

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

Professor Dale Collins

Date Exam Opens: Tuesday, December 7, 2021, at 8:30 am. ET
Date Exam Closes: Thursday, December 16, 2021, 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 7, 2021, and must be submitted five (5) hours after it is downloaded but no later than 6:30 pm ET on Thursday, December 16, 2021. 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 two questions. Each 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. Each question will be weighted equally for grading purposes. 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 each 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. 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 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.
 15. 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.
 17. 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.

Georgetown Law
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Question 1: Hydrogen Peroxide Merger

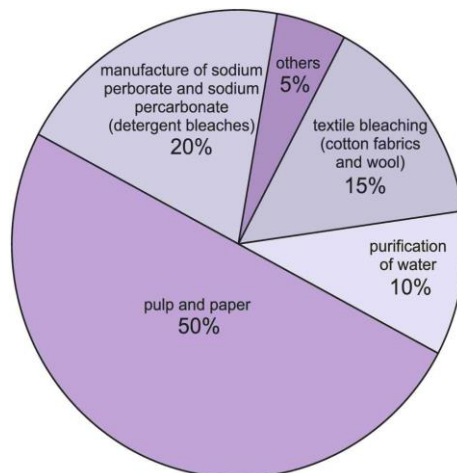
You are an associate in Finch & Wilk. Bvonik Chemicals Corporation, a client of the firm, is considering making an offer to acquire HP Specialty Chemicals Corporation for \$1.1 billion in cash. Bvonik and HP are the largest and third-largest sellers, respectively, of standard grade hydrogen peroxide (H_2O_2) in the United States.

Jonathan Wilk, a partner with whom you work, has been asked by Bvonik to provide them with a preliminary antitrust risk assessment of the transaction. Wilk has told Bvonik that the acquisition most likely would be reviewed by the Federal Trade Commission. Bvonik is seeking Wilk's advice on whether the parties can successfully convince the FTC to close the investigation, either cleanly or with some mutually acceptable consent order. Wilk has asked you to draft the memorandum to the client to provide this preliminary risk assessment. In particular, he would like you to address (1) whether the transaction is likely to be investigated or challenged and by whom, (2) if investigated or challenged, the likelihood that Bvonik would be able to successfully defend on the merits; and (3) if unsuccessful, the implications for the transaction. Wilk noted that it was premature for the memorandum to address any contractual risk-shifting provisions until the initial risk assessment had been completed and vetted with the client.

The "loop" within Bvonik on this possible transaction is very small, and the company has been able to provide you with only a limited amount of information and data. What follows is the information you have been able to obtain from the client and from public sources. Wilk asks that, for the purpose of your memorandum, you accept the client's estimates as fact but be sure to note this assumption in your memorandum.

Hydrogen peroxide. Hydrogen peroxide, a commodity chemical recognized by the American Chemical Society, is a powerful oxidation, sterilization, and bleaching agent. For most end uses, there are no effective substitutes. Hydrogen peroxide products are used in a wide variety of industries, including pulp and paper, food packaging, agriculture, chemical synthesis, mining, personal care. Small amounts are even used as rocket fuel. The pulp and paper industry uses about 50% of the hydrogen peroxide produced in North America, primarily for bleaching pulp and deinking recycled paper.

Figure 1.1
End Uses of Hydrogen Peroxide



Today, hydrogen peroxide is manufactured almost exclusively by the anthraquinone process, which the German chemical company BASF developed in 1939. Manufacturers move a working solution through a hydrogenation, oxidation, and extraction process involving dedicated specialized equipment. The process produces a noncommercial “crude” hydrogen peroxide. Next, manufacturers dilute the crude with water to create homogeneous commercial “standard grade” solutions of 35%, 50%, and 70% hydrogen peroxide by weight.¹ Manufacturers stabilize the solution with very small amounts of chemical additives (usually tin) to inhibit the hydrogen peroxide from decomposing. Stabilizer packages can be specific to end use, but all manufacturers have stabilizer packages for all significant end uses. The manufacturing technology is mature and has seen no innovation for several decades. Manufacturing marginal costs for standard grade products (all measured by their hydrogen peroxide content) are constant across all plants and average about \$803 per ton.

Figure 1.2
Hydrogen Peroxide Manufacturing Plant



All manufacturers produce all standard concentration levels of hydrogen peroxide on the same equipment. Manufacturers can easily and readily change their production mix between different standard grade concentrations and additives with essentially no switching costs. Each manufacturer’s product portfolio of standard grade hydrogen peroxide covers the entire range of end-use applications.

Manufacturers deliver standard grade hydrogen peroxide directly to customers in bulk, by either rail tank car for long distances or tank truck for shorter distances. The United States Department of Transportation classifies hydrogen peroxide solutions greater than 8% by weight (and so

¹ By comparison, medical grade hydrogen peroxide that consumers may purchase over the counter (OTC) is a 3% concentration.

including all standard grades) as a Class 5.1 hazardous oxidizing substance and regulates its transportation accordingly. The Environmental Protection Agency (EPA) and the Occupational Health and Safety Administration (OSHA) also regulate hydrogen peroxide solutions. As a result of the existing excess capacity in the industry and the barriers posed by environmental permitting, no new standard grade hydrogen peroxide plants have been built in the last 20 years and none are expected in the foreseeable future.

Standard grade hydrogen peroxide is an intermediate product that has no immediate end uses. Rather, manufacturers sell standard grade hydrogen peroxide to third-party chemical companies that further process the chemical to make hydrogen peroxide-based “specialty grade” products that they sell to end-use purchasers.²

Hydrogen peroxide suppliers. Five companies sell standard grade hydrogen peroxide to customers in the United States out of ten plants. Table 1.1 gives the details.

Table 1.1
Total Sales by Plant

	Total Sales		U.S. Exports		Capacity		Excess
	Tons	Revenues	Tons	Revenues	Tons	%Utilization	
Bvonik							
Mobile, AL	128,000	\$140.8			160,000	80%	32,000
Portland, OR	110,184	\$132.0			125,000	88%	14,816
Maitland, Ontario	48,583	\$60.0	18,700	\$23.1	75,000	65%	26,417
HP							
Bayport, TX	71,579	\$74.8			74,000	97%	2,421
Vancouver, BC	52,337	\$62.7	26,700	\$32.0	100,000	52%	47,663
Solvay							
Deer Park, TX	101,273	\$111.4			120,000	84%	18,727
Longview, WA	112,938	\$135.3			135,000	84%	22,062
Arkema							
Memphis, TN	56,000	\$61.6			90,000	62%	34,000
Becancour, Quebec	40,486	\$50.0	8,000	\$9.9	60,000	67%	19,514
Nouryon							
Columbus, MS	44,000	\$48.4			65,000	68%	21,000
TOTAL	765,380	\$877.0	53,400	\$65.0	1,004,000	76%	238,620

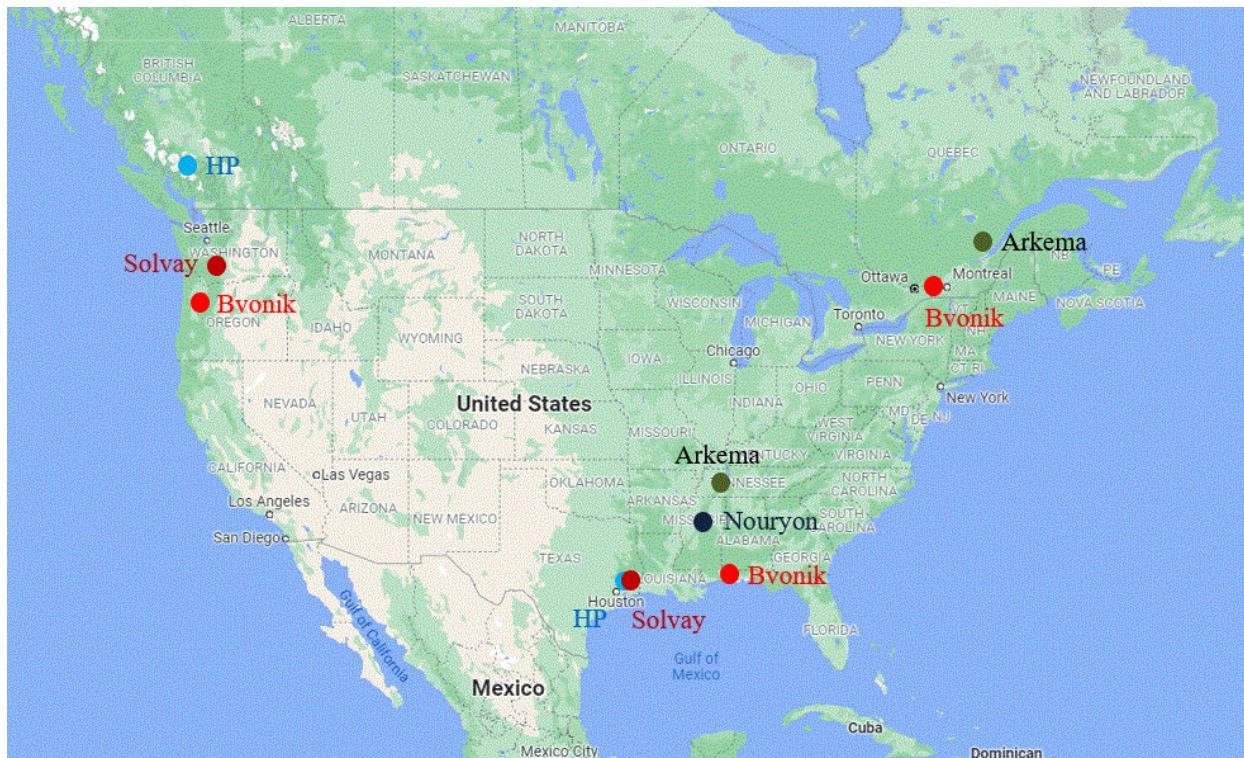
As Table 1.1 shows, seven plants are located in the United States. There are also three plants located in Canada that sell into the United States. There are no other plants in Canada and there are no plants in Mexico. Most plants have some geographic separation from the other plants. The exception is HP’s Bayport plant and Solvay’s Deer Park, TX plant, which are only 10 miles apart.

The five companies listed in Table 1.1 belong to the Hydrogen Peroxide Manufacturers Association (HPMA). This trade association and its members are active in dealing collectively with the DOT, EPA, OSHA, and other government agencies that regulate the manufacture, transportation, or use of hydrogen peroxide products. They are also active in dealing with the U.S. Congress, the United States Trade Representative, and the Department of Commerce on import, export, and tariff issues. Finally, the HPMA collects data from members and distributes

² **Note to students:** For the purpose of this exam question, we will assume (contrary to fact) that standard grade hydrogen peroxide manufacturers are not vertical integrated into specialty grade chemicals.

monthly aggregated (noncompany specific) statistics to its members on average prices and production costs as well as on production, capacity, and capacity utilization by plant.

Figure 1.3
Locations of Hydrogen Peroxide Manufacturing Plants in North America



Sale of standard grade hydrogen peroxide. Standard grade hydrogen peroxide suppliers compete for customers through bids for high-volume, multiyear contracts at delivered prices. A customer publishes a request for proposal (RFP) for a given location, specifying the standard grade it wants to purchase, its volume requirements, and contract term. The customer almost always engages in further negotiations with two or more bidders over the bid price to “play” one bidder off another and thereby obtain a lower final price. When a manufacturer supplies a customer out of multiple plants, prices are negotiated individually for each plant. For any RFP, the winning bidder quickly becomes known, usually from an announcement or comment from the customer or the winning bidder. Failing that, it is easy to observe the supplier’s name on the tank cars delivering the product.

While transportation over very long distances can be cost prohibitive, manufacturers commonly serve customers efficiently and at competitive terms within a radius of approximately 800 miles around a production plant in the Southern and Central United States and up to 1000 miles in the Pacific Northwest and in the Northeast and Western states. As a result, all companies that supply in the region where the customer is located will respond with bids. The HPMa has separate committees for each of these three regions.³ Customers consume all the standard grade hydrogen

³ To be precise, the industry defines these regions as follows:

peroxide they purchase as an input to specialty products they produce; customers do not purchase and resell standard grade hydrogen peroxide.

Apart from the occasional difference in additives, all standard grades of hydrogen peroxide are chemically identical except for concentration. All things being equal, the price of a 30% solution of hydrogen peroxide would be half as much as a 60% solution. This allows the industry to calculate prices per a theoretical ton of 100% hydrogen peroxide. The following table gives industry averages published by the HPMA by region on price, cost, and percentage margin per ton of H₂O₂ contained in the product:

Table 1.2
Industry Averages by Region
(on 100% H₂O₂ basis)

	Price	Margin	Cost
Pacific Northwest/Western	1198	0.33	803
Northeast	1235	0.35	803
Southern/Central	1100	0.27	803

So, for example, the average price of 70% standard grade hydrogen peroxide in the Pacific Northwest would be $\$1198 \times 70\%$ or $\$836.60$ per ton. As noted, these numbers are industry averages. The HPMA reports, however, that prices, margins, and costs for all members are, with rare exceptions, within 3% points up or down from the industry average. So, for example, the maximum margin earned by any plant in the Pacific Northeast/Western region would not be more than 36% and the minimum margin would be no less than 30%. Differences among suppliers result primarily from the absorption of some freight costs to be competitive for a customer as well as from differences in the production efficiencies of the various plants.

Customers are very sensitive to differences in prices among available hydrogen peroxide suppliers. Standard grade hydrogen peroxide is a standardized homogeneous product and customers will choose suppliers based on the lowest delivered cost.

U.S. tariffs on hydrogen peroxide are only 2.6%, and Canadian plants compete for U.S. customers within 1000 miles of their plants in the Pacific Northwest and in the Northeast. Last year, hydrogen peroxide imports from Canada accounted for 9.7% by revenues and tons of total consumption by U.S. customers in the Pacific Northwest. When for exchange rate or other reasons, prices from U.S. plants in either area increase by 5% relative to those offered by the Canadian plants, U.S. customers will immediately shift at least 14% of their purchases from U.S. plants to Canadian plants (which have the capacity to supply this demand). The reverse is also true. U.S. plants compete for Canadian customers. Plants in the Central and Southern United

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont in the United States and Ontario and Quebec in Canada.

Pacific Northwest/Western: Arizona, California, Idaho, Oregon, Montana, Nevada, Utah, Washington, and Wyoming in the United States and Alberta, British Columbia, Manitoba, and Saskatchewan in Canada.

Southern/Central United States: Alabama, Arkansas, Colorado, the District of Columbia, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Mississippi, North Carolina, North Dakota, Nebraska, New Mexico, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Virginia, Wisconsin, and West Virginia.

States, however, are too far from consumers in the Pacific Northwest and Northeast to supply them competitively even if prices in those regions were to increase by 5%.⁴

There are no hydrogen peroxide plants in Mexico within 1000 miles of the United States, so there are no imports into the Southern and Central United States even if U.S. prices in that region increased. Likewise, the U.S. plants in the Pacific Northwest and the three Canadian plants are too far from consumers in the Southern and Central United States to supply them competitively even if prices in that region were to increase by 5%.

Table 1.3 summarizes U.S. production, imports, exports, and consumption:

Table 1.3
U.S. Production and Consumption

	Tons	Revenues
United States production	623,974	\$704.3
Exports to Canada	17,800	\$21.3
Imports from Canada	53,400	\$65.0
Total U.S. consumption	659,574	\$747.9
Pacific Northwest	232,022	\$278.0
Northeast	26,700	\$33.0
Southern/Central	400,852	\$437.0

On the other hand, because hydrogen peroxide has no effective substitutes for most end uses, aggregate demand is very inelastic. In particular, customers of standard grade hydrogen peroxide in any region of the country would shift less than 0.1% of the quantities they currently purchase to other products if the prices of hydrogen peroxide from all realistic suppliers were to rise by 5%.

Upon questioning, Bvonik representatives revealed that prices in all regions tend to “ratchet up” on pricing. That is, when an input price such as electricity increases, manufacturers quickly increase prices to cover cost increases. But when input prices decrease, manufacturers are slow to decrease prices and rarely decrease prices to the full extent of the input cost decline. Bvonik also revealed that HP appears to price aggressively in the Central/Southern region to keep its Bayport, TX plant fully loaded. Bvonick believes that HP’s average price in the Central/Southern region is only \$1045 per ton, 5% points lower than the industry average. By contrast, Bvonick’s average price in the region is around \$1100 per ton, the industry average. Using this aggressive pricing strategy, HP has been able to maintain a 97% capacity utilization compared to a 76% nationwide industry average. HP, however, does not follow an aggressive pricing strategy in the Pacific Northwest/Western region and has only a 52% capacity utilization in its Vancouver plant.

The deal. Bvonik is considering a purchase price of \$1.1 billion in cash for HP. Bvonik estimates that this represents a 32% premium over HP’s going concern value, which Bvonik executives say is materially less than the average premium of 36% that has been recently paid for chemical companies.

⁴ U.S. plants in the Pacific Northwest also compete for customers in Canada within 1000 miles of the plant. When prices from Canadian plants increase relative to prices charged by U.S. plants within 1000 miles of the Canadian customer, Canadian customers will shift about 14% of their purchases from Canadian plants to U.S. plants.

Bvonik strongly believes that the deal will be profitable for its shareholders given the significant cost savings that will result from the transaction and the low premium Bvonik would pay.

First, Bvonik believes it can eliminate \$22 million annually in fixed costs by closing down HP's headquarters, eliminating HP's executive officers and directors, and consolidating all back office, sales, and marketing operations into Bvonik's existing infrastructure.

Second, Bvonik believes it can significantly improve the productive efficiency of both of HP's plants. Although HP uses the same technology and equipment as other manufacturers, HP is well-known in the industry as having the least efficient plants. Bvonik believes that HP's average cost of producing hydrogen peroxide is \$815 per ton or about 1.5% above the industry average. By contrast, Bvonik's is perhaps the most efficient of the hydrogen peroxide producers, with an average cost of \$763 per ton or about 5% points lower than the industry average. Bvonik believes that these differences in operating efficiencies result from differences in the unpatented trade secret know-how used to reduce raw materials waste and energy consumption. With a small investment to add some additional monitoring and testing equipment to HP's plants, Bvonik believes that it can use its existing know-how and reduce HP's average marginal cost in both HP plants to about \$775 per ton or about 3.5% below the industry average—not quite down to Bvonik's costs but still a significant reduction of \$40 per ton. If successful, this would increase the combined profits by \$5.0 million per year on HP's current annual production of 123,916 tons.

Bvonik's CEO says that the below-average deal premium and the annual recurring synergies of \$27.0 million make the deal a profitable investment.⁵

Finally, when asked about how customers would respond to the deal, Bvonik's CEO said that the reactions were likely to be mixed. Purchasing agents will be reflexively against the deal because it removes a competitor. More senior executives are more likely to be indifferent because standard grade hydrogen peroxides tend to constitute a small proportion of the cost of many of the specialty goods their companies produce and sell. A notable exception may be the pulp and paper industry, where hydrogen peroxide is a material cost in paper production.

⁵ Bvonik's financial records show that its weighted average cost of capital is 8%.

Question 2: Chicken Feed Merger

You are an associate in Able & Baker LLP. Partner Sophia Costello has just received a call from Melissa Smith, the CEO of National Chicken Feed Corporation (NCF), a large independent (nonintegrated) multimill manufacturer and seller of chicken feed in the United States and a longtime client of the firm. Smith has spoken informally over dinner with Walter Henderson, the CEO and majority owner of Henderson Mills, a smaller multimill manufacturer and seller of chicken feed in southern Georgia, southern Alabama, and Florida, about acquiring Henderson for \$210 million in cash. Smith says that Henderson appears very interested.

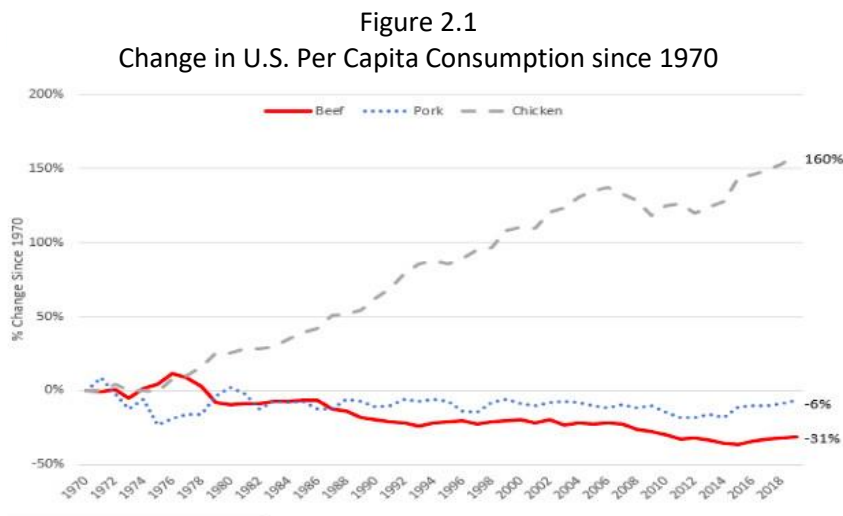
Before proceeding with more formal negotiations, Smith would like the firm to prepare a plan for performing a full merger antitrust analysis. Although NCF has acquired other chicken feed companies, all have been in areas where NCF does not operate. If the transaction proceeds, this will be NCF's first acquisition of a competitor. Smith does not know much about merger antitrust law, but from what she reads in the newspapers about the new activism of the antitrust enforcers in the Biden administration (especially at the Federal Trade Commission), she has some concerns. Smith believes she and her senior executives need some education about merger antitrust law and a plan for conducting an antitrust analysis that will give her some confidence in predicting the likely outcome of any federal merger antitrust review. (Smith is a former management consultant with McKinsey & Co. and so likes detailed plans.) Smith also would like any suggestions the firm may have about what they should be saying—or not saying—in their documents and emails as they continue their internal analysis of the transaction. Finally, Smith would like an estimate of how much this merger antitrust analysis will cost.

Costello has asked you to prepare the first draft of a memorandum to Smith responding to all her requests except for the cost estimate (Costello says she will do that once the plan is finalized). In particular, Costello would like you to draft a memorandum on how to conduct the antitrust analysis to determine what are the product and geographic relevant markets in issue, who are the participants in this market and what are their market shares, whether the *PNB* presumption is triggered and what additional theories of anticompetitive harm might apply against the transaction. Costello also would like to address how we should identify and assess any downward price pressure defenses the parties might have. Costello believes it would be most helpful to Smith if, for each element of the prima facie case and each defense, the memorandum briefly explained the judicial and merger guidelines standards and then listed the questions that need to be answered to assess the application of these standards to the transaction. If the facts as we know them suggest how the law might apply to an element—say, for example, the dimensions of the relevant product market—the memorandum should identify the possible application as well as questions we should ask to test the suggestion. Smith has not asked for any thoughts on what risk-shifting provisions Henderson might demand or how NCF should respond to them, and Costello thinks it would be premature to address risk-shifting provisions in the memorandum since no antitrust analysis has yet been conducted.¹

This is what you know about the chicken feed business from your past work with Henderson and from public sources:

¹ Smith says that we should assume when preparing the plan that Henderson will be fully cooperative in answering our questions and providing documents and data for our review.

Hen and egg production were common on most farms at the turn of the century and production was primarily for home use. Before the 1950s, most farms raised chickens, but meat was a byproduct of the egg enterprise. Since then, however, consumption of chicken meat and eggs has skyrocketed. In 2017, the year of the most recent Census of Agriculture, farmers in the United States produced 8.9 billion birds for meat and 109.2 billion eggs.² That year, U.S. sales of poultry and eggs totaled \$49.2 billion and accounted for about 12.7% of total U.S. agriculture sales.³



Source: Glynn T. Tonsor, Jayson L. Lusk & Ted C. Schroeder, Impacts of New Plant-Based Protein Alternatives on US Beef Demand (Cattlemen’s Beef Promotion and Research Board Jan. 17, 2021), <https://www.agmanager.info/livestock-meat/meat-demand/meat-demand-research-studies/impact-new-plant-based-protein-0>.

Chickens fall into two basic categories: meat-producing (called “broilers”) and egg-laying (“layers”). Broilers are very efficient at converting feed to meat, producing approximately one pound of bodyweight for every two pounds of feed they consume. In 2017, the United States produced more than 8.9 billion broiler chickens with a value of roughly \$31.7 billion.⁴ A healthy laying hen will lay eggs for several years. A hen begins to lay at approximately 18 weeks of age and can lay up to 250 eggs the first year.⁵ Egg counts will naturally decrease each following year, with hens entering egg retirement around years six or seven.⁶

² U.S. Dep’t of Agriculture, National Agricultural Statistics Service, *2017 Census of Agriculture Highlights: Poultry and Egg Production* (July 2020) (number of chicken farms), <https://www.nass.usda.gov/Publications/Highlights/2020/census-poultry.pdf>; U.S. Dep’t of Agriculture, National Agricultural Statistics Service, *Agricultural Statistics 2020*, at VIII-28, tbl. 8-38 (meat). VIII-33, tbl. 8-48 (eggs) (2020). The Department of Agriculture conducts the Agriculture Census every five years.

³ *2017 Census of Agriculture Highlights*, *supra* note 2.

⁴ *Agricultural Statistics 2020*, at VIII-28 (Table 8-38), *supra* note 2.

⁵ Patrick Biggs, *How Long Do Chickens Lay Eggs? Goals for Laying Hens* (undated), <https://www.purinamills.com/chicken-feed/education/detail/how-long-do-chickens-lay-eggs-goals-for-laying-hens>.

⁶ *Id.*

While 164,099 farms sold poultry and eggs in 2017, only 44,260 (27%) specialized in poultry and egg production.⁷ These specialized farms, however, accounted for 98.4% of all poultry and eggs sold.⁸ Specialized chicken farms are scattered across the country. Three states (Georgia, North Carolina, and Arkansas) sold more than \$5 billion in poultry and eggs in 2017, accounting for 32.5% of total sales. Another 15 states (including Alabama) had between \$1.0 and \$4.9 billion in poultry and eggs sales. These 18 states accounted for 88% of poultry and eggs sales in 2017.⁹

About 97% of specialized chicken farms are family farms.¹⁰ The average specialized farm had 134 acres, average sales of \$1,133,207, and net cash farm income of \$389,897.¹¹ The production costs of farms specializing in poultry and egg production totaled \$33.3 billion. The largest expense item was feed, which totaled \$18.4 billion, or 55% of total production costs.¹²

On a given day, farm inventory included 1.6 billion broilers and 368 million layers. In 2019, broilers consumed 60.8 million tons of feed, while layers consumed 19.2 million tons.¹³ Farmers purchase their chicken feed from chicken feed mills. These mills manufacture chicken feed using various mixes of readily available raw materials, including ground corn, corn offal, soybean meal, distillers' dried grains with solubles (DDGs), wheat offal, fish meal, bone meal, table salt, vitamins, l-lysine, and d-methionine. The production process for chicken feed is simple and straightforward: receiving and cleaning the raw materials, crushing the raw materials, batching, mixing, pelleting, and packaging. The production equipment for manufacturing poultry feed is readily available from commercial equipment suppliers in a variety of different capacities.

Broilers and layers require different mixes of raw materials ("diets"). In addition, diets differ for chickens at different stages of their development: baby chicks require different diets than mature birds. Almost all feed producers offer several branded chicken feed products with what each producer believes is the "best" diet for a broiler or a layer. Some companies—especially the smaller ones—will work with the farmer to create a customized diet to the farmer's specifications. Chicken feed is manufactured using a batch process, and the same equipment is used to create and package any mix of raw materials. Chicken feed mills, however, do tend to use dedicated equipment to produce "organic" feeds to avoid contamination with non-organic materials.

Chicken feed may be processed into three forms for sale to farmers:

1. *Pellets* are processed by grinding up the ingredients and molding them into an oblong shape. They are by far the most common form of chicken feed.

⁷ The Department of Agriculture uses the North American Industry Classification System (NAICS) to define a specialized farm, which in this case means a farm where 50% or more of a farm's sales come from poultry and eggs.

⁸ *2017 Census of Agriculture Highlights*, *supra* note 2.

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.*

¹³ Institute for Food Education and Research, *2020 Animal Feed/Food Consumption, COVID-19 Impact Analysis* 48 (broilers) 50 (layers) (Dec. 2020).

2. *Mash* is an unprocessed form of feed composed of ground-up grains and other ingredients. Mash is most commonly fed to chicks since it is easier for them to consume, although there is typically considerable waste from uneaten mash.
3. *Crumbles* are pellets that have been broken up. The texture is not as fine as mash, so it is easier for chicks to manage and significantly reduces waste.

The same production lines can be used to make all three forms of feed. Mash skips the pelleting stage, and crumbles use a crumbler to crack or roll the pellets to create a feed with a softer consistency in a smaller size. All mills produce all three forms of feed.

Chicken feed producers range from large integrated producers to small independent feed mills. Five large integrated producers—Tyson’s Foods, Pilgrim’s Pride, Perdue, and Sanderson Farms—control over 60% of the broilers produced in the United States. These companies both own chicken farms and contract with other farms to supply broilers. In either case, the integrated company supplies the feed for the chickens. Independent farms—that is, farms not under contract with an integrated company—purchase their feed requirements from either integrated feed mills or independent feed producers.

Of the 80 million tons of chicken feed consumed each year in the United States, integrated mills provide 36.5 million tons to their company-owned farms and farms under contract. This leaves an addressable market for independent mills of 43.5 million tons. Integrated mills sell about 8.0 million tons into the independent farm market and independent mills sell the remaining 35.5 million tons.

Notably, integrated mills and most independent mills differ significantly in the range of diets they produce. Integrated mills, which primarily supply farms in their system and seek uniformity in their flocks, have standardized their products and only produce five or six diets. Independent mills, on the other hand, have the flexibility to produce dozens if not hundreds of diets to order to meet the particular specifications of their customers. Indeed, most independent mills will work with farmers to design unique customized diets. Integrated mills do not provide this service.

Farmers typically order bulk poultry feed directly from the mill or through local farm shops, which then forward the order to the mill. Many farmers will enter into annual feed supply contracts with a mill. The order or contract will specify the feed manufacturer, diet, and volume of feed they wish to purchase. Once the mill receives the order, it either takes the feed from recent stock or manufactures it to order, in either case ensuring that the feed is fresh. The mill then ships the feed directly to the farmer in bulk feed trucks. Mills typically sell to customers within 100 miles trucking distance of the mill site, although mills will sell to larger customers at further distances and absorb some of the transportation costs in order to be competitive.

NCF is an independent feed producer with 42 mills located in North Carolina, Arkansas, and northern Georgia, one of the largest chicken-producing regions in the United States. NCF’s mills are on the larger size for independent mills, producing an average of 120,000 tons of feed per mill annually. NCF’s mills are also very efficient and contribute on average \$23 per ton in profit or \$2.76 million per mill per year. NCF’s total annual production is 5.04 million tons, on which it earns a profit of \$116 million per year. NCF is currently valued at \$1.75 billion, or a little over 15 times earnings.

NCF supplies small- to large-sized independent farms. NCF has a total of 7,200 customers nationally. On average, NCF supplies 700 tons annually to each customer, on which it earns a profit of \$16,100.

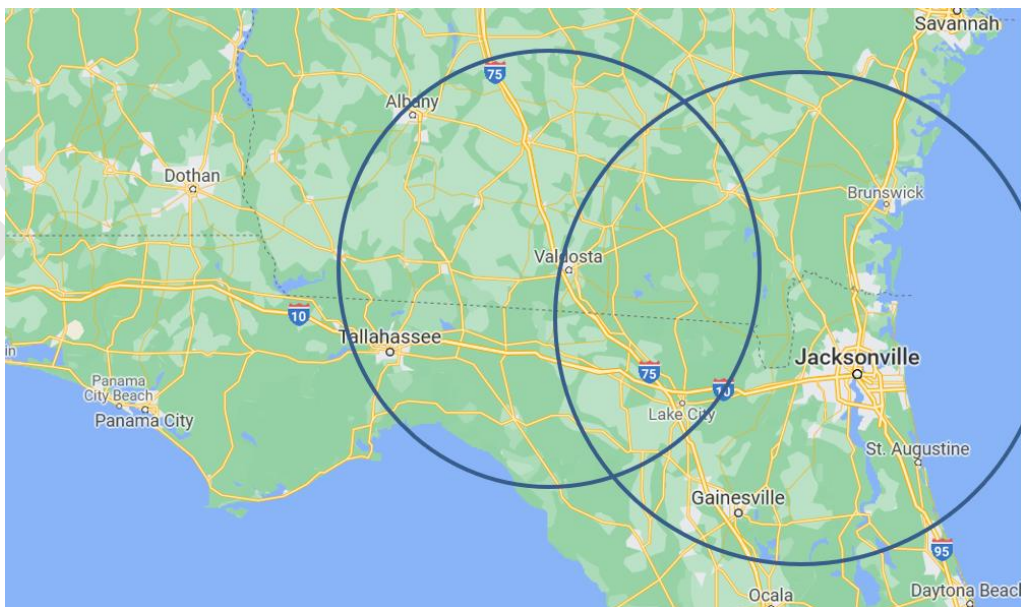
NCF recently opened a new 100,000-ton mill in Brunswick, GA, to supply the growing number of chicken farms in southeastern Georgia, Florida, and Alabama. The mill ships feed within 125 miles of the mill and is NCF's only mill that can competitively supply feed to chicken farms in this service area.

Henderson is a privately owned independent feed producer started in the 1950s by the Henderson family. Today, the company owns and operates ten mills located in southern Georgia, southern Alabama, and Florida. Henderson's mills are on the small size, averaging only 67,000 tons per mill of feed annually. Henderson's mills are old and not very efficient and contribute on average only \$21 per ton in profit or about \$1.4 million per mill per year. Henderson's total annual production is 670,000 tons, on which it earns a profit of \$14.07 million per year. Under family management, NCF estimates that Henderson's going concern value is \$183 million, or a little over 13 times earnings.

Henderson supplies primarily to small to medium-sized independent farms and rarely ships to farms located more than 100 miles trucking distance from its mills. Henderson has a total of 1625 customers. On average, NCF supplies 400 tons annually to each customer, on which it earns a profit of \$16,100.

Henderson's Valdosta mill is about 122 miles trucking distance from NCF's Brunswick mill. Valdosta supplies customers within 100 miles of the mill and so competes for customers that lie in the intersection of the draw areas of the Valdosta and NCF Brunswick mills. Henderson's Valdosta mill is its only mill that can competitively supply any customers that a NCF mill can also serve.

Figure 2.2
Draw Areas of the NCF Brunswick and Henderson Valdosta Mills



In her conversation with Ms. Costello, Ms. Smith explained that NCF is attractive as an acquisition target for several reasons. First, the acquisition would give NCF ten plants well-situated in the southern Alabama-southern Georgia-Florida region into which NCF is very interested in entering with a significant presence. Second, the acquisition would give NCF an established customer base in the areas in which the Henderson mills operate, so NCF would not have to compete with other mills for customers to baseload its plants. Third, Henderson is a “sleepy” family company that NCF believes is overpaying the family employees and operating well below its profit and growth potential as a company. NCF believes it can significantly reduce Henderson’s overhead expenses and operating costs, improve its productive efficiency, price its products more aggressively, and thereby significantly improve its profitability. Fourth, all of the Henderson mills have both the necessary permitting to operate and the land to significantly expand the capacity of the plants. NCF plans to expand the capacity of the Henderson plants in anticipation of growing demand in order to grow the business. Finally, the Henderson family is willing to sell at only a 15% premium above going concern value. Apparently, the younger generation is not interested in running the business, Walter Henderson is more than ready to retire, and an all-cash transaction for \$210 million (including over \$27 million in a deal premium) makes the transaction attractive to the Henderson family.

Figure 2.3
Medium-Sized Bulk Feed Truck



END OF EXAM

Hydrogen Peroxide Merger

Note: I have not included any discussion of the boilerplate in this outline. I have attempted to be reasonably complete in the preliminary risk analysis. Given the time limits on the exam, I did not expect you to come near this level of completeness. Rather, I focused on the extent to which the answer spotted and analyzed the most important issues.

INTRODUCTION

1. Assignment requires a memorandum of law for a law firm client performing a preliminary risk assessment of the possible acquisition by Bvonik of HP for \$1.1 billion in cash
 - a. Inquiry risk
 - b. Substantive risk
 - c. Relief risk (including possible consent settlement)BUT do not address contract risk-shifting provisions
2. Add note that memorandum accepts client's facts and estimates, but the facts—and hence conclusions—may change with further investigation

KEY POINTS

1. Bvonik and HP are the largest and third-largest sellers, respectively, of standard grade hydrogen peroxide (H_2O_2) in the United States (five total)
2. Acquisition for \$750 million in cash—HSR reviewable (FTC)
3. Commodity chemical – produced in different concentrations but all priced on 100% basis
4. No effective substitutes—highly inelastic demand (5% price increase → 0.1% quantity loss) → standard grade hydrogen peroxide is a relevant product market
5. Five suppliers out of ten plants (7 U.S., 3 Canada)—all sell into the U.S.—appear to clump in three geographic regions (only two with potential overlaps)
6. Each manufacturer covers the entire range of end uses and all H_2O_2 produced on the same equipment with essentially no switching costs
7. Delivered in bulk to the customer in rail tank car or truck
8. Delivery radius: 1000 miles (PNW/W); 800 miles (S/C)
9. All companies in a region bid for every contract—Canada plants in PNW/W and NE regions (see n.3)
10. Cost prohibitive for out-of-region plant to bid to supply an in-region customer (for all regions) → separate regional geographic relevant markets
11. Average prices differ among regions
12. Sold in high-volume multiyear supply contracts
13. Price transparency on bids (after the fact)
14. Active trade association (HPMA)—includes extensive data collection and dissemination
15. Table 1.2: Average price, margin, cost by region
16. Customers very price sensitive—choose suppliers on lowest delivered cost
17. Coordinated effects:
 - a. Prices tend to “ratchet up”: Prices increase with input cost increases but do not decline as much with input cost decreases → oligopolistic behavior/tacit collusion
 - b. 3→2 in S/C; 5→4 in PNW/W
18. HP Bayport (S/C) prices aggressively to keep plant loaded → “maverick”
19. No recapture unilateral effects (homogeneous product with minor spatial differentiation)

20. No second cost auction unilateral effects (see map: merging parties are never uniquely first- and second-lowest cost bidders)
21. High barriers to entry (cost of new plant + regulatory barriers)
22. Annual synergies: \$22m fixed; \$5m marginal
23. Do synergies cover 32% deal premium? (8% WACC)
24. Pulp & paper customers could complain

CONCLUSIONS

1. Inquiry risk
 - a. Deal HSR reportable—Overlap likely to be apparent
 - i. Preliminary investigation—concentrated regional markets, could be customer complaints in interviews (especially from pulp & paper customers)
 - ii. Second request
 - b. Others--unlikely
2. Relevant product market: Standard grade hydrogen peroxide
 - a. Complete supply-side substitutability (products the same except for concentration and additives)
3. Relevant geographic markets
 - a. Pacific Northwest (including Canada)—3 plants
 - b. Southern/Central United States—5 plants
4. *PNB* presumption
 - a. Pacific Northwest (including Canada)
 - i. 3 → 2 merger
 - ii. Combined share: 59%
 - iii. Strong *PNB* presumption from Merger Guidelines
 - iv. Well supported by case law
 - b. Southern/Central United States
 - i. 5 → 4 merger
 - ii. Combined share: 49%
 - iii. *PNB* presumption from Merger Guidelines
 - iv. Supported by case law
5. Additional evidence
 - a. Coordinated effects: Present
 - b. Unilateral effects
 - i. Recapture: Minimal at best (homogeneous product with only minor spatial differentiation)
 - ii. Second cost auction: Rejected (merging plants are never uniquely the lowest and second-lowest cost bidders)
 - c. Elimination of a maverick: HP in S/C
6. Defenses
 - a. Entry/expansion/repositioning
 - i. *Entry*: Rejected (cost and time of building a new plant; time and cost of overcoming regulatory barriers)
 - ii. *Expansion*: Almost surely not likely: Given existing high level of excess capacity and “ratcheting up” of prices historically, incumbent firms have not been cutting prices to expand capacity premerger—no reason to expect them to do so postmerger

- iii. *Repositioning*: Rejected (homogeneous product, no supply-side substitutes)
 - b. Power buyers: Rejected
 - i. Nothing in facts suggests that any buyer can protect itself
 - ii. But in any event, success of apparent tacit collusion in “ratcheting up” prices indicates that there are some customers that cannot protect themselves
 - c. Efficiencies (annually recurring): Rejected
 - i. \$22 million in fixed costs: Not cognizable
 - ii. \$5 million in marginal cost savings: Not timely, not verifiable (agency view since not supported by independent studies); almost surely not sufficient; unlikely to be passed on to consumers (given “ratcheting up” of prices historically)
 - d. Failing firm: Nothing in facts support
- 7. Relief risk
 - a. Almost certain challenge in both PNW/W and S/C markets
 - b. Consent decree: Rejected (would reject a divestiture of an overlapping plant in each market; no trade-up opportunity to Bvonik)
 - c. *Bottom line*: Almost certain that transaction will be blocked

ANALYSIS

Inquiry risk

1. *Federal*: Transaction value: \$1.1 billion in cash → HSR reportable (reviewable by the FTC)
2. *State AGs*: Unlikely to have any interest
 - a. Industrial merger of an intermediate (nonconsumer) product
 - b. No threat of plant closing
3. *Private parties*
 - a. *Customers*: Not a consummated deal—unlikely interest & free-rider problem to challenge with litigation; more likely to complain to FTC (especially pulp & paper customers)
 - b. *Competitors*: No apparent opportunities for foreclosure; in interest of competitors if prices increase (if anything, transaction likely to be supported by competitors given its likely anticompetitive effects)

Substantive risk

1. Relevant product markets—Homogeneous products
 - a. Observations
 - i. Standard grade products are chemically identical except for concentration (and occasional differences in additives)
 - ii. Priced on hydrogen peroxide content (regardless of concentration)
 - b. *Brown Shoe* test
 - i. Outer boundaries
 1. Homogeneous product + price-sensitive customers → High cross-elasticity of demand & reasonable interchangeability of use
 2. Most end uses have no effective substitutes → Low cross-elasticity/ interchangeability of use with products outside of the market
 - ii. Practical indicia

1. Commodity chemical recognized by the American Chemical Society; regulated by the USDOT, EPA, and OSHA as a hazardous substance
2. Product's peculiar characteristics and uses: Unique with no substitutes for most end uses
3. Unique production facilities: Dedicated specialized production equipment; easy switching among all grades; all manufacturers
4. Distinct customers
5. Distinct prices
6. Sensitivity to price changes: Customers highly sensitive to relative price differences among suppliers
7. Specialized vendors: Only seven firms produce; high barriers to entry due to existing excess capacity and environmental permitting

c. HMT

- i. Homogeneous product → Apply critical loss test¹
- ii. Percentage actual loss for 5% SSNIP: < 0.1%
- iii. Percentage critical loss sufficiency test (use maximum average margin of 35%):²

$$(\%CL =) \frac{\Delta q_{cl}}{q} = \frac{\delta}{\delta + m} = \frac{0.05}{0.05 + .35} = 12.5\%$$

- iv. Percentage actual loss(0.1%) < percentage critical loss (12.5%) → Candidate market is a relevant market

2. Relevant geographic markets (two)

a. Pacific Northwest (including Canada): Three plants

i. Commercial realities

1. Three plants in PNW/W are in the same relevant geographic market
 - a. Plants in the PNW/W competitively ship up to 1000 miles → significant overlap of draw areas of the three PNW/W plants³
 - b. Shipments across the U.S.-Canadian border in both directions
 - c. All plants within the region respond to RFPs from customers within the region
 - d. Customers will shift to foreign suppliers in response to small domestic relative price increases
 - e. Suppliers have the excess capacity and willingness to supply foreign demand
 - f. Indicates that the three plants in the PNW/W are in the same relevant geographic market
2. Other plants are not in the same relevant geographic market
 - a. Minimal to no overlap with shipping areas with plants outside of PNW/W

¹ This jumps the gun a bit. Here, there appear to be several regional relevant geographic markets. A HMT test requires that both the product and geographic boundaries of the candidate market be specified. But if hydrogen peroxide satisfies a critical loss sufficiency test using the highest margin of any possible regional market, then a fortiori it satisfies the HMT for all regional markets.

² It is proper to use the highest average regional margin of 35% rather than the highest possible firm margin of 38% since the critical loss test assumes that all firms in the candidate market increase their prices by the SSNIP.

³ This should be apparent from the map, but if in doubt check with Google Maps for driving distances between plants.

- b. Average prices differ among regions, although average costs are the same
- c. HPMA treats PNW/W as a distinct region
- ii. HMT: Two U.S. plants only: Use percentage critical loss sufficiency test to check
 1. Percentage actual loss for 5% SSNIP: 14%
 2. Percentage critical loss (use average margin of 33%):

$$(\%CL) = \frac{\Delta q_{cl}}{q} = \frac{\delta}{\delta + m} = \frac{0.05}{0.05 + 0.33} = 13.2\%$$

3. Percentage actual loss (14% > percentage critical loss (13.2%) → Candidate market fails the sufficiency test
4. But this does not mean that the candidate market fails a full HMT
 - a. Can estimate the margins of the two U.S. plants to obtain critical loss for a two-U.S. firm candidate market:

	B Oregon	S Washington
Revenues	\$132.0	\$135.3
Quantity	110,184	112,938
Price per ton	1198	1198
Cost	803	803
\$margin	395	395
%margin	32.97%	32.97%
Critical loss		
δ	0.05	0.05
%m	32.97%	32.97%
Critical loss	13.17%	13.17%

- b. Since the actual loss of 14% is greater than the critical loss of 13.17%, the two-plant candidate market fails the critical loss test, although it is borderline
 - i. NB: This is not quite correct since the \$803 margin is an average and not exact. We do not know the exact margins of the two U.S. plants, but we know that since HP Canada is a high-cost plant, the proper average of the two U.S. plants should be more than \$803 (making the actual critical loss for the two plants lower than 13.17%).
- c. Three important points on this
 - i. It was not necessary to perform a critical loss test on a two-U.S. firm candidate market. You could have started with a three-firm candidate market (à la Warren-Boulton in H&R Block/TaxACT)
 - ii. If you performed a critical loss test on a two-U.S. firm candidate market, it was not necessary for an acceptable response to calculate the actual margins and perform a “true” critical loss test. It was sufficient if you observed that (1) the candidate market failed the critical loss

sufficiency test, (2) this did not necessarily mean that the candidate market failed a true critical loss test, and (3) the geographic boundary would be determined using the qualitative factors (especially since the failure of the sufficiency test was borderline)⁴

iii. I made an error in drafting the hypothetical (although you should have concluded with the answer I intended). The 14% diversion was inconsistent with the homogeneous nature of hydrogen peroxide, the low U.S. tariff, and the ability of the HP Vancouver plant to compete against the two U.S. PNW plants given the Vancouver plant's effective shipping distance. To be consistent with the other facts, what I should have written is that U.S. customers would have shifted all of their demand to the Vancouver plant and purchased as much as the Vancouver plant would supply at the non-SSNIP prices. At a minimum, the Vancouver plant would have supplied an amount equal to its premerger excess capacity (47,663 tons) or about 21% of the PNW U.S. supply. When I make a mistake in writing the exam, as I did here, I adjust the grading accordingly to offset any confusion I may have caused.

iii. HMT: Expand market to include Vancouver plant

1. Percentage actual loss for 5% SSNIP: <0.1
2. Percentage actual loss (0.1% < percentage critical loss (12.20%) → Candidate market is a relevant market
3. Also note that U.S. plants in the Eastern and Southern/Central regions are too far to competitively supply customers in the Pacific Northwest even with a 5% relative price increase.

b. Southern/Central United States: 5 plants

i. Commercial realities

1. Plants in the S/C competitively ship up to 800 miles → significant overlap of draw areas of all S/C plants
2. Entirely self-contained region—no shipments into the region from Canadian or other U.S. plants even with a 5% relative price increase.
3. Indicates that all and only plants in the S/C region are in the same relevant geographic market

ii. HMT: Percentage critical loss sufficiency test (use average margin of 27%)

1. Percentage actual loss with a 5% SSNIP: 0.1%
2. Percentage critical loss:

$$(\%CL) = \frac{\Delta q_{cl}}{q} = \frac{\delta}{\delta + m} = \frac{0.05}{0.05 + 0.27} = 15.16\%$$

⁴ I did count as an error if you performed the critical loss (sufficiency) test on the two-U.S. firm candidate market in an analytically incorrect way (e.g., finding that actual loss was greater than critical loss and erroneously concluding from this that the candidate market was a relevant market).

3. Percentage actual loss(0.1%) < percentage critical loss (15.16%) →
Candidate market is a relevant market

3. Market participants, market shares, and the *PNB* presumption

a. Pacific Northwest/Western

i. *Query*: Should all of Vancouver be included or only that portion that it currently sells into the United States plus the additional amount it would sell in the event of a 5% relative price increase by the two U.S. plants?

1. *Answer*: The judicial and HMT tests showed that the two U.S. plants were not a relevant market and that the relevant market had to include the Vancouver plant.

2. Therefore, include 100% of the Vancouver plant as a current market participant under judicial precedent and Merger Guidelines

ii. HHI analysis:

1. HHIs: The problem stated that standard grade hydrogen peroxide is sold in a bidding market. This raises two possibilities for calculating HHIs:

a. *Revenue shares*: Appropriate if the bids are frequent and for small contracts

b. *Number of bidder shares*: Appropriate if bids are infrequent and large

Although I had the first case in mind, I did not provide enough detail in the problem for you to determine that. Therefore, I accepted both ways of calculating HHIs.

HHI--Revenue shares					HHI--Bidder shares		
Pacific Northwest					Bidder shares		
	Tons	Revenues	Share	HHI	Share	HHI	
Bvonik							
Portland, OR	110,184	\$132.0	40%	1600	33%	1111	
HP							
Vancouver, BC	52,337	\$62.7	19%	361	33%	1111	
Solvay							
Longview, WA	112,938	\$135.3	41%	1681	33%	1111	
Arkema							
Nouryon							
	275,459	\$330.0	100%	3642	100%	3333	
Combined			59%		67%		
Premerger HHI				3642		3333	
Delta				1520		2222	
Postmerger HHI				5162		5556	

2. Strong *PNB* presumption

a. “Red zone” under the Merger Guidelines

b. Multiple litigated FTC/DOJ cases confirm the presumption

- i. *PNB* itself
- ii. *Baby Food* (check)
- iii. *United States v. Anthem, Inc.*, 855 F.3d 345, 351 (D.C. Cir. 2017) (combined market share of 47%, delta of 537, and postmerger HHI of 3000);
- iv. *FTC v. H.J. Heinz Co.*, 246 F.3d 708 (D.C. Cir. 2001) (combined market share of 33%, delta of 510, and postmerger HHI of 5285);
- v. *United States v. H&R Block, Inc.*, 833 F. Supp. 2d 36, 72 (D.D.C. 2011) (combined market share of 28.4%, delta of 400, and postmerger HHI of 4691);
- vi. *United States v. UPM-Kymmene OYJ*, No. 03 C 2528, 2003 WL 21781902 (N.D. Ill. July 25, 2003) (complaint alleging combined market share of 20%, delta of 190, and postmerger HHI of 2990).

b. Central/Southern.

- i. No imports from outside of the region.
- ii. HHIs:

	HHI--Revenue shares				Bidder shares	
	Southern/Central		Share	HHI	Share	HHI
	Tons	Revenues				
Bvonik						
Mobile, AL	128,000	\$140.8	32%	1038.11	20%	400
HP						
Bayport, TX	71,579	\$74.8	17%	292.98	20%	400
Solvay						
Deer Park, TX	101,273	\$111.4	25%	649.84	20%	400
Arkema						
Memphis, TN	56,000	\$61.6	14%	198.70	20%	400
Nouryon						
Columbus, MS	44,000	\$48.4	11%	122.67	20%	400
	400,852	\$437.0	100%	2302.30	100%	2000
Combined			49%		40%	
Premerger HHI				2302		2000
Delta				1103		800
Postmerger HHI				3405		2800

iii. *PNB* presumption

- 1. "Red Zone" in Merger Guidelines
- 2. Multiple litigated FTC/DOJ cases confirm the presumption
 - a. *PNB* itself

- b. *United States v. Anthem, Inc.*, 855 F.3d 345, 351 (D.C. Cir. 2017) (combined market share of 47%, delta of 537, and postmerger HHI of 3000);
- c. *FTC v. H.J. Heinz Co.*, 246 F.3d 708 (D.C. Cir. 2001) (combined market share of 33%, delta of 510, and postmerger HHI of 5285);
- d. *United States v. H&R Block, Inc.*, 833 F. Supp. 2d 36, 72 (D.D.C. 2011) (combined market share of 28.4%, delta of 400, and postmerger HHI of 4691);
- e. *United States v. UPM-Kymmene OYJ*, No. 03 C 2528, 2003 WL 21781902 (N.D. Ill. July 25, 2003) (complaint alleging combined market share of 20%, delta of 190, and postmerger HHI of 2990).
- f. *see also In re Evanston Northwestern Healthcare Corp.*, No. 9315, 2007 WL 2286195, at *4 (FTC Aug. 6, 2007) (combined market share of 35%, delta of 384, and postmerger HHI of 2739).

4. Additional evidence

a. Coordinated effects

i. Pacific Northwest/Western

1. Premerger susceptibility

a. Selection

- i. Homogeneous product: Although there are multiple standard grades, they differ only in concentration and can be converted to 100% H₂O₂ for comparability

b. Internal stability

- i. Only three firms premerger
- ii. Cooperation through HPMA
- iii. Firms appear to be tacitly coordinating on prices by “ratcheting up” prices when input costs increase but do not decrease prices as much when input prices decline → existing tacit collusion (and not just susceptibility)
- iv. High probability of detection
 - 1. Monthly HPMA reports on production, capacity utilization
 - 2. Some price transparency from HPMA and customers
 - 3. Winners of contracts are rapidly known through announcements or just look at whose rail cars are showing up

v. *Contra*, large, multiyear contracts; significant excess capacity among all users

c. No threat of external interference

- i. Customers will not switch to other products
- ii. No external sources
- iii. High barriers to entry

2. Postmerger increase in probability and effectiveness
 - a. Merger to duopoly (3 → 2)
- ii. Central/Southern
 1. Premerger susceptibility
 - a. Same as above but five firms premerger
 - b. While five firms may be borderline by itself for a market premerger to be susceptible to tacit coordination, the firms are in fact tacit coordinating as evidenced by the “ratcheting up” of prices
 2. Postmerger increase in probability and effectiveness
 - a. Merger reduces to four firms—makes existing coordination even easier
 - b. Also eliminates the independence of HP, which appears to be acting as a maverick in the region
- b. Unilateral effects (recapture model): Rejected
 - i. The idea is that a profit-maximizing firm without recapture would lose profits if it increased prices: the profit gain on the inframarginal sales would be outweighed by the profit loss on the marginal sales. With sufficient recapture, the profit gain on the recaptured sales would be enough to offset the marginal losses to make the price increase profitable
 - ii. With a homogeneous product, however, there are no inframarginal sales: a firm increasing its price would lose all of its sales to competitors
 - iii. Moreover, with a homogeneous product, the lost sales would likely be distributed among the other competitors and not all go to the merger partner
 - iv. *Bottom line*: Since there would be no profit gain from inframarginal sales and less than 100% diversion to the merger partner, a recapture unilateral price increase would be unprofitable
- c. Unilateral effects (second cost auction model): Minimal if any
 - i. The idea is that in a bidding model for the supply of a homogeneous product, the winning bidder would be the firm with the lowest delivered cost and it would win with a bid just below the delivered cost of the second-lowest cost firm. If the lowest-cost and second-lowest cost firms merger, then postmerger the winning bidder would be the firm with the lowest delivered cost and it would win with a bid just below the delivered cost of the third-lowest cost firm, thus increasing prices postmerger
 - ii. Observations
 1. Some spatial differentiation in plant location, but transportation costs do not appear to be that significant given the competitive shipping radius from the plant
 2. Also, some differentiation in production costs (with individual firms within ± 3% of \$803)
 - iii. Pacific Northwest/Western—Minimal if any
 1. Longview sits between Bvonik’s Portland plant and HP’s Vancouver plant → Merger does not involve the closest and second-closest plant to any customer
 2. We cannot tell from the facts when the transportation differential would be offset by any product cost differential (that would make the merging

- parties the lowest- and second-lowest delivered cost suppliers), but if it did, the price increase is likely to be minimal
- iv. Central/Southern—Minimal if any
 1. None on recapture from spatial differentiation
 - a. Solvay's Deer Park, TX plant is only 10 miles from HP's Bayport, TX plant and hence has essentially identical transportation costs
 2. Again, we cannot tell from the facts when the transportation differential would be offset by any product cost differential (that would make the merging parties the lowest- and second-lowest delivered cost suppliers), but if it did, the price increase is likely to be minimal
 - d. Elimination of a maverick
 - i. HP appears to be a maverick in the Central/Southern but not in the Pacific Northwest/Western
 - ii. Could have coordinated and unilateral effects
 - e. Deal premium analysis
 - i. The fixed and marginal cost savings do not cover the deal premium under any reasonable assumptions
 - ii. Deal premium: 32% over preannouncement value. So $(1 - 0.32)x = 1.1$ billion, where x is the preannouncement value. $x = \$833.33$ million. Premium = \$1.1 billion - \$833.33 million = \$266.67 million
 - iii. Fixed and marginal cost savings
 1. Annual fixed cost savings = \$22 million
 2. Annual marginal cost savings = \$5.0 million
 3. Total annual cost savings = \$27 million
 4. Bvonik's WACC = 8%
 5. PDV:
 - a. 10 years: \$181.17 million
 - b. 15 years: \$231.11 million
 - c. 21 years: \$270.45 million
 6. So it would take a time horizon of about 21 years just to break even
 - iv. Fixed and marginal cost savings + price increase
 1. Total annual cost savings = \$27 million
 2. Price difference = $1100 - 1045 = 55$
 3. HP Bayport quantity = 71,579 tons
 4. Annual profit from price increase = \$3,936,842
 5. Total annual profit gain = \$8,936,842
 6. Bvonik's WACC = 8%
 7. PDV:
 - a. 10 years: \$207.59 million
 - b. 15 years: \$264.80 million
 - c. 21 years: \$309.89 million
 8. A time horizon of about 15 years covers the premium.
 - v. BUT
 1. An increase in HP Bayport prices is likely to decrease the quantity sold and hence the profit contribution from the price increase. To make this up (and to decrease the time horizon), Bvonik must be counting on an

additional price increase in the Pacific Northwest/Western and Central/Southern regions resulting from increased tacit coordination on prices facilitated by the merger

5. Defenses

a. Efficiencies—Rejected

- i. \$22 million annual fixed cost savings not cognizable
- ii. \$5 million annual marginal cost savings cognizable only if passed on to consumers to offset any upward pricing pressure
 1. But the economic incentive here is for the combined company to increase prices
 2. In any event, “ratcheting up”—that is, increasing prices with cost increases but not decreasing prices as much with cost declines—indicates that not all efficiency cost savings will be passed on to consumers
- iii. Usual problems of verifiability, timeliness
- iv. Sufficiency
 1. Almost surely insufficient in the S/C market even if realized:
 - a. Marginal cost savings: \$40 per ton
 - b. Gain from increasing prices to regional average: \$55 per ton

b. Power buyers—Rejected

- i. Observations
 1. Contracts are large and multiyear
 2. All companies (except HP in C/S) have significant excess capacity
 3. Suggests possibility of power buyers defense—although facts provide no explicit support for the mechanism
- ii. BUT
 1. Could be more minor, nonpower buyers
 2. “Ratcheting up” of prices indicates that buyers have not been successful in protecting themselves from anticompetitive price increases

c. Entry/expansion—Rejected

- i. Entry
 1. High barriers to entry make unlikely and, in any event, untimely
 - a. Need to build new plants (no repositioning of existing plants producing other products)
 - b. Environmental permitting
 - c. Significant excess capacity
 - d. Nothing in facts suggest that any firm would be interested in entering
 2. Not verifiable (agency view since not supported by independent studies)
 3. Open question of sufficiency
- ii. Expansion
 1. Almost surely not likely: Given existing high level of excess capacity and “ratcheting up” of prices historically, incumbent firms have not been cutting prices to expand capacity premerger—no reason to expect them to do so postmerger
- iii. *Repositioning*: Rejected
 1. Homogeneous product, no supply-side substitutes

2. No indication that equipment to produce other products could be repositioned to produce hydrogen peroxide

- d. Failing firm—Rejected
 - i. Both Bvonk and HP are profitable

Relief risk

1. A Section 7 violation is certain in the Pacific Northwest/West and almost certain in the Central/Southern region
2. There is no realistic fix
 - a. Each area would require a divestiture
 - b. Bvonk is bigger and more profitable than HP in both regions → No trade up possibility
3. *Bottom line*: The transaction will be blocked

Chicken Feed Merger

Note: I have not included any discussion of the boilerplate in this outline. I have attempted to be reasonably complete in drafting a plan for a complete antitrust analysis. Given the time limits on the exam, I did not expect you to come near this level of completeness. Rather, I focused on the extent to which the answer spotted the most important issues to explore and identified the most important questions to ask for each issue.

INTRODUCTION

1. Assignment calls for a memorandum outlining a *plan to perform a full merger antitrust analysis* to determine:
 - a. The product and geographic relevant markets in issue
 - b. Who are the participants in this market and what are their market shares
 - c. Whether the *PNB* presumption is triggered
 - d. What additional theories of anticompetitive harm might apply against the transaction
 - e. If there are any downward price pressure defenses
2. For each element of the *prima facie* case and each defense, the memorandum should:
 - a. Briefly explain the judicial and merger guidelines standards
 - b. List the questions that need to be answered to assess the application of these standards to the transaction.
 - c. If the facts as we know them suggest how the law might apply to an element—say, for example, the dimensions of the relevant product market—the memorandum should identify the possible application as well as questions we should ask to test the suggestion
3. Finally, the memorandum should include suggestions about what the client should be saying—or not saying—in their documents and emails as they continue their internal analysis of the transaction^{1,2}

KEY POINTS

1. Client National Chicken Feed (NCF) in the initial stages of negotiating an acquisition of Henderson Mills, two independent (nonintegrated) multiplant chicken feed companies
2. NCF operates nationwide; Henderson only in southern Georgia, southern Alabama, and Florida

¹ A number of students attempted to do a substantive analysis of the merger based on the facts presented in the hypothetical. That was not the assignment and the hypothetical deliberately did not include sufficient facts to do a meaningful substantive analysis. Rather, the assignment called for a *plan* for doing the antitrust analysis, including *identifying the questions* that need to be addressed in order to do the analysis. The focus of the assignment was to identify the areas that need to be explored in the antitrust analysis and the associated questions that the analysis should address.

Also, a number of students provide their thoughts on the strategy and tactics of defending the deal. This was premature—an objective analysis needs to be performed first before jumping into how to optimize the defense of the transaction. But since I did not explicitly ask for a plan for an *objective* merger antitrust analysis, I consider the strategic and tactical ideas in grading the answer. Not surprisingly, given that an objective antitrust analysis had yet to be performed, most of the strategic and tactical ideas left much to be desired.

² The assignment did not specify whether the plan for the merger antitrust analysis was to address only the substance or also include the inquiry and relief risk. I accepted either interpretation and graded the answer with a somewhat lower standard for the level of detail on the substantive aspects if the answer also addressed inquiry and relief risks (but not too much lower since most of the additional text involved boilerplate).

3. Two kinds of chicken farms: multiproduct and specialized (i.e., 50% or more of farm sales come from chickens)
 - a. 97% of specialized farms are family farms (by number of farms)
 - b. 3% must be industrial farms (probably integrated farms)
4. Three types of specialized chicken farms:
 - a. Farms owned and operated by large vertical integrated companies
 - b. Family farms that contract to sell their production to integrated companies for processing
 - c. Independent family farms
5. Feed is the largest expense: 55% of total production costs
6. Two categories of chickens: Broilers and layers—required different “diets” (feed composition)
7. Chickens at different stages (chicks, mature birds) can also require different feed types
8. Forms of chicken feed: Pellets, mash, crumbles
9. Farmers purchase feed from chicken feed mills
 - a. All diets and feed forms can be produced on essentially the same equipment
10. Types of feed producers:
 - a. *Integrated*: Part of large vertically integrated operations;
 - b. *Independent*: Feed companies that are not owned by an integrated company
11. Relation of customers to feed producers
 - a. Integrated and contract farms must purchase feed from affiliated integrated feed producer
 - b. Independent farms can purchase feed from either an integrated or independent mill
12. Integrated mills offered only five or six standardized diets
13. Independent mills offer both standardized diets and diets customized to the farmer’s specification
14. Mills typically sell (ship) to customers located within 100 miles of the mill
15. NCF
 - a. 42 mills—larger than average independent mill
 - b. Very efficient (\$23/ton profit)
 - c. Supplies small- to large-sized independent farms
 - d. *Only overlap*: NCF Brunswick with Henderson Valdosta³
16. Henderson:
 - a. 10 mills—on the small size
 - b. Supplies small- to medium-sized independent farms
 - c. Old and not very efficient (\$21/ton profit)
17. Deal rationale
 - a. Gives NCF ten mills with only one (incomplete) overlap
 - b. Provides NCF with an established customer base in Henderson’s addressable market
 - c. Henderson is a “sleepy” family company—NCF can significantly reduce costs
 - d. NCF plans on expanding the capacity of the Henderson plants in anticipation of growing demand in the area
 - e. Available at a low price and a below-market premium

³ The hypothetical stated: “Henderson's Valdosta mill is about 122 miles trucking distance from NCF's Brunswick mill. Valdosta supplies customers within 100 miles of the mill and so competes for customers that lie in the intersection of the draw areas of the Valdosta and NCF Brunswick mills. Henderson's Valdosta mill is its only mill that can competitively supply any customers that a NCF mill can also serve.” Some of you incorrectly read the last sentence to say that the NCF Brunswick and Henderson Valdosta mills were the only mills that serve the overlap area, thus making this a merger to monopoly in the area. All the sentence said is the Brunswick and Valdosta were the only mills of the merging parties that overlapped.

PLAN FOR THE ANTITRUST ANALYSIS

Some basic document requests⁴

Please provide copies of the following documents to the extent they exist. As new responsive documents are prepared, please send them to us prior to finalization for review.

1. NCF's strategic plan for each of the last three years. If regional plans exist and are readily available, please provide those as well.
2. Any internal or external market research report on supermarket competition prepared within the last three years.
3. Any "Item 4(c) documents", that is, any studies, surveys, analyses, or reports prepared by or for the NCF's officers or directors that evaluate or analyze the proposed transaction with respect to markets, market shares, competition, competitors, potential for sales growth, or expansion into product or geographic markets.
4. Any "Item 4(d) documents" that is, any Confidential Information Memoranda ("CIM") (if you received on in connection with the sale of Henderson), third-party advisor documents, or documents analyzing synergies or efficiencies that might arise out of the transaction.
5. Any documents that analyze or otherwise assess competitors in the Georgia-Florida-Alabama region (especially any documents that discuss Henderson).
6. Any documents prepared in the regular course of business that provide market shares in all or any part of the Georgia-Florida-Alabama region.
7. Any document that addresses how the NCF sets its prices generally or in the Georgia-Florida-Alabama region in particular.
8. Any planning documents discussing the methodology for opening or closing mills, including any programs or models used to analyze new mill locations, expansions, or closures.
9. Any other documents that address the rationale for the transaction (including the most recent financial model).
10. Any documents that address likely present or future changes to business strategies as a result of the transaction.

Prima facie case

1. Relevant product market

Hypothesis: Manufacture and sale of chicken feed (all forms; all diets)

- a. *Brown Shoe* outer boundaries/reasonable interchangeability of use

- i. Is there any other type of feed other than the type of conventional chicken feed the merging parties produce that chicken farmers feed to their chickens to sustain them? (H: No—Would show little or no interchangeability of use with conventional chicken feed⁵)

⁴ I did not specifically ask for a preliminary document request to the client. I should have. Very few students considered documents and no one considered them systematically. I did not count the lack of document requests against the grade.

⁵ The "H:" at the beginning of the parenthesis indicates my hypothesis how I expect the question likely to be answered given the facts as we now them. But the reason we are asking the questions in doing the analysis is both to

- ii. If the price of conventional chicken feed from all producers increased by 10%, would chicken farmers switch some or all of their purchasers to a different type of feed? (H: No—Would show low cross-elasticity with other types of feed)
 - iii. If the price of conventional chicken feed from all producers increased by 10%, by how much—if any—would chicken farmers reduce the quantity of conventional chicken feed they purchased (H: Little or no reduction—Would show that the demand for chicken feed was inelastic)
 - iv. Assume that a chicken farmer has several chicken feed suppliers, each competitive with the others, from which it could purchase its feed. Now assume that the supplier it uses increases its price by 10% while the other suppliers continue at their original prices. Would the farmer switch suppliers? (H: Yes—Would show high cross-elasticity among conventional feed suppliers)
- b. “Practical indicia”
- i. Does the industry or public recognize chicken feed as a separate economic entity? (H: Yes)
 - ii. Does conventional chicken feed have peculiar characteristics and uses? (H: Yes—only used to feed chickens)
 - iii. Does the manufacture of conventional chicken feed require unique production facilities? (H: Yes)
 - iv. Does conventional chicken feed have distinct customers? (H: Yes—Chicken farmers)
 - v. Does conventional chicken feed have distinct prices? (H: Yes)
 - vi. Is aggregate demand sensitive to price changes? (H: No—Would show demand is inelastic)
 - vii. Is conventional chicken feed manufactured and sold by specialized companies (H: Yes)
- c. Targeted customer market 1: Independent chicken farms
- Hypothesis:* Relevant market limited to independent chicken farms
- i. Confirm that chicken farms that contract with integrated chicken producers must purchase their feed from an affiliated feed company and cannot purchase from an independent feed producer (such as the margining parties)
- d. Targeted customer market 2: Small- and medium-size chicken farms
- Hypothesis:* Relevant market limited to small- and medium-size chicken farms
- i. List all chicken farms currently supplied by each of the merging parties (including the type of farm, delivery address, quantity and dollar amount of purchases last year)

confirm the facts and to obtain sufficient evidence to prove them to investigating agency and, if th necessary, the court.

- ii. To the extent known, provide a list of all independent chicken farms in southern Georgia and northern Florida (including their headquarters address, the addresses of each constituent chicken farm, the type of farm, its size, and an estimate of each farm's annual unit and dollar volume of chicken feed purchases) [the **chicken farm list**]
 - iii. To the extent known, provide a list of all independent chicken feed producers in southern Georgia and northern Florida (including their headquarters address, the addresses of each chicken feed mill, and an estimate of their annual unit and dollar volume) [the **chicken feed producer list**]
 - iv. What is the largest chicken farm in southern Georgia and northern Florida supplied by an independent chicken feed producer and identify the farm, the quantity of feed purchased monthly, and the farm's feed supplier?
- e. Cluster market 1:

Hypothesis: All diets and forms of chicken feed constitute a cluster market

- i. How do diets differ from one another? Describe the production process for producing a diet to a given specification. Is the same equipment used in producing each type of diet or do some diets require different or specialized equipment?
- ii. How many diets does each of the merging parties provide?
- iii. How many diets does a typical independent feed supplier provide?

- f. Cluster market 2:

Hypothesis: All diets and forms of chicken feed excluding standardized diets offered by integrated feed suppliers constitute a cluster market

- i. How many diets do integrated feed producers offer? (H: Only a few standardized diets)
- ii. Do integrated feed suppliers in southern Georgia/northern Florida offer nonstandardized diets?
- iii. Do integrated feed suppliers create customized diets to a farmer's specifications?

- g. Customized diets

Query: Are customized diets (that is, diets produced to a farmer's specifications) part of the chicken feed cluster market and not a separate product market?

- i. What percentage of chicken farmers require customized diets made to their individual specifications? (H: Very few)
- ii. What percentage of chicken farmers that create a customized diet abandon that diet within one year of adoption and return to a regular diet?
- iii. Will the merging parties create customized diets to a farmer's specifications? (H: Yes) What are the annual unit and dollar volume of customized diets sold by each of the merging parties in the last year? What percentage of total annual unit and dollar feed sales are customized diets? (H: Small)

- iv. What, if any, services do each of the merging parties offer to farmers who are interested in possibly creating a customized diet? Is there a separate charge for these services? If so, what is the charge?
 - v. Will other independent feed producers typically create customized diets to a farmer's specifications? (H: Yes) For a typical feed producer that offers custom diets, what percentage of total annual unit and dollar feed sales are these customized diets? (H: Small)
 - vi. What, if any, services do feed producers that will create customized diets typically offer to farmers who are interested in possibly creating a customized diet? Is there a separate charge for these services? If so, what is the charge?
 - vii. How, if at all, do the prices differ between customized diets created to a farmer's specification and diets on the producer's regular product list?
 - viii. (HMT) If a farmer's supplier of a customized diet increased its prices by 10% but all other feed suppliers in the area held their prices for customized diets constant, what would the farmer do?
 - ix. (HMT) If a farmer's supplier of a customized diet increased its prices by 10% and all other suppliers in the area also increased their prices by 10%, what would the farmer do?
- h. Hypothetical monopolist test (for each product grouping identified above)
- i. What is the percentage margin on conventional chicken feed?

2. Relevant geographic market

- a. Observations
 - i. NCF's Brunswick mill and Henderson's Valdosta mill are the only two mills that compete with one another
 - ii. The relevant geographic market is the intersection of the 75% draw areas of each mill (Sysco/US Foods)
- b. Plot the locations of the customers of each mill on a map
- c. Determine the circular areas around each of NCF's Brunswick mill and Henderson's Valdosta mill that draws 75% of their respective sales
- d. Determine the overlap of these two 75% draw areas (under Sysco/US Foods, this is the **relevant geographic market**)

NOTE: Perform this analysis separately for each potential relevant product identified above

3. Market participants, market shares, and *PNB* presumption

- a. Plot the locations of every mill within 100 miles of any farm in the overlap area to determine possible market participants
- b. Determine the 75% draw areas for each of these mills
- c. Determine which mills have 75% draw areas that completely overlap the relevant geographic market (together with NCF's Brunswick mill and Henderson's Valdosta mill, these are market participants in the relevant market)

- d. Estimate the sales that each market participant in the relevant geographic market, add any additional sales that the mill would likely make if the prices in the relevant geographic area increased by 5% (holding prices in all other areas constant), and calculate market shares
- e. Calculate the share of the combined company, the postmerger HHI and the delta (to see if the PNB presumption is predicated)
- f. To test the sensitivity of the market shares, estimate the total sales of each mill participant (not just its sales limited to the relevant geographic market), calculate market shares and compare the resulting merged company share, the postmerger HHI and the delta to those in 3(e) to see if there is a competitively meaningful difference.
- g. Examine the mill and customer locations maps to see if anything suggests that the Sysco/US Foods analysis provides a faulty competitive prediction.

NOTE: Perform this market analysis separately for each of the potential relevant products

4. Additional theories of anticompetitive harm

a. Observation

- i. We do not know anything about competitors in the relevant geographic market at this point, so we cannot form any hypotheses on whether there are any applicable additional theories of anticompetitive harm. We can only ask the basic predicate questions.
- ii. The questions should be asked separately for each potential relevant product.

b. Coordinated effects

i. Premerger susceptibility

- 1. How many firms are market participants?
- 2. Are prices and other terms of sale transparent to competitors?
- 3. What are the price dispersions among different types of products in the relevant product market?
- 4. Do the firms in the relevant market belong to a trade association or other organization that could serve as a forum to exchange information or otherwise facilitate tacit collusion?
- 5. Is there any history of lawful or especially unlawful cooperation among the firms in the relevant market?

ii. Postmerger enhancement

- 1. How many firms will remain in the relevant market after the merger?
- 2. Has either NCF or Henderson been disruptive in any way in the relevant market (e.g., engaged in aggressive pricing)

- c. Unilateral effects
 - i. Are NCF's Brunswick mill and Henderson's Valdosta mill uniquely close competitors in the relevant geographic market in any potential relevant product for any customers?
 - ii. If so, in what products and for each such product, what is the product, who are the customers, who are the next closest competitors, and how close are they to the merging firms?
- d. Elimination of a maverick
 - i. Covered above

Defenses

- 5. Entry/expansion/repositioning
 - a. How many new mills have entered in Georgia, Florida, or Alabama in the last seven years? Identify each mill and give its location, date of entry, estimated cost, whether it is integrated or independent, products produced, capacity, total sales, and sales (if any) in the relevant geographic market.
 - i. Same question for mill expansions
 - b. Are there any indications that a new mill will enter to serve one or more customers in the relevant geographic area? If so, provide all available details.
 - i. Same questions for mill expansions
 - c. What would it take to build a chicken feed mill to serve small- to medium-sized chicken farms?
 - i. Are there any material barriers to entry?
 - ii. How much land would be needed?
 - iii. Any environmental or other permits? If required, how long would it take and how much would it cost?
 - iv. How big a building would be required? Could an existing building be repurposed or would a new building be necessary?
 - v. What kind of equipment would be required and what is the acquisition cost?
 - vi. What kind and how many trucks would be required and what is the acquisition cost?
 - vii. What kind and how many employees would be required? What would their annual salaries be?
 - viii. How long would it take to build such a mill beginning with the purchase of suitable vacant land and what would be the total cost?
 - ix. What does the load on the mill have to be for the mill to break even?
 - x. What would it take for a new mill to obtain customers? Are there any reputational barriers to entry? How difficult will it be for the mill to obtain enough customers to make a reasonable return on its investment?

- xi. How much of the cost of a new mill could be recovered if the mill went out of business (that is, what is the liquidation value and what are the sunk costs)?
 - d. What kinds of firms, if any, could reasonably reposition their existing production lines for other products into the production of chicken feed? Give details.
- 6. Power buyers
 - a. How, if at all, could a customer in the relevant geographic area protect itself from an anticompetitive price increase by the combined company? By all firms serving the relevant geographic market?
 - b. How many customers does the NCF Brunswick mill have in the relevant geographic market and what is the share of Brunswick's sales does each customer account?
 - c. How many customers does the Henderson Valdosta mill have in the relevant geographic market and what is the share of Valdosta's sales does each customer account?
- 7. Efficiencies
 - a. What is the financial model for the acquisition? How does NCF expect to make money from the acquisition?
 - b. What, if any, benefits will the acquisition provide customers in the relevant geographic market? What support in documents or otherwise is there for any customer benefits?
 - c. If there are benefits to customers, could these benefits be provided to customers without the acquisition? If so, how?
 - d. What will customers say about the acquisition? Will they support it and, if so, why? Will they oppose it and, if so, why? Will they be neutral and, if so, why?
 - e. What alternatives, if any, did NCF consider to acquiring Henderson?
- 8. Failing firm
 - a. Is either NCF or Henderson unable to pay its bills?
 - b. What is the liquidation value of Henderson?
 - c. Have other firms shown any interest in acquiring Henderson (regardless of the price they would be willing to offer)?
 - d. If Henderson were put up for auction, would other firms have any interest in bidding?
- 9. Possible settlement relief
 - a. If the reviewing agency required NCF to divest either the Brunswick mill or the Valdosta mill to avoid a court challenge, would NCF agree to such a divestiture? If so, which mill would NCF want to divest? (H: Henderson's Valdosta mill) How difficult would it be to find a buyer for the mill to be divested?
 - b. If NCF was unwilling to divest one of the two mills, would it prefer to litigate or to terminate the acquisition agreement?