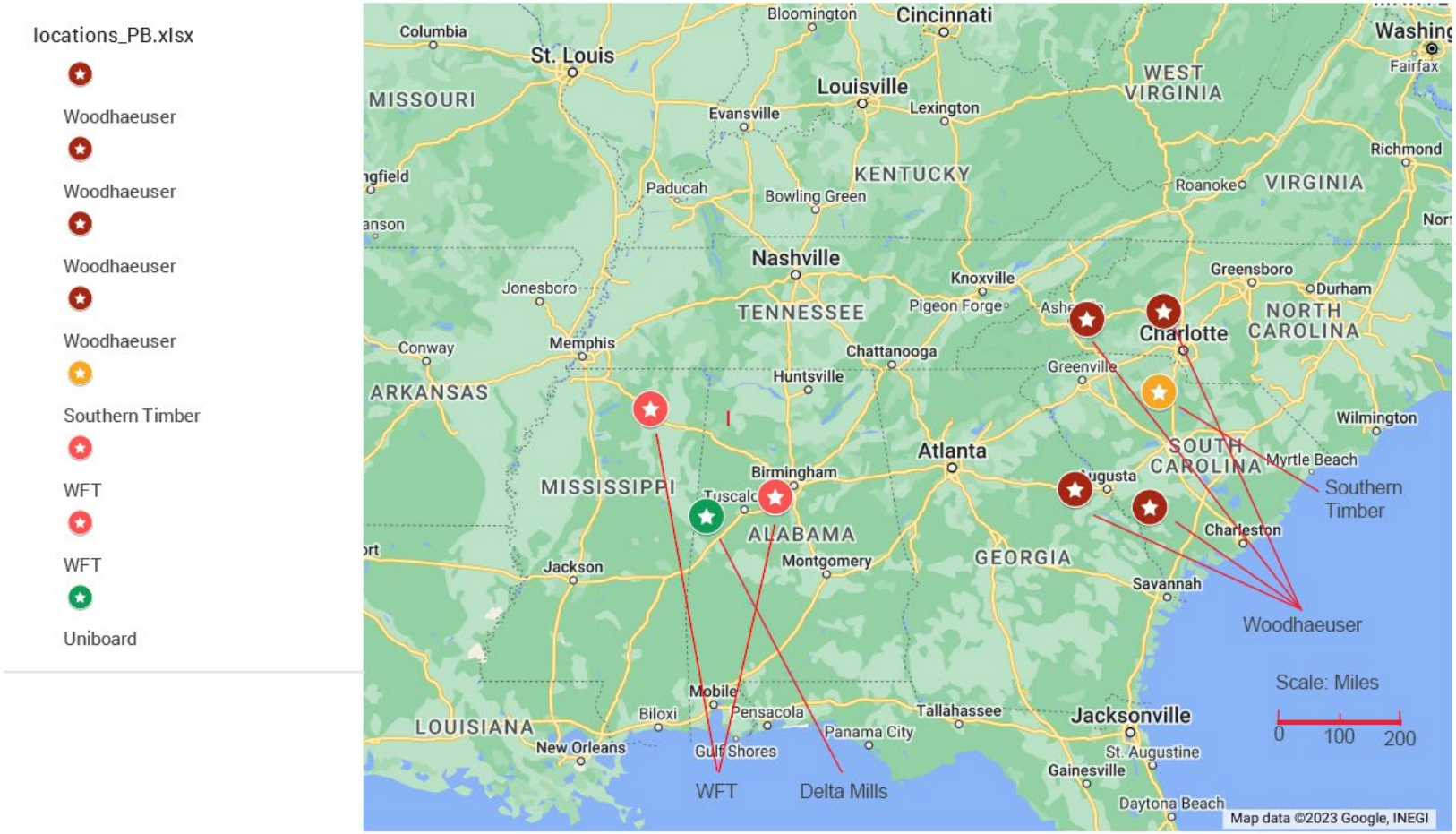
Map 1

Southeastern United States--MDF



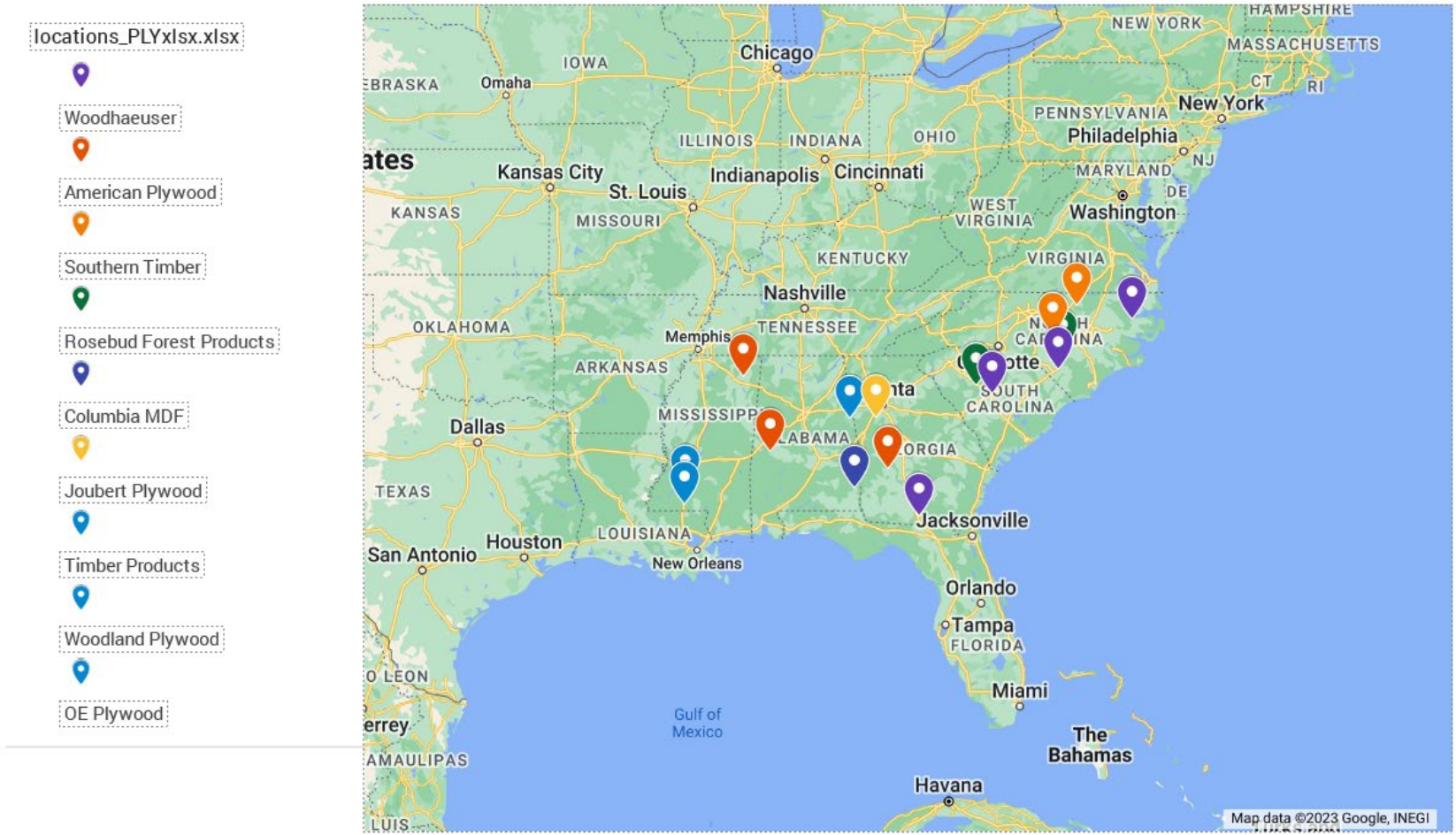
Map 2

Southeastern United States--Particleboard



Map 3

Southeastern United States--Plywood Mills



Engineered Wood Products Merger

Part I: First-Cut Outline

I wrote this exam with the idea that, after reading the hypothetical twice and thinking about your answer, you would come up with something like the following basic outline before starting to write. A more detailed feedback outline follows.

0. Role and general conclusions
    a. *Role*: DOJ staff attorney making a case assessment in the middle of a second request investigation—four questions to be answered
    b. *Conclusion*: The DOJ can make a strong Section 7 case against the acquisition in two markets:
        i. MDF in a local market centered around the merging firms (say MS-AL)
        ii. Particleboard in a local market centered around the merging firms (say MS-AL)
1. There is a strong prima facie Section 7 case in the two markets
    a. Product market: Separate MDF and particleboard markets
        i. *Brown Shoe*: Strong evidence indicates separate products
        ii. *HMT*: Given aggregate demand elasticities at regional and state levels, so use critical elasticity implementation of critical loss
    b. Geographic markets: Local markets centered around merging firms (probably MS-AL)
        i. Strongly suggested by the maps and transportation cost factors
    c. *PNB* presumption
        i. *MDF*: 3→2 in the local market
        ii. *Particleboard*: 2→1 in the local market
        iii. Worry about the HHIs later
    d. Auction unilateral effects:
        i. Needs to be analyzed in both MDF and particleboard, BUT
            1. *MDF*: Effect may be small given the close presence of Woodhaeuser plant
            2. *Particleboard*: Likely strong effect given the long distance to the nearest nonmerging mill
    e. Recapture unilateral effect
        i. Not possible within individual product types (homogeneous products)
        ii. Could be a recapture unilateral effect between MDF and particleboard (both of which the merged firm will manufacture), but diversion ratios are so small that any recapture unilateral effect is likely to be insignificant
    f. Coordinated effects:
        i. *MDF*: Strong case (3→2)
        ii. *Particleboard*: Not applicable (merger to monopoly → no one to coordinate with)
    g. Elimination of a maverick: Inapplicable—no indication either firm disrupts coordinated interaction
2. Defenses
    a. Entry, expansion, repositioning: Inapplicable
        i. *Entry*: High plant construction cost, excess capacity, no history)

ii. *Expansion*: Too much spatial separation of other like-product plants to completely negate a price increase)
iii. *Repositioning*: Plants dedicated to only one product type→Repositioning would require new entry

b. Efficiencies: Inapplicable
i. Only possibility is the closing of the Delta Mills Aliceville particleboard plant and the reallocation of production to the adjacent WFT mills, BUT
1. This is a fixed cost savings → not cognizable
2. Results from an anticompetitive effect of the transaction
ii. No evidence of any marginal cost savings

c. Power buyers: Inapplicable
i. *No protection mechanism*: Spatial separation of nonmerging plants→switching suppliers entails paying higher prices
1. Might be an exception in particleboard with the Woodhaeuser AL plant
ii. *Small buyers*: There exist small customers that cannot protect themselves

d. Failing firm: Inapplicable
i. *Not failing*: Both companies are profitable in both MDF and particleboard
ii. *Alternative buyers*: Hypothetical suggests—but does not state—that there may have been other bidders

3. Evidence to be collected in the remainder of the investigation
a. Need plant sales by customer (including location and sales quantities) by product from each of the merging firms (and Woodhaeuser MDF AL plant) to better define the local geographic markets and perform an HHI analysis
b. Need more transportation cost and historical bidding information for merging firms and alternative suppliers to refine auction unilateral effects analysis
c. Need more evidence on elements of the prima facie case and the defenses that are not addressed in the hypothetical to confirm to be sure that none of the conclusions in the memorandum should be changed

4. "Litigate the fix"
a. Current DOJ policy: Do not settle investigations with consent decrees→only option for the merging parties is to "litigate the fix"
b. DOJ view:
i. A "fix" requires a complete divestiture of one party's business in each of the two problematic markets:
1. MDF: DM's Clanton plant or both WFT mills
2. Particleboard: DM's Aliceville plant or both WFT plants
ii. WFT should not entertain this fix
1. WTF makes more profits with its plants than DM, so there is no "trade up" opportunity for WFT
2. WFT's motivation for the transaction is the acquisition/closing of the Aliceville particleboard plant and the reallocation of Aliceville production to the adjacent WFT particleboard plants
3. Any fix involving Aliceville should require the merging parties first to reopen the plant

iii. CAUTION: The courts have not ruled on whether a complete divestiture of one party's business in a problematic market is required if a partial divestiture would negate any substantial lessening of competition in that market
    1. Need further investigation of any trade-up opportunity to eliminate the possibility that the merging parties may attempt to litigate a partial divestiture fix

5. HSR "gun jumping" violation
    a. WFT's influence in the closing of DM's Aliceville particleboard plant before the consummation of the acquisition constitutes WFT's acquisition of a reportable "beneficial interest" in DM without observing the HSR Act's reporting and waiting period requirements (à la *Flakeboard* in Unit 4)
    b. [WFT's and DM's cooperation in closing the Aliceville plant before the consummation of the WFT/DM acquisition also violates Section 1 of the Sherman Act, but since we did not cover this explicitly in the course, you were not responsible for knowing this.]

Engineered Wood Products Merger

Part II: Feedback Outline

Note: As we discussed in class, my exams are written so that it would be difficult to spot and analyze in detail every issue the hypothetical presents.[1]

[1] As we discussed in class over the span of the course, I grade exams along three dimensions. First, I look at the exams from the perspective of a partner or a mid-level agency official receiving the memorandum. If the exam is well organized, addresses all of the major issues and most of the minor ones, performs a relatively tight analysis on most issues that supports the conclusions—so that memorandum would take relatively little work to get into shape to send to a client or a more senior agency official, the memorandum will receive a high raw grade. Conversely, if some major issues are missed, the analysis botched on some issues that were spotted, and some conclusions in the issues that were addressed were not well supported, so that the memorandum would require major reworking before sending to a client or senior agency official, the memorandum will receive a low raw grade. Second, I try to achieve horizontal equity across the class, so that memorandum submitted by another student this year of the same quality receives the same grade. Finally, I try to achieve vertical equity across classes, so that a particular grade—say, an A- —signals a memorandum of comparable quality to a memorandum that received the same grade in earlier years. Subject to the limitations imposed by the third factor, I apply the law school's curve to generate the exam letter grades that were posted.

Questions: Work product—Calls for a reasoned memorandum of law[2,3,4,5,6]

1. The strength of the Division's prima facie case
2. The strength of any defenses the parties have (including any defenses you can anticipate that the parties have not raised)
3. What additional questions, evidence, and competitive analysis the Division should explore as it continues the investigation to strengthen its case further
4. Whether the merging parties could restructure the deal in any way and "litigate the fix" if the Division challenges the transaction in court

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[2] It should go without saying that a reasoned memorandum of law should be written using the "IRAC" method (issue, rule, application, conclusion). Once an issue is identified, you should draw the rule from the boilerplate prepared, apply the rule to the facts in the hypothetical, and then state your conclusion on the issue. Although it can be hard to distinguished yourself on the upside with boilerplate since so many students draw their boilerplate from the same sources, you can distinguish yourself on the downside by failing to clearly state the rule to which you are applying to an issue. This is especially important when I do not understand the reasoning in an application. When the rule is clearly stated, I can usually work backwards to figure out the analysis. Without the rule, I am lost (which is not helpful to the grade). It is also essential that you explicitly state the conclusion you draw from the analysis. A conclusion to a particular analysis was missing in a number of answers.

It should also go without saying that good boilerplate and clear conclusion giving the right answer but no reasoned analysis supporting the conclusion will get you no credit for that issue. You have to present the analysis.

A carping (but important) point: *Do not use "etc.*" in a formal memorandum of law. I did not deduct for its use, but most partners in law firms would flip out if they saw "etc." in a legal memorandum or a brief.

[3] It should go without saying that including something in the memorandum that misstates or misapplies the legal principle will count against your grade. This is true even if the material in question was superfluous in the memorandum.

[4] It should go without saying that you should understand and write your memorandum from the perspective of the role the problem assigns. Here, you were an Antitrust Division attorney in the section conducting a second request investigation of the WFT/Delta Mills transaction. Some students wrote their memoranda as if they were defense counsel to one of the parties. Some students went further and discussed HSR reportability even though the transaction was in a second request investigation. Writing from a perspective other than your assigned role is not helpful to the grade.

[5] Some students did not write a summary of their conclusions in the introduction to the memorandum. I do not require a summary for grading purposes, although it is helpful to me to understand where you are going before the detailed analysis begins. But I submit that failing to write a summary—or at least explicitly list your conclusions of the major issues in the analysis, whether you include something in the introduction of not—is a big tactical mistake in exam writing. As a general rule, students who did not include an introduction tended to wander in their analysis and often did not make clear their conclusions. You had five hours for this exam, and spending an hour to outline your analysis and make explicit your conclusions before you start writing can pay enormous dividends.

[6] When using your boilerplate in the answer, be sure to conform it to the facts in the hypothetical. It does not help your credibility or persuasiveness when writing a formal memorandum on engineered wood products to be drawing conclusions about ice cream, fountain pens, or beer bottles. Likewise, if your boilerplate contains a fact or some quoted language, make sure that the fact or quoted language appears in in the instant hypothetical. Some students included boilerplate with a "fact" that did not appear in the engineered wood products hypothetical—for example, referring to possible anticompetitive effects in innovative activity as a result of the merger although the hypothetical was completely silent on any innovative activity in the industry. Using boilerplate that you do not tailor to the hypothetical can steer you to the wrong answer in an exam setting (as it did for some students in this exam) and in practice can be detrimental to your career. My suggestion is that when you are preparing your boilerplate, highlight in **bold** anything that may need to be changed or updated to conform to the hypothetical you are addressing.

Section 7 case

1. Product markets—MDF and particleboard separately (also plywood, but not relevant to the competition issues)[7,8,9]
    a. *Brown Shoe* factors
        i. Inelastic demand for each product type implies low cross-elasticities of demand between product types
            1. Reinforced by low one-product SSNIP diversion ratios between engineered wood products
        ii. Industry or public recognition: Each type recognized as a separate economic product grouping by—
            1. Firms in the industry
            2. Trade associations
            3. Third-party market research reports
        iii. Product's peculiar characteristics and uses
            1. Each product type is homogeneous and conforms to separate and distinct Department of Commerce and ANSI standards
            2. Uses
                a. *MDF*: Used extensively for cabinetry, shelving, and decorative moldings due to its affordable cost, machinability, stability, and smooth surface suitable for veneering and laminating
                b. *Particleboard*: Used where cost savings are a priority and the demands on strength and moisture resistance are relatively low. It is commonly used to produce budget-friendly furniture,

[7] It is critical that you identify *explicitly* the product grouping(s) that you are concluding is a relevant market. Some students identified the relevant product market as "all engineered wood products with submarkets," but never said in the product market analysis what the submarkets are. In law, it is not the job of the reader to infer, much less guess, the ultimate conclusion of the analysis. In these cases, I treated product market analysis as only concluding that all engineered wood products was the relevant market.

[8] As a matter of exam strategy (and MOL organization), if you have identified a market in which there is a prima facie Section 7 case, address it first in the market definition analysis. In an exam, if you outlined your analysis before you started writing, you should have detected some markets in which the prima facie case was strong. This usually means starting with the smallest product markets—here, MDF and particleboard. Some students looked first and properly rejected at an all-engineered wood products candidate market and then maybe an MDF-particleboard candidate market. Analytically, there is no problem in doing this. Practically, however, this approach both "buries the lede" and expends valuable exam time that could have been used to further develop other, more important parts of the memorandum. Remember, there can be many relevant markets implicated by a merger, but only one needs to exhibit the requisite anticompetitive effect for the transaction to violate Section 7. So start by analyzing the markets that you will later show exhibit the requisite anticompetitive effect. If there are multiple markets in which a prima facie case can be made, address each of them in the memorandum. But once you cover those markets, you do not need to address any other markets (unless the merging firms are raising the issue, which you can address as part of the analysis of the defenses).

[9] There are two separate product markets here. Consequently, throughout the memorandum it is essential to make clear what product market you are addressing. Some students failed to be explicit in some parts of their discussion of an explicit theory of anticompetitive harm or a defense, and I could not tell which product market they were analyzing.

flooring, kitchen cabinets, partition walls, and decorative moldings.

c. Plywood: Significantly outperforms both MDF and particleboard in terms of strength, making it the preferred choice for load-bearing and structural applications

3. *Price (at the manufacturer's level)*:
   a. *MDF*: Price--$0.90/sq. ft.; marginal cost--$0.65/sq. ft.
   b. *Particleboard*: Price--$0.60/sq. ft.; marginal cost--$0.45/sq. ft.
   c. *Plywood*: Price--$1.40/sq. ft.; marginal cost--$1.18/sq. ft.
4. Distinct customers
   a. Customers employed a two-step process in selecting a supplier:
      i. First, they pick the wood type—cost is not considered
      ii. Second, they select the panel manufacturer that can supply the desired product type at the lowest delivered cost
   b. The fact that customers pick the wood type first—without considering costs—implies that there are distinct customers for each wood type
5. *Weight*: MDF is 20% heavier than particleboard and 30% heavier than plywood
6. *Strength*:
   a. *MDF*: Denser and offers greater strength than particleboard, making it more suitable for weight-bearing applications, intricate shaping, and molding.
   b. *Particleboard*: More brittle than MDF and can be prone to breaking under stress
   c. *Plywood*: Significantly stronger than MDF and particleboard, making it the preferred choice for load-bearing and structural applications.
7. *Moisture resistance*: Plywood is the most resistant to moisture; MDF is relatively resistant; and particleboard is easily susceptible to damage by moisture
8. *Painting*: MDF and plywood accept paint without undue absorption or undesirable warping; particleboard can absorb paint and warp
9. *Veneers and laminates*: MDF and plywood have consistent surfaces for accepting finishes like veneers and laminates; particleboard does not.

iv. Unique production facilities

1. Each product type requires production facilities with distinct specialized equipment that cannot be used for another product type
   a. *MDF*: Specialized equipment includes chippers, grinders, and refiners to break down wood fiber; flash tube dryers to reduce moisture content; blenders to mix in resin binders and wax; forming machines to lay the fibers into mats; pressing systems with heated platens to compress and cure the boards; saws and

sanders to trim and finish the panels. Capital investment >$150 million.

b. *Particleboard*: Specialized equipment includes chippers, hammer mills, and refiners to reduce wood residuals to fine particles; rotary dryers to dry the particles to the required low level of moisture content; motorized mixers to blend the dried particles with liquid resin adhesives; forming stations to deposit the particles into a layered mat; hydraulic hot presses to compress the mat under high temperatures and pressures and fuse the wood particles into a cohesive, dense panel; trim saws cut boards to size; and sanders provide finishing. Capital investment ≈ $100 million.

c. *Plywood*: Specialized equipment includes steamers or hot water vats to enable smooth peeling of logs into thin, continuous sheets of veneers using spindleless lathes or clipper slicers; heated rollers or jet dryers to dry the peeled veneers to optimal moisture content; automatic grading machines to visually inspect each veneer sheet and sort them by grade; metering pumps and glue spreaders to coat graded veneers with moisture-resistant adhesives like urea or phenol-formaldehyde; automated equipment to stack the treated veneers in alternating grain directions or "plies"; hydraulic hot presses to press the plied veneers to cure the adhesive and bond the layers into cohesive panels; panel saws to trimmed the panel to size; and wide-belt sanders to sand the trimmed panels. Capital investment ≈ $200 million.

2. Production facilities can make only one type of engineered wood
3. Cannot switch between types of engineered wood

b. HMT[10]

i. *Alternative 1*: Critical elasticity test

1. Each type of product is homogeneous → Use a critical loss implementation
2. The hypothetical states that aggregate demand for each product is inelastic
    a. Just knowing that demand is inelastic tells you that the demand elasticity is less than 1 in absolute value.

[10] Some students used a one-product (group) SSNIP recapture test, showed that no grouping of any two product types satisfied the test, and concluded that MDF and particleboard (and plywood) were in separate relevant markets. While the one-product SSNIP recapture test can be used to show that two products (or, as here, product groups) are in the same relevant market, the failure of the test does not show that the two products are in separate markets. A product grouping has to satisfy only one of the various HMT implementations to be a relevant market. Here, MDF and particleboard each satisfy the critical elasticity test. By the superset theorem, together they also satisfy the HMT—the opposite of what students who relied solely on the one-product SSNIP recature test concluded.

b. Moreover, the hypothetical gives some own-elasticity estimates and states that they hold at both the state and regional levels ("This results in relatively inelastic aggregate demand for each product category, with estimates ranging from -0.4 to -0.6 for each product type *at both the state and regional levels* at current prices.") (emphasis added) [11]

3. Test against the most elastic aggregate demand estimate indicated in the hypothetical
    a. If you want to rely on the elasticity estimates on the numerical estimates, use 0.6 since it is the most elastic of the numerical estimates. This will give the most conservative application of the test (i.e., if the HMT is satisfied at 0.6, then any actual own-elasticity estimate less than 0.6 will also satisfy the HMT)
    b. if you want to rely only on the qualitative characterization of aggregate elasticity, use 0.99—essentially the maximum elasticity of an inelastic demand curve
4. *Test*: If actual elasticity < critical elasticity → HMT satisfied

Maximum aggregate demand elasticity		
All product types	0.6	
Critical elasticity test (1/δ + m)	MDF	Particleboard
%SNIPP	5%	5%
%margin	28%	25%
Critical elasticity	3.05	3.33
	PASSES	PASSES

ii. *Alternative 2*: Percentage critical loss
    1. Percentage critical loss formula:

$$\%CL = \frac{\delta}{\delta + m}$$

[11] Some students did not use either the qualitative or quantitative indications of the aggregate elasticity given in the hypothetical but rather calculated the elasticity using the margin of firms in the market and the Lerner condition. This gives the wrong elasticity for MDF and particleboard that the hypothetical monopolist faces. The Lerner condition allows one to estimate a *firm's residual demand elasticity* when the firm is maximizing its profits. For a profit-maximizing structural monopolist, the margin of the monopolist can be used to estimate the elasticity of the aggregate demand curve since for a monopolist its residual demand curve is the aggregate demand curve. Some students thought they could use the average margin for a group of firms (separately, MDF and particleboard producers) to estimate the aggregate demand facing that group. But except for the special case of a structural monopolist, the Lerner condition cannot be used to estimate the elasticity of the aggregate demand curve. The problem is that some or all of the firms in the group are competing with one another, which drives down their individual margins. These reduced margins imply a more elastic individual residual demand curves than the aggregate demand curve. Consequently, applying a firm's current margin (or the average margin for a group of firms) to the Lerner condition will not give you the aggregate elasticity for either MDF or particleboard.

2. Calculate HMT's percentage actual loss (%Δq) from SSNIP (δ) and aggregate demand elasticity (ε):

$$\varepsilon = \frac{\%\Delta q}{\delta} \Rightarrow \%\Delta q = \varepsilon\delta$$

   As above, to be conservative, use the largest elasticity (0.6—but 0.99 also works)[12]
3. *Test*: If percentage actual loss < percentage critical loss → HMT satisfied

Percentage critical loss (δ/(δ + m))	MDF	Particleboard
Test against most elastic aggregate demand estimate (here, 0.6)		
%SNIPP (δ)	5%	5%
%margin	28%	25%
Percentage critical loss	15%	17%
Elasticity	0.6	0.6
%actual loss (=εδ)	3%	3%
	PASSES	PASSES

[12] Separately, some students used the percentage critical loss test using a 5% SSNIP and the average margin for the wood product type. So far, so good. But they thought that since the sum of the diversion ratios in Table 3 added to 100%, the percentage actual loss was 100%. Other students calculated percentage actual loss by adding the diversion ratios from the product in question to the other two types of engineered products. Both approaches are incorrect. A diversion ratio measures the percentage of firm A's unit sales lost as a result of a SSNIP that are recaptured by firm B. So if firm A loses X% of its units as a result of a SSNIP and these sales divert 50% to firm B and 50% to firm C, the diversion ratios add to 100%. But this tells you nothing about the magnitude X% of the percentage of sales firm A loses as a result of the SSNIP.

Other students also though that actual loss from a SSNIP would be 100% because each firm priced its product just below the price of the second lowest bidder, so that any firm that increased its price by a SSNIP would lose all of its business to another firm making the same type if engineered wood product. This is true as far as it goes. But the question is what percentage of its sales would a hypothetical monopolist of *all* of the firms in the relevant lose in the wake of a SSNIP. Here, in a Southeast geographic market, all of the second lowest bidders would be subsumed into the hypothetical monopolist so they would increase their prices as well. In this case, the aggregate demand elasticity of -0.4 to -0.6 says that there would be only a small percentage loss of sales by the hypothetical monopolist, and given this small percentage loss, your intuition should tell you that the HMT should be satisfied. Similarly, in a smaller regional geographic market, there could also be some loss by firms outside of the geographic market increasing their sales into the market, but the number here should also be relatively small. This is confirmed by the aggregate demand elasticity of -0.4 to -0.6, which the hypothetical says applies to individual states as well as to the region.

2. Geographic market[13]
    a. "Local" markets: Mississippi-Alabama local market[14]
    NB: I defined the "local" market as Mississippi and Alabama because (a) this is probably where the bulk of the customers of the two merging firms are located, (b) shipments by other firms into MS-AL are likely to be small or nonexistent (except for Woodhaeuser out of its Oxford, AL, MDF plant), and (c) the hypothetical gives the aggregate demand elasticities at the state level so I can run a critical elasticity HMT test. But the key is to isolate the merging firms into more local markets. I was open to alternative local market definitions depending on how well your analysis could support them.[15]
        i. Commercial realities test
            1. 70% of customers buy from the nearest plant (offers the lowest delivered price) → the customers most likely to be affected by the transaction will be in the overlap of the draw areas of the merging plants (of the same product type)
            2. Practically, we can approximate these overlapping draw areas by the states of Mississippi and Alabama
                a. Technically, we should look at the overlaps of the 75% draw areas of the merging plants (as in *Sysco*). This might indicate geographic markets, for example, in a portion of Alabama.
                b. However, as shown below, even if we expand the geographic markets to the two-state region, the transaction presents significant antitrust concerns.
            3. Includes:
                a. MDF
                    i. WFT: Both Columbus, MS and Russellville, AL MDF mills
                    ii. Delta Mills: The Clanton, AL MDF mill
                    iii. Woodhaeuser: The Oxford, AL MDF mill
                b. Particleboard
                    i. WFT: The New Albany, MS and Adger, AL mills
                    ii. Delta Mills: The Aliceville, AL mill

[13] If you analyzed multiple candidate markets, it was essential that you explicitly identify each candidate market as you analyzed it. Likewise, if you find multiple relevant markets as a result of your analysis, it was essential that explicitly identify each market as you continued to analyze it throughout the memorandum (e.g., *PNB* presumption, an explicit theory of anticompetitive harm, or a particular defense). Some students did not do this, and I could not always tell for sure what market they were analyzing. If I could not tell what market you were analyzing, you did not get credit for the analysis.

[14] If you identified a "local" geographic market (such as MS-AL) and found that a strong prima facie Section 7 case could be made, I did not deduct any points if you did not also analyze a SE market (even though there is a good argument the merger would violate Sectionn7 in the SE particleboard market).

[15] Some students spotted Mississippi-Alabama (some added Georgia) as a possible a relevant geographic market because of transportation costs but said nothing more than this possibility needed to be explored in the remainder of the investigation. To get full credit on the loal markets, you needed to develop the geographic market analysis more rigorously and then take an explicit stand on whether the narrow geography was a relevant geographic market or not. (Later in the memorandum, you also needed to assess the other elements of the prima facie case and defenses in the context of the narrower market.)

ii. HMT
1. Since the own-elasticities stated in the hypothetical were given at the state as well as the regional level, apply the same critical elasticity test as for the product market
a. It also works if you used 0.99 as a conservative measure of inelastic demand
2. HMT satisfied

b. Southeastern United States[16]
i. Commercial realities
1. Recognized by trade associations, companies, and third-party market research reports in their regular course of business documents as a distinct marketing area
2. Widely separated from other regions—the Pacific Northwest and the Northeast—recognized by trade associations
3. Products within each product type are homogeneous, so customers purchase at the lowest total cost (F.O.B. origin + transportation costs)
4. Transportation costs are small compared to the cost of goods sold but are still meaningful, and 70% of customers buy from the nearest plant (offers the lowest delivered price)
ii. Satisfies HMT
1. Since the own-elasticities stated in the hypothetical were given at the Southeastern regional level, apply the same critical elasticity test as for the product market
2. Also, if you found smaller geographic markets, the superset theorem will apply since the spatial differentiation in the location of the plants allows for some price discrimination

[16] As noted above, If you identified a "local" geographic market (such as MS-AL) and found that a strong prima facie Section 7 case could be made, I did not deduct any pints if you did not also analyze a SE market.

3. *PNB* presumption[17,18,19]

   Problem: The investigation to date has only yielded aggregate sales by company for MDF and particleboard, not sales by plant. Given the lack of plant-specific sales data, we need another method to estimate market shares in the MS-AL market given the data we have. Although neither is particularly good, there are two ways to do this:

   a. Allocate sales equally across all of the plants of a firm producing the same product. So, for example, Woodhaeuser has four MDF plants in the Southeast Region with aggregate sales of $391.50 million. Allocating aggregate sales across the four plants equally gives sales for each plant of $130.50 million.
   b. Use a bidding model and assume that each firm has an equal probability of winning a bid to supply a customer since we have no information about relative frequencies of winning. In this case, if there are *n* firms in the relevant market, then each firm has a bidding market share of 1/*n*.

   Both methods are better than doing nothing, and either method received full credit in the exam.

   A compensating observation: Besides estimating shares and HHIs, just counting the number of firms operating in each relevant market should strongly inform your intuition that the *PNB* presumption is triggered in the local markets. The merger is 3-to-2 in the MDF local market and 2-to-1 in the particleboard local market. Just noting this change in the number of firms would have given you almost full credit on the HHI calculation (even without calculating any numerical HHIs).

   a. Mississippi-Alabama
      NB: We do not know the sales of each plant in these two states. Some sales may be made by the merging firms outside these two states (for example, in Tennessee,

[17] When you do an *PNB* analysis/HHI calculation, it is critical that you explicitly identify the relevant market—both product and geographic dimensions—that you are analyzing. That is especially important when the problem involves the analysis of multiple markets. Some students failed to identify the relevant market under analysis, leaving it to the reader to infer the market. Not a good way to write an exam (although I did not deduct for this unless the text of the answer did not give me enough information to infer the market that was being analyzed). BTW, if you failed to analyze and identify a particular market in the market definition section of the memorandum, but performed a *PNB* analysis on that market later in the memorandum, I graded the market definition section as missing the analysis and identification of that market. I did not backfill the market definition analysis.

[18] It should go without saying that you should analyze the applicability of the *PNB* presumption to *every* relevant market you identified when examining the product and geographic dimensions. Especially in this problem, if you feel you the hypothetical did not give you enough information to do the *PNB* analysis on a particular relevant market you identified, you can identify the information that you need to be collected as the investigation proceeds. Some students failed to address the *PNB* question for every relevant market they had identified. Conversely, some students performed a *PNB* analysis on a market they had not identified as a relevant market (e.g., a *PNB* analysis for a Southeast region MDF market when they had not identified the manufacture and sale of MDF in the Southeast region as a relevant market).

[19] Although I strongly encourage you to use an Excel spreadsheet to calculate HHIs, it is essential that you check your Excel spreadsheet to make sure it is calculating the proper values before your start the exam. Some students had significant errors in their templates One student erred, for example, by using a temoplate that double-counted the revenues of the buyer and seller, thus reducing the market shares of all of the firms. This error reduced the resulting delta and the postmerger HHI to a degree that transformed a properly calculated easy trigger for the *PNB* presumption to become a weak predicate at best. (Instead of Excel, you can also use MathPapa, which allows you to see all of your calculations).

Arkansas, or Louisiana). Still, since transportation costs are small but meaningful, it is likely that the bulk of the sales of each merging plant are made in these two states and that using total plant sales by location to determine market shares is a reasonable way of proceeding at this point. As the investigation continues, however, obtaining sales data by customer location will be important to provide more accurate HHI calculations.

i. *Using Method (a)*: Allocate aggregate revenues of each firm evenly across plants producing the same product (as described above)

Engineered Wood Product Manufacturing Plants in the Southeastern United States
(The first line for each company is the total for that company)

		MDF			Particleboard			Mississippi-Alabama HHI contributions					
		Sq. Ft.	Revenues	Revenue	Sq. Ft.	Revenues	Revenue	MDF			PB		
	Product	(millions)	(millions)	Share	(millions)	(millions)	Share	Revenues	Share	HHI	Revenues	Share	HHI
Woodhaeuser		**435.0**	**$391.50**	**30.0%**	**573.75**	**$258.19**	**51.0%**	$130.50	30.3%	918			
Oxford, AL	MDF		$130.50										
Cordele, GA	MDF		$130.50										
Elkin, NC	MDF		$130.50										
Claremont, NC	PB					$64.55							
Black Mountain, NC	PB					$64.55							
Barnwell, SC	PB					$64.55							
Thomson, GA	PB					$64.55							
Lumberton, NC	Plywood												
Plymouth, NC	Plywood												
Columbia, SC	Plywood												
Valdosta, GA	Plywood												
WoodFusion Technologies		**261.0**	**$234.90**	**18.0%**	**281.25**	**$126.56**	**25.0%**	$234.90	54.5%	2975	$126.56	71.4%	5,102
Columbus, MS	MDF		$117.45										
Russellville, AL	MDF		$117.45										
New Albany, MS	PB					$63.28							
Adger, AL	PB					$63.28							
Southern Timber		**246.5**	**$221.85**	**17.0%**	**157.50**	**$70.88**	**14.0%**						
Dudley, NC	MDF		$110.93										
Chester, SC	MDF		$110.93										
Hope Mills, NC	PB					$70.88							
Sanford,NC	Plywood												
Kittrell, NC	Plywood												
Rosebud Forest Products		**203.0**	**$182.70**	**14.0%**									
Taylorsville, NC	MDF		$91.35										
Newberry, SC	MDF		$91.35										
Fayetteville,NC	Plywood												
Prosperity, SC	Plywood												
Delta Mills		**72.5**	**$65.25**	**5.0%**	**112.50**	**$50.63**	**10.0%**	$65.25	15.2%	230	$50.63	28.6%	816
Clanton, AL	MDF		$65.25										
Aliceville, AL	PB					$50.63							
Columbia MDF		**130.5**	**$117.45**	**9.0%**									
Helen, GA	MDF		$117.45										
Abbeville,AL	Plywood												
Sierra Pacific Industries		**101.5**	**$91.35**	**7.0%**									
Thomasville, NC	MDF		$91.35										
Joubert Plywood													
Peachtree City, GA	Plywood												
American Plywood													
Americus, GA	Plywood												
Demopolis, AL	Plywood												
Guntown. MS	Plywood												
Timber Products													
Magnolia, MS	Plywood												
OE Plywood													
Brookhaven, MS	Plywood												
TOTAL		1450.0	$2,610.00	100.0%	1125.00	$1,012.50	100.0%	$430.65	100.0%	4123	$177.19	100.0%	5,918

NB: Data obtained from trade associations. The investigation has not yet obtained data from suppliers on their individual operations.

		Mississippi-Alabama		
		MDF	PB	Plywood
Combined share		69.7%	100.0%	
		3-to-2	2-to-1	
Premerger HHI		4123	5918	
Delta		1653	4082	
Postmerger HHI		5776	10000	
	Pre			
	2FCR	84.8%	100.0%	
	4FCR	100.0%	100.0%	
	Post			
	2FCR	100.0%	100.0%	
	4FCR	100.0%	100.0%	

	Mississippi-Alabama		
	MDF	PB	Plywood
Combined share	67.8%	100.0%	
	3-to-2	2-to-1	
Premerger HHI	4620	5918	
Delta	1017	4082	
Postmerger HHI	5636	10000	

Premerger		
2FCR	91.4%	100.0%
4FCR	100.0%	100.0%
Postmerger		
2FCR	100.0%	100.0%
4FCR	100.0%	100.0%

ii. MDF analysis
    1. 4 plants—3 companies → 3-to-2 merger
    2. High HHIs
        a. Above *PNB*
            i. Combined: 67.8%
            ii. 2FCR: 91% → 100%
            iii. 4FCR: 100% → 100%
        b. Above the 2010 Merger Guidelines threshold for a presumption
            i. Delta: 1017
            ii. Post: 5636
        c. Strong judicial support

	Share	Delta	Post
Anthem	47	537	3000
H&R Block	28	400	4691
Evanston	35	384	2739
UPM	20	190	2990
Heinz	33	510	5285

iii. Particleboard analysis
    1. 3 plants—2 companies → Merger to monopoly
    2. High HHIs
        a. Above *PNB*
            i. Combined: 100%
            ii. 2FCR: 100% → 100%
            iii. 4FCR: 100% → 100%

b. Above the 2010 Merger Guidelines threshold for a presumption
    i. Delta: 4082
    ii. Post: 10000
c. Strong judicial support

b. *Using Method (b)*: Treat the local markets as bidding markets and assign each firm a share of 1/*n*, where *n* is the number of firms in the market

	Mississippi-Alabama		
	MDF	PB	Plywood
Premerger number of firms	3	2	
Share of each firm	33.33%	50.00%	
Combined share	66.7%	100.0%	
	3-to-2	2-to-1	
Premerger HHI	3333	5000	
Delta	2222	5000	
Postmerger HHI	5556	10000	
Pre			
2FCR	66.7%	100.0%	
4FCR	100.0%	100.0%	
Post			
2FCR	100.0%	100.0%	
4FCR	100.0%	100.0%	

    i. Add *PNB*, Merger Guidelines, and judicial support

c. SE region: Summary

	SE Region		
	MDF	PB	Plywood
Combined share	23.0%	35.0%	0.0%
	7-to-6	4-to-3	
Premerger HHI	1864	3522	1836
Delta	180	500	0
Postmerger HHI	2044	4022	1836
Premerger			
2FCR	48.0%	76.0%	
4FCR	79.0%	100.0%	
Postmerger			
2FCR	53.0%	86.0%	
4FCR	84.0%	100.0%	

ii. MDF
3. 12 plants—7 companies → 7-to-6 merger
4. Low HHIs—*PNB* presumption not triggered
a. Below *PNB*
i. Combined: 23%
ii. 2FCR: 48% → 53%
iii. 4FCR: 79% → 84%
b. Below the 2010 Merger Guidelines threshold for a presumption
i. Delta: 180
ii. Post: 1963
iii. "potentially raise significant competitive concerns and often warrant scrutiny"
c. Very low compared to successful DOJ/FTC cases in court

iii. Particleboard
5. 8 plants—4 companies → 5-to-3 merger
6. High HHIs—*PNB* presumption
a. Above *PNB*
i. Combined: 35%
ii. 2FCR: 76% → 86%
iii. 4FCR: 100% → 100%
b. Above the 2010 Merger Guidelines threshold for a presumption
c. Good but not great judicial support
i. In particular, low combined market share—Only four successful DOJ/FTC precedents with a combined market share of 35% or less since 2000
7. Judicial precedent:

	Share	Delta	Post
Anthem	47	537	3000
H&R Block	28	400	4691
Evanston	35	384	2739
UPM	20	190	2990
Heinz	33	510	5285

4. Explicit theories of anticompetitive harm
a. Unilateral effects
i. Auction unilateral effects: NO in MDF/YES in particleboard[20]

[20] Some students missed auction unilateral effects as an applicable theory of anticompetitive harm. The key facts to recognize are (a) the products in each product market are homogeneous; (b) the plants are spatially differentiated; (c) transportation costs are meaningful; and (d) customers tend to purchase from the plant with the lowest delivered cost. These facts tell you that auction unilateral effects are possible, but you need further analysis to determine (a) whether the merging firms have the lowest- and second-lowest delivered cost for any group of customers, and (b) for those customers, whether the third-lowest delivered cost supplier has a significantly higher

1. In both products, the following conditions are satisfied:
    a. Suppliers know the customer's location when bidding for a supply contract
    b. Transportation costs are meaningful for both MDF and particleboard
    c. After selecting the wood type, customers choose the supplier with the lowest delivered cost.
    d. Customers use the products they purchase and do not engage in arbitrage

   This suggests that the lowest delivered cost plant will price its product just below the second lowest delivered cost supplier for that customer → for any customer in which the merging firms have the two lowest delivered cost suppliers, the merger will increase the customer's price to just below the delivered cost of the third lowest delivered cost supplier
2. MDF—Auction unilateral effects are not competitively significant
    a. Woodhaeuser's Oxford, AL plant is only 80 miles from the Delta Mills' Clanton, AL plant.
    b. If Woodhaeuser shipped MDF through Clanton, the transportation cost differential would only be about $0.013 per square foot or less than 1.5% of the price of MDF at the Clanton mill.
    c. One customer testified that this price differential would not have a material effect on her business.
    d. Moreover, judicial precedent (*Sysco*) indicates that such a small predicted price increase may not be statistically different than zero and, in any event, is not compelling evidence of a substantial lessening of competition
3. Particleboard— Auction unilateral effects are competitively significant
    a. Woodhaeuser's Thomson, GA, plant, the nearest third-party supplier to Delta Mills' Aliceville, AL, plant, is over 300 miles from the Aliceville plant.
    b. If Woodhaeuser shipped particleboard through Aliceville, the transportation cost differential would only be about $0.036 per square foot or about 6% of the price at the Aliceville plant.
    c. Delta Mills's customers have expressed concern about this price increase
    d. A 6% price increase is large enough to be deemed a substantial lessening of competition

delivered cost than the second-lowest delivered cost supplier. This analysis will tell you whether there are any auction unilateral effects from the merger and, if so, whether they are competitive significant and so would be a cognizant theory of anticompetitive harm to predicate a Section 7 violation.

ii. No recapture unilateral effects[21]

1. Existence of recapture unilateral effects
    a. No recapture unilateral within MDF or particleboard since these are homogeneous products
    b. However, the merged firm will produce both MDF and particleboard, and Table 3 indicates that there is diversion between the two types of product
        i. Whether this diversion is sufficient to create a competitively significant recapture unilateral effect will be separately analyzed
2. *Quantitative test*. We can test for the competitive significance of recapture unilateral effects between MDF and particleboard quantitatively through a unilateral merger simulation for the two merging firms

    NB: The analysis here assumes that all of the diversion would be from one merging firm to the other at the diversion ratio given in Table 3. This is probably reasonably accurate given the distances to the competitor plants of nonmerging firms. While this should be confirmed in the investigation to the extent possible, this assumption will also give the highest profit-maximizing unilateral price increase. So if the diversion to the other merging firm is less than the diversion ratio in Table 3, the profit-maximizing unilateral price increase would be even lower.

    a. Procedure
        i. Calculate the breakeven $SSNIP^{max}$ for product 1 using the actual diversion ratio to product 2:

$$R_1 = \frac{\$SSNIP_1^{max}}{\$m_2} \Rightarrow \$SSNIP_1^{max} = R_1 \$m_2$$

        ii. Divide $SSNIP^{max}$ by 2 to get the profit-maximizing dollar price increase for product 1
        iii. Divide the profit-maximizing dollar price increase by product 1's price to get the profit-maximizing price increase

[21] Some students concluded that since MDF and particleboard are homogeneous products (and therefore have no inframarginal customers), recapture unilateral effects would not apply. This is true if the merged firm produced no product that has any positive diversion ratio with an overlapping product in the merger since there would be no recapture if the merged firm were to increase prices of the overlapping products. However, if the merged firm would produce other products with positive diversion ratios with the overlapping products, there will be some recapture. The substitute product could be one that only one fo the merged firms produced, or, as here, one that was also an overlapping product. As Table 3 of the hypothetical indicates, there is positive diversion between MDF and particleboard in both directions. Whether there is an actionable recapture unilateral effect, however, depends on whether the likely unilateral price increase is sufficiently high to be competitively significant, which requires its own analysis.

b. Calculation

Product 1 Product 2	MDF Particleboard	Particleboard MDF
$R_{1\to2}$	0.03	0.05
$\$m_2$	\$0.15	\$0.25
$R_1\$m_2$	\$0.0045	\$0.0125
Divided by 2	\$0.0023	\$0.0063
p_1	\$0.90	\$0.60
Profit-max price increase	0.25%	1.04%

c. The profit-maximizing price increase for each product (holding the price of the other product constant) is too small to count as an actionable recapture unilateral effect (see *Sysco*)

3. *Qualitative test*. While a numerical merger simulation was required to receive full credit, you would have received substantial credit for simply observing that the diversion ratios between MDF and particleboard are in small single digits, and therefore the diversion between the products in either direction would be insufficient to yield a competitively significant recapture unilateral effect.

b. Coordinated effects
   i. Two approaches
      1. Merger Guidelines (2-element test)
      2. Presumption of coordinated effects if *PNB* presumption is triggered
   ii. MDF
      1. Mississippi-Alabama market--YES
         a. *PNB* trigger--YES
         b. Premerger susceptibility:
            i. Fungible product
            ii. Only 3 firms—premerger HHI = 4620
            iii. Homogeneous production technology across firms → similar manufacturing marginal costs
            iv. History of cooperation through trade association activity
               1. Work closely with government agencies and other trade groups on manufacturing standards, building codes, and environmental regulations
               2. Cooperate in collecting and distributing monthly aggregated statistics to members on average prices and production costs as well as on production, capacity, and capacity utilization by plant.

c. Postmerger effectiveness:
    i. 3 → 2 merger
    ii. Delta = 1017
    iii. Postmerger HHI = 5636

2. SE market--NO[22]
    a. *PNB* not triggered
    b. No premerger susceptibility[23]
        i. Too many firms (7) to have a reasonable probability of premerger coordinated interaction
            1. Woodhaeuser
            2. WoodFusion Technologies
            3. Southern Timber
            4. Rosebud Forest Products
            5. Delta Mills
            6. Columbia MDF
            7. Sierra Pacific Industries
        ii. Premerger HHI = 1783
        iii. Significant variability among firms in the number and location of mills
    c. Low likelihood that the merger would increase the probability or effectiveness of coordinated interaction
        i. 7-to-6 merger
        ii. Low delta (180) and postmerger HHI (1963)

iii. Particleboard

1. Mississippi-Alabama market[24]
    a. Alternative 1: NO (merger to monopoly)
        i. Merger to monopoly → No coordinated interaction (no one to coordinate with)
    b. Alternative 2: YES
        i. If there are shipments into MS-AL from other states
2. SE market—YES
    a. Premerger susceptibility
        i. Fungible product
        ii. 4 firms
            1. Woodhaeuser
            2. WoodFusion Technologies
            3. Southern Timber
            4. Delta Mills
        iii. Premerger HHI = 3522

[22] If you analyzed a MS-AL or other more localized market, you did not have to analyze the SE market.

[23] Some students concluded that the SE MDF market was susceptible premerger to coordinated interaction. Given the low HHIs, this conclusion needed an argument, if not some supporting authority.

[24] Either alternative is acceptable.

iv. Homogeneous production technology across firms → similar manufacturing marginal costs
v. History of cooperation through trade association activity
1. Work closely with government agencies and other trade groups on manufacturing standards, building codes, and environmental regulations
2. Cooperate in collecting and distributing monthly aggregated statistics to members on average prices and production costs as well as on production, capacity, and capacity utilization by plant.
vi. BUT some variability among firms in the number and location of mills

b. Postmerger effectiveness
i. 4-to-3 merger
ii. Delta = 500
iii. Postmerger HHI = 4022

c. Elimination of a maverick—Not a theory of harm here
i. There is no evidence that either merging firm is a maverick in either product

d. Customer evidence
i. Although not an independent theory of anticompetitive harm, the MOL should have noted in the assessment of the prima facie case any evidence from customers of anticipated customer harm
ii. Generally—"The staff has had only limited success so far in contacting MDF and particleboard customers located in Mississippi and Alabama."
iii. MDF
1. Over customers contacted, no complaints
a. "[K]new and liked Carter Wood, the WFT CEO, and that WFT had always treated them "right" and provided them products at prices that allowed them to be competitive when they sold their finished products downstream."
2. Some customers noted that the Woodhaeuser Oxford, AL, plant was only 80 miles from the Delta Mills Clanton mill, and that if the merged firm increased its prices, they could turn to Woodhaeuser with only a very small transportation cost increase
a. Undermines auction unilateral effects in MDF
b. Does not undermine coordinated effects in MDF
iv. Particleboard
1. Complaints about possible price increases resulting from the merger
a. "They noted that postmerger WFT would be the sole manufacturer in Mississippi and Alabama and that the nearest

competitors would require hundreds of miles of additional shipping to supply them."

b. One customer calculated that the cost differential to be supplied by the Woodhaeuser Thomson, GA, mill (the nearest third-party mill) would add over 300 miles of additional shipping and cost about $0.036 per square foot in additional shipping costs (or about 6% of the price of particleboard at the mill).

v. Lack of interest by AGs

1. Neither the Mississippi nor Alabama attorney general expressed any concern in the transaction, but this is not surprising or particularly relevant since neither state has been active in antitrust enforcement.

5. Defenses

a. Entry/expansion/repositioning—Not a defense

i. Entry

1. History of entry
   a. MDF: No entry in the region in the last 20 years
   b. Particleboard: No entry in the region in the last 25 years
2. Significant industry excess capacity
   a. MDF: 75% capacity utilization
   b. Particleboard: 61% capacity utilization
3. High construction costs:
   a. MDF: >$150 million
   b. Particleboard: ~ $100 million
4. No evidence of any firm considering entry into either product

ii. Expansion

1. Significant excess capacity in third-party firms indicates the possibility of an expansion defense[25]
2. BUT no evidence that any third-party firm would expand production in either product as a result of a SSNIP
3. AND no evidence that any expansion would—
   a. Negate auction unilateral effects in either product
   b. Offset the incentives for coordinated effects in particleboard

iii. Repositioning

1. No opportunity for repositioning—Requires large, specialized plants for each product—no possibility of supply-side switching

b. Power buyers—Not a defense

i. Manufacturers sell to large multiplant furnishing companies and nationwide construction material distributors, but there is no evidence or explanation of

[25] These defenses look to the conduct of third parties in the wake of the merger, not the conduct of the merging firms. An expansion defense looks to whether third-party firms would expansion their production to "fill the hole" in supply created by the anticompetitive reduction in output of the merged firm. Some students analyzed whether the merged from would expand its output. This is properly analyzed under the efficiencies defense, not the expansion defense.

how customers of the merging firms can protect themselves from a price increase resulting from the merger, especially given (1) the delivered cost disadvantages of dealing with nonmerging firms, and (2) the absence of entry, expansion or repositioning possibilities.

1. The MDF local market may require more analysis—or at least raise questions to be investigated—of the excess capacity of the Woodhaeuser MDF plant in Alabama. However, the defense here will likely fail because of the strong coordinated effects theory in this market.

ii. Manufacturers also sell to small local single facility furnishing companies and construction material distributors, and there is no evidence or any reason to believe that these companies have the bargaining power to protect themselves

c. Efficiencies—Not a defense
   i. MDF
      1. Fixed costs: No evidence
      2. Marginal costs: No evidence
   ii. Particleboard
      1. Closing of the Aliceville particleboard plant
         a. Fixed cost—Not cognizable
         b. Verifiability—Can go either way on this[26]
         c. There is no evidence of sufficiency
            i. Generally, no evidence of sufficiency even if 100% of savings are passed on to customers
            ii. No evidence of any reason to pass on savings, especially under the auction unilateral effects
         d. Results from an anticompetitive aspect of the acquisition
      2. Marginal costs—No evidence of any marginal cost reductions

d. Failing company—Not a defense[27]
   i. Both merging firms are operating profitably: 2022 profits—
      1. WFT
         a. MDF: $65.25 million
         b. Particleboard: $42.19 million
         c. TOTAL: $107.44 million
      2. Delta Mills

[26] Some students argued that the claimed savings from the closing of the Aliceville plant failed the verifiability requirement. This is fine as far as what the investigation has revealed so far, and I credited this conclusion. But since the savings stems from the complete closing of one plant and a shifting of production to two other plants, it should not be very difficult for the merging parties to produce a savings analysis that will be verifiable. Consequently, it is important to address the sufficiency and nonanticompetitiveness requirements in the efficiencies analysis and not rely on the lack of verifiability alone.

[27] The rationale behind the failing company defense is to keep the firm's productive *assets* operating in the market, not as some students thought the original owners.

a. MDF: $18.13 million
b. Particleboard: $16.88 million
c. TOTAL: $35.00 million

ii. No evidence of either company—
1. would be unable to meet its financial obligations in the near future
2. would not be able to reorganize successfully under Chapter 11 of the Bankruptcy Act
3. was shopped to find a less anticompetitive buyer

iii. Other firms bid for Delta Mills, so there would be other less anticompetitive buyers

6. "Litigate the fix"
a. Current DOJ policy: Do not settle investigations with consent decrees→only option for the merging parties is to "litigate the fix"
b. DOJ view:
i. A "fix" requires a complete divestiture of one party's business in each of the two problematic markets:
1. *MDF*: DM's Clanton plant or both WFT mills: Necessary to negate—
a. Coordinated effects in the Mississippi-Alabama market
2. *Particleboard*: DM's Aliceville plant or both WFT plants: Necessary to negate—
a. Auction unilateral effects in
b. Merger-to-monopoly in the Mississippi-Alabama market
c. Coordinated effects in the SE market [if you found a SE market]

ii. A "fix" of this magnitude is not in WFT's financial interest
1. WTF makes more profits with its plants than DM, so there probably is no "trade up" opportunity
2. WFT's motivation for the transaction is the acquisition and closing of the Aliceville particleboard plant and the reallocation of Aliceville's production to the adjacent WFT particleboard plants
3. Any fix involving Aliceville should require the merging parties first to reopen the plant
4. WFT has not proposed any fix

iii. There is no fix to litigate other than the termination of the transaction

iv. CAUTION: The courts have not had occasion to rule on whether a complete divestiture of one party's business in a problematic market is required if a partial divestiture would negate any substantial lessening of competition in that market
1. Need further investigation of any trade-up opportunity to eliminate the possibility that the merging parties may attempt to litigate a partial divestiture fix

7. Further investigation[28,29]
    a. Plant details
        i. For each MDF and particleboard plant in the SE Region, obtain:
            1. The capacity of the plant
            2. Annual unit production for each of the last three years
            3. Annual dollar sales for each of the last three years
    b. Market definition
        i. For MDF and particleboard separately, subpoena data from each merging firm for each customer, including—
            1. Location
            2. Supplying plant
            3. Total purchases by units and dollar volume for each of the last three years

            This will permit a more precise geographic market definition using the intersection of the 75% draw areas of the merging firms (à la *Sysco*). Call this intersection the "football."
    c. Market participants
        i. For MDF and particleboard separately, subpoena data from each third-party firm that could overlap with the intersection of the 75% draw areas of the merging firms, including—
            1. Location
            2. Supplying plant
            3. Total purchases by units and dollar volume for each of the last three years

            This will permit a more accurate identification of the market participants and their market shares for the HHI calculations and analyzing coordinated effects
    d. *PNB* presumption
        i. See (a) and (b) above
    e. Unilateral effects
        i. Auction unilateral effects
            1. For MDF and particleboard separately, obtain data for each customer in the intersection of the 75% draw areas of the merging firms—
                a. The merging firm that supplies that customer
                b. Separately for each of the last three years, the total delivered cost to that customer from the supplying merging firm, the quantity supplied, and the dollar amount paid
                c. The nearest third-party supplier
                d. The driving distance to that supplier

[28] Most students appeared to be running out of gas (or time) at this point and I did not grade this section very rigorously. But students who made goods points on evidence that needed to be gathered as the investigation continues received extra credit.

[29] Some students did not isolate the questions for further investigation into a separate section but rather noted them thoguhout the memorandum as they arose. Generally, if you are asked a specific question, the answer to that question should be in a separate section of the MOL. However, in grading I accepted either approach.

e. Separately for each of the last three years, the total delivered cost for that third-party supplier to supply that customer in the volumes the customer purchased from the merging firm supplier

This will permit an auction unilateral effects simulation of the price increases and dollar overcharges in the "but for" world where the merger had taken place before the customer made its purchases

ii. Recapture unilateral effects

1. For MDF and particleboard separately and for each of the last three years, obtain data from each of the merging firms for each customer in the intersection of the 75% draw areas of—
    a. Each bid made by the merging firm for the customer's business
    b. The date of the bid, the quantity to be supplied, the total FOB price, and, if known or estimated, the transportation costs to the customer
    c. What other firms bid against the merging firm for that business
    d. Which firm won the bid and, if known, at what price?
2. For MDF and particleboard separately and for each of the last three years, obtain data from each customer in the intersection of the 75% draw areas of—
    a. Each "request for proposal" (RFP) made by the customer
    b. The date of the RFP and the quantity to be supplied
    c. What firms bid in response to the RFP, including their FOB bid price, and, if known, the total transportation costs of supplying the bid
    d. Which firm won the bid and, if known, at what price?

This detailed win-loss data will permit a more accurate estimation of the diversion ratios and therefore a more accurate estimation of the magnitude of any recapture unilateral effects

f. Coordinated effects

i. Use the information in response to (a) and (b) to better identify the participants and their respective market shares in the relevant market to access coordinated effects

g. Elimination of a maverick

i. Confirm with the merging firms in depositions of their representatives and with their respective counsel either—
    1. Neither party regards either merging firm as a disruptive force in the marketplace (i.e., a "maverick")
    2. If they do believe that one or both of the merging firms are mavericks, the reasons and marketplace evidence supporting this contention

h. Entry/expansion/repositioning

i. Confirm with the merging firms in depositions of their representatives and with their respective counsel either—
    1. They are not advancing an entry/expansion/repositioning defense, or

2. If they are advancing such a defense, then
    a. The names of each firm they believe may enter, expand, or reposition as a result of the merger
    b. For each named firm, the nature, magnitude, and timing of the entry, expansion, or repositioning they believe is likely to occur and the basis for their belief

ii. For each named firm above, obtain deposition testimony or affidavit under penalty of perjury—
1. Whether the firm would consider entering, expanding, or repositioning
    a. as a result of the merger, or
    b. If FOB prices were to increase by a SSNIP of 5% or, alternatively, 10%
2. If the firm would consider entering, expanding, or repositioning—
    a. What factors would the firm consider in making its decision?
    b. How quickly would the firm make its decision?
    c. Once the decision was made, how long would it take for the firm to come online?
    d. What steps would the firm have to take to come online?
    e. How much would it cost?
    f. How much additional product would the firm produce as a result of the entry, expansion, or repositioning?

i. Power buyers
i. Confirm with the merging firms in depositions of their representatives and with their respective counsel either—
1. They are not advancing a power buyer defense, or
2. If they are—
    a. What is the mechanism they contend will enable a "power buyer" to protect itself from a price increase or other anticompetitive effect of the merger?
    b. The basis for their contention that every customer is a "power buyer" that will enable it to protect itself from a price increase or other anticompetitive effect of the merger?

j. Efficiencies
i. Separately for MDF and particleboard, confirm with the merging firms in depositions of their representatives and with their respective counsel either—
1. The firm is not advancing an efficiency defense, or
2. If it is, then—
    a. The nature of the efficiency—fixed or marginal cost, and any quantification
    b. The relevant market in which the efficiency will operate
    c. The basis for the firm's contention that the claimed efficiency is in that relevant market—
        i. Merger specific
        ii. Verifiable

iii. Sufficient in timing and magnitude to negate any anticompetitive effect from the merger
iv. Not resulting from an anticompetitive effect of the merger

k. Failing firm
    i. Separately for MDF and particleboard, confirm with the merging firms in depositions of their representatives and with their respective counsel either—
        1. The firm is not advancing a failing firm defense, or
        2. If it is—
            a. Which of the merging firms (or plants) is failing within the meaning of the defense
            b. The reasons and supporting evidence why the firm would be unable to meet its financial obligations in the near future
            c. The reasons and supporting evidence why the firm would not be able to reorganize successfully under Chapter 11 of the Bankruptcy Act
            d. The efforts, if any, to find an alternative buyer for the firm (or the plant)

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8. HSR gun-jumping[30]
   NB: This was a wild card. I gave extra credit for spotting this HSR violation but did not deduct for missing it.
    a. "Although Delta Mills' Aliceville particleboard plant is operating profitably and Delta Mills had no plans to close the plant, after the signing of the purchase agreement, WFT secretly prevailed on Delta Mills to shut down the plant before the closing of WFT's acquisition and send its customers to WTF." (p. 13)
        i. This statement is ambiguous. I had intended it to mean that the Aliceville plant was already closed, but the sentence does not quite say that.
    b. The WFT/Delta Mills merger was subject to the reporting and waiting period requirements of the HSR Act
        i. The purchase price was $280 million—above the thresholds for prima facie reportability

[30] I modeled this part of the hypothetical on the *Flakeboard* materials in the Unit 4 reading materials. Since we did not cover it in the course—I will next year—you were not responsible for knowing that WFT's involvement with Delta Mills in the premerger closing of the Aliceville plant also violated Sections 1 and 2 of the Sherman Act. Moreover, in these circumstances, (a) even under the prior willingness to accept consent settlements to conclude investigations, the DOJ would not settle the Section 7 investigation here no matter what was offered, and (b) the DOJ would seek civil injunctive relief under either the HSR Act or the Sherman Act (or both) requiring the WFT and Delta Mills under the supervision of a court-appointed monitor to reopen and the shuttered Aliceville plant and then then divest it if a buyer could be found to operate the plant.

ii. More definitively, the transaction was in the midst of a second request investigation, which could only occur if the transaction was HSR reportable (and reported)

c. The HSR Act prohibits the acquisition of voting securities or assets in a reportable transaction unless the transaction has been duly reported and the statutory waiting period has expired or been terminated.
    i. The HSR regulations provide that a person holds (acquires) voting securities or assets when it has a "beneficial interest" in them
    ii. The agencies take the position that a person has a beneficial interest in the voting securities or assets of the target company within the meaning of the HSR Act when the person can exercise a material degree of management influence on the current (preclosing) operations of the target
        1. Especially decisions regarding how to compete in the marketplace
        2. Influencing important individual decisions is sufficient (e.g., influencing whether the target will bid on an upcoming contract or continue to invest in the construction of a plant)
d. DM's closure of the Aliceville plant:
    i. This was an important DM decision since it involved one of DM's three plants and accounted for 48% of DM's profits
    ii. DM had no prior plans to close the plant and closed it only at the behest of WFT
e. WTF's involvement in the closure of the Aliceville plant constitutes an influencing of an important DM decision. It therefore constitutes the acquisition of a reportable beneficial interest in DM before the expiration of the HSR Act waiting period in violation of the HSR Act.