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The Growing Monopoly in the Corn Seed Industry: Is It Time for the Government to Interfere?

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THE GROWING MONOPOLY IN THE CORN SEED INDUSTRY: IS IT TIME FOR THE GOVERNMENT TO INTERFERE?

by: *Bethany Sumpter**

ABSTRACT

How a company conducts business is often a consumer concern. Individuals have accused company after company of monopolistic behavior. These individuals have also criticized the Department of Justice for not stopping a monopoly from forming in a specific industry. An example is the corn seed industry, where stakeholders have accused companies of monopolistic behavior. Recent mergers and acquisitions in the corn seed industry have left fewer companies in control, and because of this consolidation, individuals are urging the government to act. This Comment argues that, while the corn seed industry is on the road to containing a monopoly, the industry does not yet contain enough characteristics to warrant a government response. However, when a monopoly does form, the government should, and likely will, act.

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I. INTRODUCTION

Farmers, industry experts, agricultural organizations, and politicians are concerned about the corn seed industry's recent mergers.¹ The six most prominent companies in the seed industry, Bayer, DuPont, Monsanto, BASF, Syngenta, and Dow, have consolidated into four companies, Bayer, DowDuPont, ChemChina, and BASF.² A 2018 U.S. House bill reflects congressional concern with industry consolidation, pricing, and profitability:

In the United States, the [four] largest corn seed sellers accounted for 85[%] of the market in 2015, up from 60[%] in 2000. Over the past [twenty] years, the cost for an acre's worth of seeds for an average corn farmer has nearly quadrupled, and the cost of fertilizer has more than doubled. Yet corn yields increased only 36[%] over that time, and the price received for the sale of a bushel of corn increased only 31[%].³

Farm-industry stakeholders worry that these consolidations will negatively impact the corn seed industry.⁴ Organizations supporting farmers, including the American Farm Bureau⁵ and Farm Aid,⁶ have

1. Kristina Hubbard, *The Sobering Details Behind the Latest Seed Monopoly Chart*, CIV. EATS (Jan. 11, 2019), <https://civileats.com/2019/01/11/the-sobering-details-behind-the-latest-seed-monopoly-chart/> [<https://perma.cc/8MXJ-C5AR>]; *Farmers Overwhelmingly Oppose Bayer Monsanto Merger*, FARM AID (Mar. 8, 2018), <https://www.farmaid.org/issues/corporate-power/farmers-overwhelmingly-oppose-bayer-monsanto-merger/> [<https://perma.cc/7SJU-ZC3X>]; Food and Agribusiness Merger Moratorium and Antitrust Review Act of 2018, H.R. 6800, 115th Cong. (2018).

2. Hubbard, *supra* note 1.

3. H.R. 6800 § 2(7).

4. *See id.* § 2; *Farmers Overwhelmingly Oppose Bayer Monsanto Merger*, *supra* note 1.

5. The American Farm Bureau is a group of "farm and ranch families working together to build a sustainable future of safe and abundant food, fiber and renewable

vocally opposed the industry's mergers.⁷ Industry expert Philip Howard⁸ noted that even though the firms attempting to merge promised greater job growth prospects and innovation, Bayer recently eliminated 12,000 jobs, which equals roughly 10% of its workforce.⁹ Howard also worries that farmers' choices regarding seeds are decreasing due to industry consolidation.¹⁰

Politicians, organizations, and industry experts are not alone in worrying about industry consolidation, as farmers have also expressed concern.¹¹ Over 93% of farmers believe that the recent Bayer-Monsanto merger will adversely affect independent farmers and their communities.¹² They fear that Bayer's sheer power will make people want to buy products from the company and that Bayer will control industry data and pressure farmers into using chemical products.¹³ The recently merged company may shield farm data, raise prices, and reduce the quality and quantity of seed varieties, such as climate-adaptive seeds.¹⁴ Nebraska farmer Clay Govier stated, "From my perspective, [Monsanto-Bayer is] saying the exact opposite of what most people in the industry actually believe."¹⁵

The concern about mergers has led to criticism of the U.S. Department of Justice ("DOJ") for "weak antitrust law enforcement and oversight" that has "allowed a handful of firms to amass enormous market, economic, and political power over our global seed supply."¹⁶ In other words, farmers, organizations, and industry experts believe

fuel for our nation and the world." *About*, AM. FARM BUREAU FED'N, <https://www.fb.org/about/overview> [https://perma.cc/7SUB-L28Y].

6. "Farm Aid is a nonprofit organization whose mission is to keep family farmers on the land." *About Us*, FARM AID, <https://www.farmaid.org/about-us/> [https://perma.cc/3NT7-ATD5].

7. *Statement by Bob Young, Chief Economist, American Farm Bureau Federation, Regarding Bayer-Monsanto Merger*, WIS. FARM BUREAU FED'N (Sept. 14, 2016), <https://wfbf.com/ag-newswire/statement-by-bob-young-chief-economist-american-farm-bureau-federation-regarding-bayer-monsanto-merger/> [https://perma.cc/K5PF-ASB4]; *American Farm Bureau Urges Caution on Ag Mergers*, WIS. STATE FARMER (Sept. 20, 2016, 1:02 PM), <https://www.wisfarmer.com/story/opinion/2016/09/20/american-farm-bureau-urges-caution-ag-mergers/90741030/> [https://perma.cc/QR48-JLEK]; *Farmers Overwhelmingly Oppose Bayer Monsanto Merger*, *supra* note 1.

8. Philip Howard is a professor at Michigan State University, with his research focusing on the food system. *About/ CV*, PHILIP H. HOWARD, <https://philhoward.net/about/> [https://perma.cc/73FU-P85Q].

9. Hubbard, *supra* note 1.

10. *Id.*

11. *Farmers Overwhelmingly Oppose Bayer Monsanto Merger*, *supra* note 1.

12. *Id.*

13. *Id.*

14. *Id.*

15. Dana Varinsky, *The \$66 Billion Bayer-Monsanto Merger Just Got a Major Green Light – but Farmers Are Terrified*, BUS. INSIDER (Apr. 9, 2018, 9:48 PM), https://www.tuncdurmaz.com/uploads/1/6/0/1/16014332/bayer-monsanto_merger_gets_a_green_light_but_farmers_are_worried_-_business_insider_copy.pdf [https://perma.cc/VWX6-X9CS].

16. Hubbard, *supra* note 1.

that a monopoly is forming in the corn seed industry.¹⁷ Because these individuals are calling for the enforcement of U.S. antitrust laws, which illegalize monopolies, a careful review of the corn seed industry is warranted to determine if a monopoly exists.

A monopoly is “[a] type of commercial advantage enjoyed by one business entity that lets it determine to a significant extent the terms on which products or services may be obtained in a given region.”¹⁸ Monopolies were not always illegal in the United States.¹⁹ Originally, antitrust regulation responded to the formation of trusts, “a legal device used to coordinate multiple property owners through a unified management structure.”²⁰ Trusts led to significant industry consolidation, which prompted the government, at both the state and federal level, to pass antitrust regulations to counterbalance the lack of industry competition.²¹ Beginning in the 1880s, innovative agricultural and industrial technology facilitated corporate mergers and undercut smaller businesses.²² Antitrust law changes have historically followed economic and political changes, and the U.S. antitrust laws will likely continue responding accordingly.²³

Some analysts support relaxed enforcement of antitrust laws and argue that the government should minimally regulate industries to allow the free market to work.²⁴ For example, economic experts²⁵ believe “a truly free market, one unencumbered by concentrated power and wealth, could reinvigorate our democracy.”²⁶ Others believe that increased regulation is necessary for an industry’s success.²⁷ These

17. *Id.*; *Farmers Overwhelmingly Oppose Bayer Monsanto Merger*, *supra* note 1.

18. *Monopoly*, LEGAL INFO. INST., <https://www.law.cornell.edu/wex/monopoly> [<https://perma.cc/4F92-55QR>].

19. See Laura Phillips Sawyer, *US Antitrust Law and Policy in Historical Perspective 2* (Harvard Bus. Sch., Working Paper No. 19-110, 2019); *The Antitrust Laws*, FED. TRADE COMM’N, <https://www.ftc.gov/tips-advice/competition-guidance/guide-anti-trust-laws/antitrust-laws> [<https://perma.cc/A47W-JPSP>].

20. Sawyer, *supra* note 19, at 2.

21. *Id.*

22. *Id.* at 4.

23. *Id.* at 3.

24. Becky Beaupre Gillespie, *The Radical Benefits of a Truly Free Market*, U. CHI. L. SCH. (June 11, 2018), <https://www.law.uchicago.edu/news/radical-markets> [<https://perma.cc/DYLS-W6P7>].

25. Two economic experts who advocate for a free market are Eric Posner and Glen Weyl. Posner is a Kirkland and Ellis Distinguished Service Professor of Law at the University of Chicago Law School. He researches financial regulation, international law, and constitutional law. *Eric A. Posner*, U. CHI. L. SCH., <https://www.law.uchicago.edu/faculty/posner-e> [<https://perma.cc/J8A5-D9Z2>]. Weyl “use[s] ideas from [the] political economy to develop social technology for widely-shared prosperity and diverse cooperation.” *Biography*, GLEN WEYL, <http://glenweyl.com/biography/> [<https://perma.cc/J96C-MUFH>].

26. Gillespie, *supra* note 24.

27. Gerald Houseman, *Joseph Stiglitz and the Critique of Free Market Analysis*, CHALLENGE, Mar.–Apr. 2006, at 52, 59, https://www8.gsb.columbia.edu/faculty/jstiglitz/sites/jstiglitz/files/2006_Challenge.pdf [<https://perma.cc/M58J-437F>].

pro-regulation individuals often “associate [free enterprise] with price-fixing, the Enron Corporation, environmental threats, consumer fraud, union-busting, antitrust violations, deregulation, rationalizations for layoffs and for budget cuts in social welfare programs, privatization schemes, speculation, stock manipulation, chicanery, and corruption.”²⁸ Antitrust laws are just one solution supported by free-market critics.²⁹

Politicians, farmers, farm organizations, and industry experts argue that the government must step in and regulate the corn seed industry, specifically by enforcing U.S. antitrust laws.³⁰ However, it is not time for the government to execute these antitrust laws. This Comment argues that there is no monopoly in the corn seed industry today, but certain factors indicate there will likely be one in the future. Because corn is a crucial crop, eventually the government must, and likely will, prevent a monopoly from forming in this industry.³¹ Part II explains the corn industry’s history and corn’s importance in today’s market and economy. Part III defines a monopoly, discusses how courts identify one, and then argues that a monopoly does not exist in the corn seed industry today. Part IV discusses the monopoly that is starting to form and its underlying causes. Finally, Part V explores efforts to prompt industry regulation and how the government is likely to regulate the monopoly when it forms.

II. THE IMPORTANCE OF CORN

To appreciate why farmers, industry experts, farm organizations, and politicians closely watch the government’s regulation of the corn seed industry, one must consider the industry’s history and growth, and its importance today.

28. *Id.* at 53.

29. *See id.*; *see also Monopolization Defined*, FED. TRADE COMM’N, <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/single-firm-conduct/monopolization-defined> [<https://perma.cc/PUK3-XNLJ>].

30. Hubbard, *supra* note 1; *Farmers Overwhelmingly Oppose Bayer Monsanto Merger*, *supra* note 1.

31. *See* Laura Neff, *Types of Corn*, NATIVE SEEDS/SEARCH (June 12, 2018), <https://www.nativeseeds.org/blogs/blog-news/types-of-corn> [<https://perma.cc/Z95U-LN7H>]; *see also* JORGE FERNANDEZ-CORNEJO, U.S. DEP’T OF AGRIC., AGRIC. INFO. BULL. NO. 786, *THE SEED INDUSTRY IN U.S. AGRICULTURE: AN EXPLORATION OF DATA AND INFORMATION ON CROP SEED MARKETS, REGULATION, INDUSTRY STRUCTURE, AND RESEARCH AND DEVELOPMENT* 28 (2004), https://www.ers.usda.gov/webdocs/publications/42517/13616_aib786_1_.pdf?v=6048 [<https://perma.cc/92KY-8DBJ>].

A. *The Corn Industry Throughout History*

The corn industry has an extensive and robust history.³² Corn domestication occurred between 7,000 and 10,000 years ago in Mexico.³³ Trade networks across North and South America allowed corn to spread beyond Mexico.³⁴ Thus, when Europeans came to the Americas in 1492, about 300 different types of corn existed.³⁵

Methods for growing and planting corn have undoubtedly changed throughout the years.³⁶ In the late 1800s, most people grew open-pollinated varieties,³⁷ which “are seeds that result from pollination by insects, wind, self-pollination . . . or other natural forms of pollination.”³⁸ By the early 1900s, however, hybrid corn’s popularity increased,³⁹ largely due to the work of Henry A. Wallace.⁴⁰ Hybrid corn results “when a breeder selects two pure lines . . . and cross-pollinates them to produce a seed that combines desirable characteristics or ‘traits’ from both parents.”⁴¹ By 1965, 95% of U.S. corn was hybrid corn.⁴²

The 1980s saw growth in biotechnology⁴³ after the United States Supreme Court implied that a genetically modified seed could receive patent protection.⁴⁴ In the 1990s, patents caused mergers and acquisitions to become popular in the industry, as patents afforded “intellectual property protection to seeds,” which “encouraged firms to put more money into research and development,” but to achieve that, firms “often had to get bigger through mergers.”⁴⁵

32. See FERNANDEZ-CORNEJO, *supra* note 31, at 25–28; see generally Jon Derek Pruitt, *A Brief History of Corn: Looking Back to Move Forward*, U. NEB.-LINCOLN, May 6, 2016, at 1, 2, <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1006&context=PLanthealthdoc> [<https://perma.cc/Y4RX-BCBY>].

33. Pruitt, *supra* note 32, at 2.

34. *Id.* at 4.

35. *Id.*

36. FERNANDEZ-CORNEJO, *supra* note 31, at 25.

37. *Id.*

38. *Seed Buying 101: A Seed Gardener’s Glossary*, HOME GARDEN SEED ASS’N, <https://ucanr.edu/sites/ucmg2014conference/files/200053.pdf> [<https://perma.cc/SNZ6-YSF9>].

39. See FERNANDEZ-CORNEJO, *supra* note 31, at 25.

40. It has been stated that Henry Wallace’s “continual, persuasive editorial support in *Wallaces’ Farmer* for this new kind of corn undoubtedly had a major effect on corn belt farmers and helped speed the adoption of hybrids in Iowa and adjoining midwestern states.” William L. Brown, *H. A. Wallace and the Development of Hybrid Corn*, 47 THE ANNALS OF IOWA 167, 167 (1983).

41. *Seed Buying 101: A Seed Gardener’s Glossary*, *supra* note 38.

42. FERNANDEZ-CORNEJO, *supra* note 31, at 25.

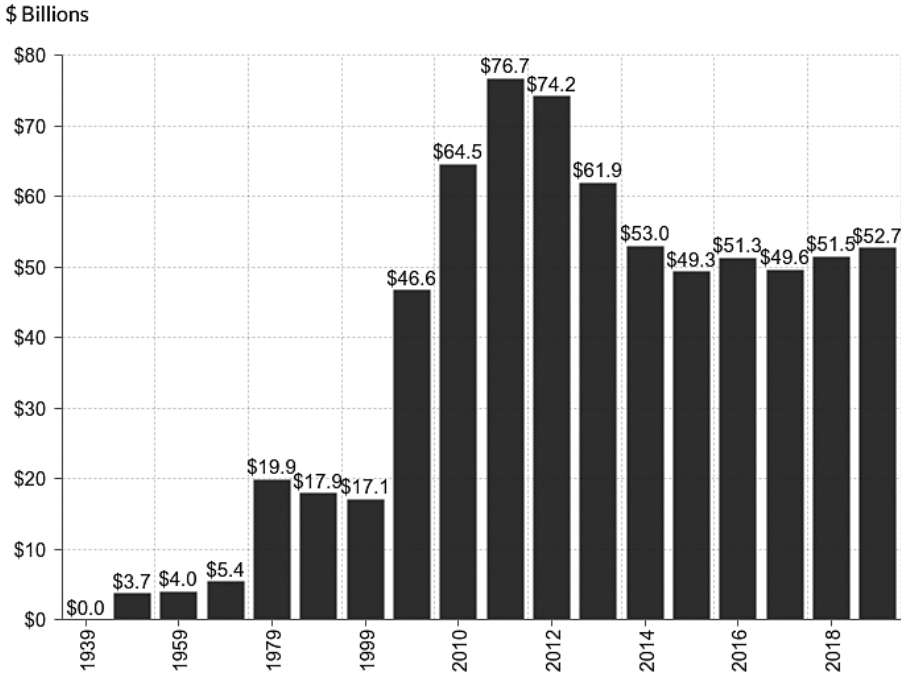
43. *Id.* at 26.

44. See *Diamond v. Chakrabarty*, 447 U.S. 303, 317–18 (1980); Gil Gullickson, *What Farmers Can Expect from the Latest Round of Seed Company Mergers*, SUCCESSFUL FARMING (June 27, 2019), <https://www.agriculture.com/crops/corn/what-farmers-can-expect-from-the-latest-round-of-seed-company-mergers/> [<https://perma.cc/GP5E-E3BM>].

45. Gullickson, *supra* note 44.

The chart below shows that the corn industry’s value boomed in 2000 and has since remained valuable.⁴⁶ For example, in 2019, the corn industry was worth about \$52.7 billion.⁴⁷ U.S. farmers planted around 89.7 million acres of corn, harvested around 81.5 million acres, and sold 13.7 billion bushels for an average price of \$3.85 per bushel.⁴⁸

U.S. CORN CROP VALUE
(1939–2019)



B. *The Uses of Corn*

Corn and its various types are relevant in the lives of many individuals today, whether one uses it for nutritional, cultural, or other practical purposes.⁴⁹ Thus, everyone in the world likely has a connection to corn in one way or another.⁵⁰

46. See *U.S. Corn Crop Value: 1939 – 2019*, NAT’L CORN GROWERS ASS’N, <http://www.worldofcorn.com/#us-corn-crop-value> [https://perma.cc/692H-UD75].

47. *U.S. Corn at a Glance 2019*, NAT’L CORN GROWERS ASS’N, <http://www.worldofcorn.com/#us-corn-at-a-glance> [https://perma.cc/M4KZ-YTHA].

48. *Id.*

49. See Neff, *supra* note 31.

50. See *id.*; Brent Gloy, *Trends in Corn Consumption*, AGRIC. ECON. INSIGHTS (Feb. 27, 2017), <https://aei.ag/2017/02/27/trends-corn-consumption/> [https://perma.cc/LNQ9-M3WR].

The different corn types include popcorn, flint, flour, dent, and sweet, producing more than 3,500 corn uses.⁵¹ Three out of four super-market products contain corn, resulting in the average American spending about \$267 yearly on products that contain corn.⁵² Corn's culinary uses include popcorn, grits, polenta, pinole, cornmeal, hominy, atole, bread, tamales, tortillas, posole, chicos, parched corn, elotes, corn beer, sugar, whiskey, and animal feed.⁵³ Non-culinary uses include penicillin, starch, ethanol, cornsilk, oil, and glue.⁵⁴

Corn's impact is also cultural.⁵⁵ For example, the Cornhusker is the University of Nebraska's mascot.⁵⁶ The Seneca Foods water tower in Minnesota displays an ear of corn.⁵⁷ South Dakota's Corn Palace attracts hundreds of thousands of tourists per year.⁵⁸ Finally, families explore corn mazes annually during fall festivities.⁵⁹ These symbols and activities indicate corn's cultural reach.⁶⁰

In short, corn's expansive reach underscores the importance of determining if a monopoly exists in the industry.

III. DETERMINING IF A MONOPOLY EXISTS

The U.S. legal framework establishes a two-prong test for analyzing an industry for monopolistic characteristics.⁶¹ This test is a touchstone for analyzing whether a monopoly exists in the corn seed industry today.

A. *Laws Governing Monopolies*

Throughout U.S. history, Congress has passed three major antitrust laws: the Sherman Act,⁶² the Federal Trade Commission Act,⁶³ and the Clayton Act.⁶⁴ The three antitrust laws generally aim "to protect the process of competition for the benefit of consumers, making sure

51. Rob Wile, *11 Wild Facts About Corn in America*, BUS. INSIDER (July 18, 2012, 10:45 AM), <https://www.businessinsider.com/facts-about-the-corn-industry-2012-7> [<https://perma.cc/NBT9-883B>]; Neff, *supra* note 31.

52. Wile, *supra* note 51.

53. Neff, *supra* note 31; Miss Cellania, *10 Ways We Use Corn*, MENTAL FLOSS (Oct. 9, 2010), <http://mentalfloss.com/article/26030/10-ways-we-use-corn> [<https://perma.cc/A8GD-Z6LD>].

54. Cellania, *supra* note 53.

55. Pruitt, *supra* note 32, at 95.

56. *Id.*

57. *Id.*

58. *Id.*

59. *Id.*

60. *Id.*

61. *Monopolization Defined*, *supra* note 29.

62. Sherman Antitrust Act of 1890, ch. 657, 26 Stat. 209 (codified as amended at 15 U.S.C. §§ 1–7).

63. Federal Trade Commission Act, ch. 311, 38 Stat. 717 (1914) (codified as amended at 15 U.S.C. §§ 41–58).

64. Clayton Act, Pub. L. No. 63-212, 38 Stat. 730 (1914) (codified as amended at 15 U.S.C. §§ 12–27).

there are strong incentives for businesses to operate efficiently, keep prices down, and keep quality up.”⁶⁵

The 1890 Sherman Act is a “comprehensive charter of economic liberty aimed at preserving free and unfettered competition as the rule of trade.”⁶⁶ The Sherman Act outlaws the unreasonable restraint of trade, including “arrangements among competing individuals or businesses to fix prices, divide markets, or rig bids.”⁶⁷ It also outlaws monopolization, whether it is an attempt, conspiracy, or combination.⁶⁸ The DOJ prosecutes violators, who face civil and criminal liability.⁶⁹

Congress passed the 1914 Federal Trade Commission Act⁷⁰ to outlaw unfair competition methods and deceptive practices.⁷¹ The United States Supreme Court ruled in *FTC v. Cement Institute* that if someone violates the Sherman Act, the individual may also violate the Federal Trade Commission Act.⁷²

The last primary antitrust law, the 1914 Clayton Act,⁷³ reflects a congressional attempt to address problems that the Sherman Act did not.⁷⁴ For example, the Clayton Act outlaws mergers and acquisitions that may significantly reduce competition or promote monopoly formation.⁷⁵ The Robinson-Patman Act later amended the Clayton Act to target discriminatory business activities relating to prices and services.⁷⁶

B. *Finding a Monopoly in an Industry*

Under U.S. antitrust laws, a monopoly exists in an industry when a firm has “significant and durable market power.”⁷⁷ A business may not unreasonably restrict competition by forming a monopoly.⁷⁸ Claims under the antitrust laws primarily relate to monopoly power gained through maintaining a significant portion of the industry’s mar-

65. *The Antitrust Laws*, *supra* note 19.

66. *Id.*

67. *Id.*

68. *Id.*

69. *Id.*

70. Federal Trade Commission Act, ch. 311, 38 Stat. 717 (1914) (codified as amended at 15 U.S.C. §§ 41–58).

71. *The Antitrust Laws*, *supra* note 19.

72. *See id.*; *FTC v. Cement Inst.*, 333 U.S. 683, 694 (1948).

73. Clayton Act, Pub. L. No. 63-212, 38 Stat. 730 (1914) (codified as amended at 15 U.S.C. §§ 12–27).

74. *The Antitrust Laws*, *supra* note 19.

75. *Id.*

76. *Id.*

77. *Monopolization Defined*, *supra* note 29; *see also* *Richter Concrete Corp. v. Hilltop Concrete Corp.*, 691 F.2d 818, 826–27 (6th Cir. 1982); *Ryko Mfg. Co. v. Eden Servs.*, 823 F.2d 1215, 1232 (8th Cir. 1987).

78. *Monopolization Defined*, *supra* note 29; *see also* *United States v. N.Y. Great Atl. & Pac. Tea Co.*, 67 F. Supp. 626, 636 (E.D. Ill. 1946), *aff’d*, 173 F.2d 79 (7th Cir. 1949); *Amphastar Pharms., Inc. v. Momenta Pharms., Inc.*, 297 F. Supp. 3d 222, 227–28 (D. Mass. 2018).

ket share.⁷⁹ However, the laws also prevent companies from attempting or conspiring to create a monopoly.⁸⁰ When determining if a company has violated the antitrust laws, courts use a two-prong test, discussed in detail below.⁸¹

1. The Two-Prong Test

After a court determines the relevant industry and the companies in that industry,⁸² the court will then move on to the two-prong test.⁸³ For the first prong, the court determines if the business has a leading position in the market.⁸⁴ If so, the court moves to the second prong to analyze whether the business improperly obtained that market power.⁸⁵ The court considers how that business's monopoly affects industry competition and whether the business can offer any pro-competitive rationale for its conduct.⁸⁶

a. Prong One

The first prong focuses on a company's monopoly power in the respective industry.⁸⁷ A company need not have a literal monopoly (where the firm has complete market control) to have monopoly power in an industry.⁸⁸ Courts instead target companies that have enough power to eliminate competitors or raise market prices.⁸⁹ Thus, courts consider the company's market share.⁹⁰ In general, monopoly power exists when the company's market share exceeds 50%.⁹¹ For example, the United States Court of Appeals for the D.C. Circuit determined that Microsoft had monopoly power when its products "account[ed] for a greater than 95% share" of the relevant market.⁹² Beyond market share, the company's "leading position must be sustainable over time: if competitive forces or the entry of new firms could discipline the conduct of the leading firm, courts are unlikely to find that the firm has lasting market power."⁹³

79. *Monopolization Defined*, *supra* note 29.

80. *Id.*

81. *See id.*; *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966).

82. *See Monopolization Defined*, *supra* note 29.

83. *See id.*

84. *Id.*

85. *Id.*

86. *Id.*; *see also Grinnell Corp.*, 384 U.S. at 570–71.

87. *Monopolization Defined*, *supra* note 29.

88. *Id.*

89. *Id.*

90. *Id.*

91. *Id.*

92. *United States v. Microsoft Corp.*, 253 F.3d 34, 54 (D.C. Cir. 2001) (*per curiam*).

93. *Monopolization Defined*, *supra* note 29.

A company can obtain market power in many ways,⁹⁴ including through mergers and acquisitions, which are popular because of their profitability.⁹⁵ Despite an increase in earnings for the merging companies, mergers and acquisitions are not always good for the industry as a whole.⁹⁶ After two companies merge, the newly created company naturally has more resources than either of the two could alone.⁹⁷ This increase in resources often allows the company to lower its prices and attract customers away from smaller businesses, making some smaller businesses suffer.⁹⁸

Patents are another popular way a company can obtain monopoly power in an industry.⁹⁹ Patents give inventors the exclusive right to their invention for a set time period.¹⁰⁰ Patents often create a monopoly because the patentee gains sole control of its work.¹⁰¹ “This is the very essence of a monopoly: being [the] sole supplier of some good[.]”¹⁰²

Other factors contributing to monopoly power include copyrights, zoning laws, licensing limits, insufficient supplies, and capital costs.¹⁰³ Therefore, if a company obtains monopoly power by gaining 50% of the market share in the industry through one of the many avenues discussed above, the court will move to prong two of the analysis.¹⁰⁴

94. See *Mergers*, FED. TRADE COMM’N, <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/mergers> [<https://perma.cc/37YW-6V22>]; *Copyright Is a Monopoly! (and Isn’t like Normal Property)*, RUFUS POLLOCK (Jan. 31, 2011), <https://rufuspollock.com/2011/01/31/copyright-is-a-monopoly-and-isnt-like-normal-property/> [<https://perma.cc/2WM3-ZFEB>] [hereinafter *Copyright Is a Monopoly!*].

95. See *Mergers*, *supra* note 94; Ahmed Modu Kumshe et al., *Effects of Mergers and Acquisitions on Profitability and Earnings Per Share of Selected Deposit Money Banks in Nigeria*, 7 EUR. J. BUS. & MGMT. 97, 104 (2015), <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.734.6909&rep=rep1&type=pdf> [<https://perma.cc/PT94-ZWHM>] (discussing a 2015 study showing that when two struggling banks merged, their profits increased).

96. Bruce A. Blonigen & Justin R. Pierce, *Mergers May Be Profitable, but Are They Good for the Economy?*, HARV. BUS. REV. (Nov. 15, 2016), <https://hbr.org/2016/11/mergers-may-be-profitable-but-are-they-good-for-the-economy> [<https://perma.cc/H3YA-ZS9D>].

97. Amanda McMullen, *The Effects of Mergers & Monopolies on Small Businesses*, CHRON, <https://smallbusiness.chron.com/effects-mergers-monopolies-small-businesses-37784.html> [<https://perma.cc/4QQU-4N7F>].

98. *Id.*

99. See *Entry and Efficiencies*, FED. TRADE COMM’N, <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/mergers/entry-efficiencies> [<https://perma.cc/NK8C-WAHT>].

100. Will Kenton, *Patent*, INVESTOPEDIA, <https://www.investopedia.com/terms/p/patent.asp> [<https://perma.cc/NEL5-KMCJ>].

101. See *Copyright Is a Monopoly!*, *supra* note 94.

102. *Id.*

103. *Entry and Efficiencies*, *supra* note 99.

104. *Monopolization Defined*, *supra* note 29.

b. Prong Two

The second prong analyzes whether the company used unfair practices to obtain monopoly power in the industry.¹⁰⁵ Courts determine the means used to obtain monopoly power,¹⁰⁶ focusing on companies that obtained their power through “exclusionary or predatory acts,” which include using “exclusive supply or purchase agreements; tying; predatory pricing; or refusal to deal.”¹⁰⁷

The first type of improper conduct involves exclusive supply or purchase agreements.¹⁰⁸ Exclusive supply agreements restrict suppliers from marketing toward other buyers, while exclusive purchase agreements compel dealers to only sell products from one manufacturer.¹⁰⁹ Exclusive agreements are a concern because they may prevent new firms from entering the market. Additionally, these agreements inhibit existing firms’ growth because they limit the number of buyers and sellers in the industry.¹¹⁰ Furthermore, the risks arising from exclusive contracts increase depending on how long the contract will last, the sources contracted with, and other available alternatives.¹¹¹ In *United States v. Microsoft Corp.*, the court recognized that Microsoft held exclusive dealings with “fourteen of the top fifteen access providers in North America,” which represented “a large majority of all Internet access subscriptions in this part of the world.”¹¹² The court, therefore, concluded the exclusive dealings were unfair practices.¹¹³

The second type of improper conduct is tying the sale of two products.¹¹⁴ Although there are advantages to offering two products in a package deal, monopolists that force buyers to purchase both products can invade previously un-entered markets and threaten those markets’ competition.¹¹⁵ Moreover, tying two products together may force consumers to buy a product that they did not need or want to buy.¹¹⁶ In *Microsoft Corp.*, the court suggested that Microsoft engaged in tying practices when it sold its operating system (Windows) with a

105. *Id.*

106. *Id.*

107. *Id.*

108. *Exclusive Supply or Purchase Agreements*, FED. TRADE COMM’N, <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/single-firm-conduct/exclusive-supply-or> [<https://perma.cc/7LJB-4S3Y>].

109. *Id.*

110. *Id.*

111. *Id.*

112. *United States v. Microsoft Corp.*, 253 F.3d 34, 70–71 (D.C. Cir. 2001) (per curiam).

113. *Id.* at 71.

114. *Tying the Sale of Two Products*, FED. TRADE COMM’N, <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/single-firm-conduct/tying-sale-two-products> [<https://perma.cc/T2QQ-79HK>].

115. *Id.*

116. *Id.*

pre-installed browsing software (Internet Explorer), effectively restricting Windows's buyers from uninstalling the browsing software should they desire.¹¹⁷ The effect on competition was that competitors could not use the lowest-cost means to challenge Microsoft's market share.¹¹⁸

The third type of improper conduct is predatory or below-cost pricing.¹¹⁹ Although low costs rarely harm consumers, sometimes they can.¹²⁰ Monopolists use low, sub-cost prices to kick competitors out of the market and then raise prices over market level afterward, which harms the consumer.¹²¹ The court in *Microsoft Corp.* noted that Microsoft allegedly priced its Internet Explorer browsing software at below-cost in a deliberate scheme to maintain profits in selling its Windows operating system.¹²²

Lastly, refusing to deal is improper conduct.¹²³ While this issue's jurisprudence is evolving, courts focus on how monopolies use refusal to deal to maintain or expand their reach.¹²⁴ It is likely improper for a company to refuse dealings with any supplier or customer that may threaten to deal with the company's rivals.¹²⁵ Even so, refusal to deal remains an unsettled area of law because businesses generally have no obligation to deal with their competitors, so forcing them to make a deal to avoid violating antitrust laws can seem counterproductive.¹²⁶ But if a company has market power, a court might still find that refusing to do business is improper.¹²⁷

Even if a company participates in improper conduct, a business justification may relieve the company of liability under the antitrust laws.¹²⁸ Courts favorably view companies that gain their monopoly power through good business decisions rather than the unfair practices discussed above.¹²⁹ If power was gained solely through good business decisions, a company does not violate antitrust laws, even if it has monopoly power in its industry.¹³⁰

117. *Microsoft Corp.*, 253 F.3d at 95–96.

118. *Monopolization Defined*, *supra* note 29.

119. *Predatory or Below-Cost Pricing*, FED. TRADE COMM'N, <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/single-firm-conduct/predatory-or-below-cost> [<https://perma.cc/4TQ7-HDNA>].

120. *Id.*

121. *Id.*

122. But the lower court did not assign liability for predatory pricing, and the plaintiffs did not pursue the issue on appeal. *Microsoft Corp.*, 253 F.3d at 68.

123. *Refusal to Deal*, FED. TRADE COMM'N, <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/single-firm-conduct/refusal-deal> [<https://perma.cc/927M-KM72>].

124. *Id.*

125. *Id.*

126. *Id.*

127. *Id.*

128. *Monopolization Defined*, *supra* note 29.

129. *Id.*

130. *Id.*

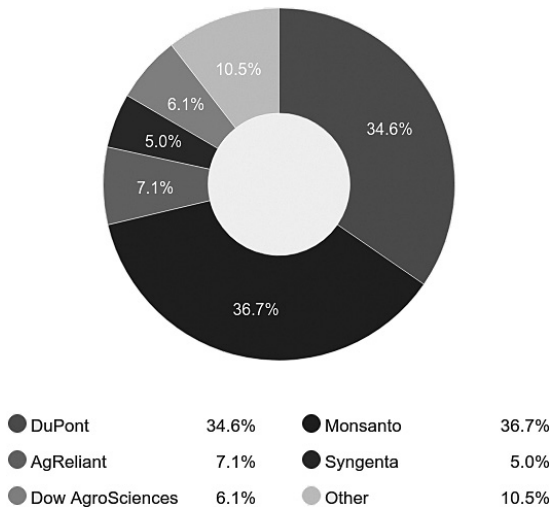
2. Applying the Test to the Corn Seed Industry Today

The corn seed industry is subject to the same two-prong test detailed above.¹³¹ This Comment accordingly explores the companies in the corn seed industry, including their market shares and potentially unfair practices.¹³²

a. Who Are the Players?

As of 2015, before any merger discussions between Dow and DuPont and between Bayer and Monsanto, five major companies controlled the industry: Monsanto with a 36.7% market share; DuPont, 34.6%; AgReliant, 7.1%; Dow AgroSciences, 6.1%; and Syngenta, 5.0%.¹³³ Various smaller companies controlled the remaining 10.5%.¹³⁴ While Bayer was participating in the seed industry at this point, the company's focus was on cottonseed, not corn seed.¹³⁵ Therefore, Bayer did not control any portion of the corn seed industry in 2015.¹³⁶

CORN SEED COMPANIES' MARKET SHARES
(2015)



131. See *supra* notes 77–130 and accompanying text.

132. *Monopolization Defined*, *supra* note 29.

133. Sonja Begemann, *Farm Journal: Mergers and Market Shifts*, VERDANT PARTNERS (July 23, 2016), <https://www.verdantpartners.com/post/farm-journal-mergers-and-market-shifts> [<https://perma.cc/4QDU-4ETA>] [hereinafter *Mergers and Market Shifts*].

134. *Id.*

135. See Sonja Begemann, *Farm Journal: What to Watch as Mergers Near the Finish Line*, VERDANT PARTNERS (Aug. 2, 2017), <https://www.verdantpartners.com/post/farm-journal-what-to-watch-as-mergers-near-the-finish-line> [<https://perma.cc/UXZ6-N7TR>].

136. See *Mergers and Market Shifts*, *supra* note 133.

However, two notable mergers changed the corn seed industry's market structure, as Monsanto merged with Bayer to become Bayer,¹³⁷ and DuPont merged with Dow to become DowDuPont.¹³⁸ The Dow-DuPont merger finalized in 2017,¹³⁹ while the Monsanto-Bayer merger finalized in 2018.¹⁴⁰ In 2019, Monsanto-Bayer (now Bayer) and Dow-DuPont (now DowDuPont) controlled 37% and 36% of the corn seed market share, respectively.¹⁴¹

b. Does a Corn Seed Company Have Monopoly Power?

After one determines the market share of the companies in the corn seed industry, one can analyze if any company has monopoly power.¹⁴² While Bayer's and DowDuPont's market shares are both significant,¹⁴³ it is unlikely that either company has monopoly power. Neither company's market share exceeds 50%,¹⁴⁴ the threshold courts tend to require.¹⁴⁵ Because analyzing the industry for a monopoly today would likely fail under the first prong, analyzing the second prong would be unnecessary.¹⁴⁶ However, assuming that these companies had monopoly power, they may exhibit some practices that would constitute improper conduct, which this Comment now discusses.

IV. IS A MONOPOLY FORMING IN THE CORN SEED INDUSTRY?

As explained above, few large and dominant companies currently control the corn seed industry,¹⁴⁷ and their market shares have continually increased throughout the years.¹⁴⁸ In 2015, four companies, Monsanto, DuPont, Dow, and Syngenta, controlled about 85% of the corn seed industry,¹⁴⁹ rising from 50.5% in 1988.¹⁵⁰

137. *See generally Bayer Plans Closing of Monsanto Acquisition on June 7*, BAYER (June 4, 2018), <https://media.bayer.com/baynews/baynews.nsf/id/Bayer-plans-closing-of-Monsanto-acquisition-on-June-7> [<https://perma.cc/RSY8-TUDN>].

138. *See generally DowDuPont Merger Successfully Completed*, DOW (Sept. 1, 2017), <https://corporate.dow.com/en-us/news/press-releases/dowdupont-merger-successfully-completed.html> [<https://perma.cc/P2JY-D24Z>].

139. *Id.*

140. *Bayer Plans Closing of Monsanto Acquisition on June 7*, *supra* note 137.

141. Stephen D. Simpson, *Why Is Monsanto Evil, but DuPont Isn't?*, INVESTOPEDIA, <https://www.investopedia.com/articles/investing/061913/why-monsanto-evil-dupont-isnt.asp> (Aug. 14, 2019) [<https://perma.cc/US3N-E4LU>].

142. *Monopolization Defined*, *supra* note 29.

143. *See* Simpson, *supra* note 141.

144. *Id.*

145. *See Monopolization Defined*, *supra* note 29.

146. *See id.*

147. *See supra* notes 133–41 and accompanying text.

148. Zoe Willingham & Andy Green, *A Fair Deal for Farmers: Raising Earnings and Rebalancing Power in Rural America*, CTR. FOR AM. PROGRESS (May 7, 2019, 12:00 PM), <https://www.americanprogress.org/issues/economy/reports/2019/05/07/469385/fair-deal-farmers/> [<https://perma.cc/2235-ATUZ>].

149. *Id.*

150. *See id.*

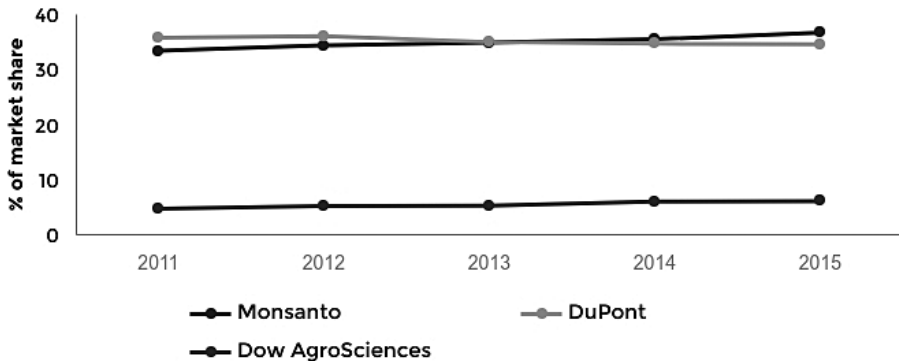
But with the recent mergers, one might wonder who is truly starting to form a monopoly in the industry—the answer: Bayer. Even though Bayer and DowDuPont have nearly identical market shares of 37% and 36%, respectively, what makes Bayer the company with the growing monopoly?¹⁵¹ Continuous market-share growth and the use of unfair practices make Bayer a likely future candidate for holding a monopoly.¹⁵²

A. *Passing the Two-Prong Test in the Future*

1. Will Bayer Have Monopoly Power in the Future?

A Bayer monopoly could only exist if Bayer obtained monopoly power in the industry.¹⁵³ Monsanto's (now Bayer's) market share has generally increased over the years.¹⁵⁴ Alternatively, DuPont's (now DowDuPont's) market share has steadily decreased.¹⁵⁵ Monsanto's, DuPont's, and Dow's market shares from 2011 to 2015,¹⁵⁶ before merger talks began, are shown below:

MONSANTO'S, DUPONT'S & DOW'S CORN SEED MARKET SHARES
(2011–2015)



Bayer's market share will likely continue growing for two reasons.¹⁵⁷ First, Bayer has increased its market share through mergers and acquisitions with other companies and, second, Bayer is obtaining patents, which are increasingly popular in the corn seed industry.¹⁵⁸

151. Simpson, *supra* note 141.

152. See *Mergers and Market Shifts*, *supra* note 133; Hubbard, *supra* note 1; Wen Zhou, *The Patent Landscape of Genetically Modified Organisms*, HARV. UNIV.: SCI. IN THE NEWS (Aug. 10, 2015), <http://sitn.hms.harvard.edu/flash/2015/the-patent-landscape-of-genetically-modified-organisms/> [<https://perma.cc/R7S4-YNSM>].

153. See *supra* notes 82–104 and accompanying text.

154. *Mergers and Market Shifts*, *supra* note 133.

155. *Id.*

156. *Id.*

157. Hubbard, *supra* note 1; Zhou, *supra* note 152.

158. Hubbard, *supra* note 1; Zhou, *supra* note 152.

Bayer is likely to continue using these tools and, therefore, continue receiving more monopoly power in the future.

a. Mergers and Acquisitions

The first way Bayer may gain monopoly power in the corn seed industry is through mergers and acquisitions.¹⁵⁹ The popularity of mergers and acquisitions in the corn seed industry relates to patents and economies of scale.¹⁶⁰ Companies often combine to gain control over products that one company has exclusive control of through patents,¹⁶¹ and enlarging through mergers and acquisitions facilitates economies of scale, discussed in greater detail below.¹⁶² For now, it is important to note that these factors have made mergers and acquisitions very popular in the corn seed industry.¹⁶³ As a result, Bayer has used them and will likely continue using them in the future.¹⁶⁴

Monsanto (before the Bayer-Monsanto merger) acquired approximately 100 seed companies from 1996 to 2018, and Bayer acquired about fifty during the same period, for a total of approximately 150 seed companies for the newly combined company, Bayer.¹⁶⁵ However, DowDuPont acquired significantly less companies during this time, with a combined total of about fifty-three companies.¹⁶⁶ If this trend continues, combined with other factors such as patents, Bayer is likely to reach an even-larger portion of the market than DowDuPont, and therefore could reach the monopoly-power threshold.¹⁶⁷

b. Patents

Patents are another way Bayer might obtain monopoly power in the corn seed industry.¹⁶⁸ Currently, corn seed companies can receive patents for any new genetically modified organism (“GMO”),¹⁶⁹ which “is a plant . . . whose genetic makeup has been modified in a laboratory using genetic engineering or transgenic technology.”¹⁷⁰ Farmers use GMOs as an alternative to pesticides to reduce plant-harming

159. See *Mergers*, *supra* note 94.

160. See Aleksandre Maisashvili et al., *Seed Prices, Proposed Mergers and Acquisitions Among Biotech Firms*, AGRIC. & APPLIED ECON. ASS’N: CHOICES, 2016, at 2–3, https://ageconsearch.umn.edu/bitstream/246985/2/cmsarticle_540.pdf [<https://perma.cc/FZT6-KURY>].

161. *Id.*

162. *Id.*

163. See *id.*

164. Hubbard, *supra* note 1.

165. *Id.*

166. *Id.*

167. See *id.*; *Monopolization Defined*, *supra* note 29.

168. See *Monopolization Defined*, *supra* note 29.

169. Zhou, *supra* note 152.

170. *What Is a GMO?*, NON-GMO PROJECT, <https://www.nongmoproject.org/gmo-facts/what-is-gmo/> [<https://perma.cc/45L2-4UJ7>].

pests.¹⁷¹ Because inventing a new GMO costs roughly \$136 million, companies need incentives, such as profits and exclusivity, to develop them.¹⁷² Thus, companies patent their GMOs to obtain exclusive use of the product.¹⁷³

Although GMOs can benefit the farmer, patenting GMOs can hurt the industry as a whole because of the monopoly that it often creates.¹⁷⁴ Patents concentrate business power, increase costs, obstruct research, and disrupt seed exchange between farmers.¹⁷⁵

As of 2009, some of the largest companies in the industry, including Monsanto, Bayer, and DuPont, had filed for 532 patents.¹⁷⁶ Moreover, the patent's popularity in the corn seed industry has only increased.¹⁷⁷ In 2013, Monsanto (now Bayer) owned "1,676 seed, plant and other applicable patents,"¹⁷⁸ and has since patented Roundup-tolerant corn and a GMO corn.¹⁷⁹ Roughly 80% of genetically modified corn planted in the United States is Monsanto's, suggesting that Bayer has a huge advantage in the corn seed industry by controlling this product through patents.¹⁸⁰ By comparison, in 2015, Dow and DuPont had a combined total of approximately 1,314 patents.¹⁸¹ Because Monsanto (now Bayer) has more patents, it likely has greater control over more products, which could lead to increased market share in the industry.¹⁸²

Because Bayer has participated in an increasing number of mergers and acquisitions and continues to receive patents on corn seeds,¹⁸³ Bayer's market share will likely increase in the coming years, allowing the company to obtain monopoly power in the industry.¹⁸⁴

171. Virginia Gewin, *Genetically Modified Corn—Environmental Benefits and Risks*, 1 PLOS BIOLOGY 15, 15–16 (2003), <https://doi.org/10.1371/journal.pbio.0000008>.

172. Zhou, *supra* note 152.

173. *Id.*

174. *Monopoly Patents & GMOs: Bad News for Farmers*, ORGANIC CONSUMERS ASS'N (Apr. 26, 2009), <https://www.organicconsumers.org/news/monopoly-patents-gmos-bad-news-farmers> [<https://perma.cc/LJR9-C6JV>].

175. *Id.*

176. *Id.*

177. *See U.S. and Monsanto Dominate Global Market for GM Seeds*, ORGANIC CONSUMERS ASS'N (Aug. 7, 2013), <https://www.organicconsumers.org/essays/us-and-monsanto-dominate-global-market-gm-seeds> [<https://perma.cc/YJ4P-BRV5>].

178. *Id.*

179. Zhou, *supra* note 152.

180. *U.S. and Monsanto Dominate Global Market for GM Seeds*, *supra* note 177.

181. Steve Brachmann, *Merger of Dow and DuPont Set to Make Huge Waves in Agriculture, Materials and Plastics Sectors*, IP WATCHDOG (Dec. 14, 2015), <https://www.ipwatchdog.com/2015/12/14/dowdupont-merger/id=63849/> [<https://perma.cc/W34T-DZG3>].

182. *See id.*; *U.S. and Monsanto Dominate Global Market for GM Seeds*, *supra* note 177; *Monopolization Defined*, *supra* note 29.

183. Hubbard, *supra* note 1; *U.S. and Monsanto Dominate Global Market for GM Seeds*, *supra* note 177.

184. *See Monopolization Defined*, *supra* note 29.

2. Does Bayer Participate in Unfair Practices?

A company with monopoly power is only liable under the antitrust laws if the company participated in unfair practices, as courts will not punish a company for having a solid business strategy.¹⁸⁵ Bayer's potentially unfair practices include exclusive supply agreements, tying the sale of two products, and the refusal to deal.¹⁸⁶

Monsanto (now Bayer) has made many efforts to ensure its customers exclusively use its products.¹⁸⁷ The company has filed nearly 1,000 suits against farmers, although it settled most of these suits out of court.¹⁸⁸ Many suits targeted farmers who allegedly violated licensing agreements to use Monsanto seed or who had unknowingly used Monsanto's GMOs.¹⁸⁹ Pursuing these unknown infringements made it nearly impossible for many farmers to grow the crops they desired, as farmers almost exclusively had to use Monsanto's products to avoid liability.¹⁹⁰ Similarly, in *Microsoft Corp.*, the court ruled that exclusive supply agreements were evidence of unfair practices when Microsoft had exclusive dealings with most access providers in its respective industry, meaning the consumers could only use Microsoft's products.¹⁹¹ Therefore, a court could also conclude that steps to limit the use of other corn seed products by Bayer are exclusive dealings, and thus unfair practices.¹⁹²

Similarly, Monsanto (now Bayer) has used "tying the sale" tactics involving its Roundup Ready herbicide and crop products.¹⁹³ Because farmers spray Roundup herbicide to prevent weed growth, they also need Roundup Ready crops, which are unaffected by the herbicide.¹⁹⁴ As a result of tying Monsanto products by making consumers buy Roundup herbicide with, for example, Roundup Ready corn seed to use the products successfully, the company grew substantially, as Monsanto's revenue doubled.¹⁹⁵ Likewise, in *Microsoft Corp.*, the court suggested that tying the web browser with the operating system

185. *Id.*

186. See *Exclusive Supply or Purchase Agreements*, *supra* note 108; *Tying the Sale of Two Products*, *supra* note 114; *Refusal to Deal*, *supra* note 123.

187. Valerie Reynoso, *The Rising Monopoly of Monsanto-Bayer*, COUNTERPUNCH (Sept. 20, 2019), <https://www.counterpunch.org/2019/09/20/the-rising-monopoly-of-monsanto-bayer/> [<https://perma.cc/GF9X-3LZT>].

188. *Id.*

189. *Id.*

190. See *id.*

191. *United States v. Microsoft Corp.*, 253 F.3d 34, 71–72 (D.C. Cir. 2001) (per curiam).

192. See *Exclusive Supply or Purchase Agreements*, *supra* note 108; Reynoso, *supra* note 187.

193. Reynoso, *supra* note 187; see generally *Tying the Sale of Two Products*, *supra* note 114.

194. Maggie Delano, *About Roundup Ready Crops*, ROUNDUP READY CROPS (2009), <https://web.mit.edu/demoscience/Monsanto/about.html> [<https://perma.cc/KFP2-FNMK>].

195. Reynoso, *supra* note 187.

evidenced unfair practices.¹⁹⁶ Therefore, a court could also determine that Bayer tying the corn seed and Roundup together is an unfair practice.¹⁹⁷

Finally, the DOJ has investigated Monsanto (now Bayer) for anti-competitive practices that could factor into a refusal to deal analysis.¹⁹⁸ Although the refusal to deal doctrine is evolving, Monsanto has implicated the doctrine through using potentially exploitative practices relating to its patents on soybean, cotton, and transgenic corn.¹⁹⁹ Although courts are not clear on the exact standard for refusal to deal, Monsanto's limiting competition could likely factor into the analysis.²⁰⁰

Monsanto's (now Bayer's) practices unlikely trigger a fourth factor in the analysis, namely predatory or below-cost pricing,²⁰¹ which has been a non-issue in the corn seed industry.²⁰² In fact, farmers continue buying Monsanto's seeds despite pricing complaints.²⁰³ Even so, Bayer's other practices—exclusive supply agreements, tying the sale of two products, and refusal to deal—would likely be enough for the court to treat the company as a monopoly, with the condition that Bayer obtains 50% of the market share.²⁰⁴

B. *Impacts of the Growing Monopoly in the Corn Seed Industry*

Because Bayer is likely to form a monopoly in the corn seed industry, it is important to consider both the advantages and disadvantages this poses from the monopolist's (Bayer's) and the consumer's perspectives. Here, the most significant benefit is for Bayer, as it can achieve economies of scale.²⁰⁵ However, many negatives could result, including raised prices and decreased research and development.²⁰⁶

196. *United States v. Microsoft Corp.*, 253 F.3d 34, 95–96 (D.C. Cir. 2001) (per curiam).

197. *See Tying the Sale of Two Products*, *supra* note 114; Reynoso, *supra* note 187.

198. Reynoso, *supra* note 187; *see generally Refusal to Deal*, *supra* note 123.

199. Reynoso, *supra* note 187.

200. *See id.*; *Refusal to Deal*, *supra* note 123.

201. *See generally Predatory or Below-Cost Pricing*, *supra* note 119.

202. *See* Sonja Begemann, *Seed Price Triples over Last 20 Years*, FARM J. AGWEB (July 20, 2017, 5:12 PM), <https://www.agweb.com/article/seed-price-triples-over-last-20-years-NAA-sonja-begemann> [<https://perma.cc/EQ96-A9EQ>].

203. *The Planet Versus Monsanto*, FORBES (Dec. 31, 2009, 4:40 PM), <https://www.forbes.com/forbes/2010/0118/americas-best-company-10-gmos-dupont-planet-versus-monsanto.html#329f39810dc8> [<https://perma.cc/UE6U-YQ8T>].

204. *See Monopolization Defined*, *supra* note 29.

205. *Monopoly and Market Power*, BODY OF KNOWLEDGE ON INFRASTRUCTURE REGUL., <http://regulationbodyofknowledge.org/market-structure-and-competition/monopoly-market-power/> [<https://perma.cc/KN26-9L2F>].

206. *See id.*; Willingham & Green, *supra* note 148.

1. Advantages

The most significant advantage to monopolization is achieving economies of scale.²⁰⁷ Economies of scale benefit the monopolist, as they “imply that the firm’s average cost declines as the firm increases output.”²⁰⁸ As mentioned above, mergers and acquisitions facilitate economies of scale because combining allows companies to become larger, thus decreasing costs.²⁰⁹

Here, economies of scale are particularly advantageous for Bayer because developing a genetically modified crop is expensive.²¹⁰ The business-development cost for genetically modifying a plant is typically around \$136 million,²¹¹ which may be too expensive for smaller companies.²¹² But larger companies with economies of scale, which Bayer continues to obtain as it increases its monopoly power, may have the ability to make this investment to produce a new genetically modified plant.²¹³

Some benefits that farmers gain from growing genetically modified crops include “lower production costs, fewer pest problems, reduced use of pesticides, and better yields.”²¹⁴ If companies did not have economies of scale, farmers might not be able to reap these benefits because of less genetically modified plants.

2. Disadvantages

A negative impact for farmers is raised prices, as farmers expect mergers and acquisitions to increase corn seed prices by 2.3%.²¹⁵ This equals an average increase of \$1,000 for farmers each year.²¹⁶ Following fertilizer, corn seed is already the second-highest operating cost for farmers, indicating an increase in this cost could very negatively impact American farmers.²¹⁷

A monopoly would also inhibit research and development (“R&D”), seed options, and overall innovation.²¹⁸ The combined R&D budget for the new company Bayer is lower than the combined

207. See *Monopoly and Market Power*, *supra* note 205.

208. *Id.*

209. Maisashvili et al., *supra* note 160, at 3.

210. *Cost of Bringing a Biotech Crop to Market*, CROP LIFE INT’L, <https://croplife.org/plant-biotechnology/regulatory-2/cost-of-bringing-a-biotech-crop-to-market/> [<https://perma.cc/M2JD-Z63H>].

211. *Id.*

212. See *id.*

213. See *id.*; *Monopoly and Market Power*, *supra* note 205.

214. Nat’l Acad. of Scis., *Genetically Engineered Crops Benefit Many Farmers, but the Technology Needs Proper Management to Remain Effective, Report Suggests*, SCI. DAILY (Apr. 22, 2010), <https://www.sciencedaily.com/releases/2010/04/100413112058.htm> [<https://perma.cc/LE8R-TEX9>].

215. Willingham & Green, *supra* note 148.

216. *Id.*

217. *Id.*

218. *Id.*

R&D total for both companies separately.²¹⁹ In 2017, the year before Bayer-Monsanto finalized the merger, Monsanto had an R&D budget of \$1,607,000,²²⁰ while Bayer's R&D budget for crop science was \$1,166,000,²²¹ for a combined total of \$2,773,000. However, after the 2018 merger, the R&D budget was \$1,950,000,²²² significantly less than the previous year's combined total. Furthermore, as mergers, acquisitions, and market concentration continue to accelerate in the seed industry, R&D also decreases.²²³ Lastly, as consolidation in the corn seed industry occurs, farmers lose choices when purchasing corn seeds.²²⁴ As a result, the farmers' choices regarding corn seed will likely decrease as Bayer's monopoly power increases.²²⁵

V. THE GOVERNMENT'S REGULATION OF THE CORN SEED MONOPOLY

Many individuals have encouraged the government to regulate the corn seed industry.²²⁶ However, as explained above, it is not time for government action. A discussion about the actions stakeholders are taking, and how the government is likely to respond to a Bayer monopoly when appropriate, is below.

A. *What Actions Are Stakeholders in the Corn Seed Industry Currently Taking to Prompt Regulation?*

Farmers, industry experts, farm organizations, and even political allies in the corn seed industry are opposing Bayer's potential power grab.²²⁷ Farmers are filing lawsuits against Bayer, organizations have publicly stated their opposition to the mergers in the industry, and lawmakers recently considered legislation that would place a moratorium on mergers in the agriculture industry.²²⁸

219. Compare MONSANTO, SHARING VALUE, SUSTAINING INNOVATION: 2017 ANNUAL REPORT 8, https://monsanto.com/app/uploads/2017/12/2017_Monsanto_Annual_Report.pdf [<https://perma.cc/AF4J-LZSE>] [hereinafter MONSANTO 2017 REPORT], and BAYER, 2017 ANNUAL REPORT 63 [hereinafter BAYER 2017 REPORT], with BAYER, 2018 ANNUAL REPORT ch. B 4/2 [hereinafter BAYER 2018 REPORT].

220. MONSANTO 2017 REPORT, *supra* note 219, at 8.

221. BAYER 2017 REPORT, *supra* note 219, at 63.

222. BAYER 2018 REPORT, *supra* note 219, at ch. B 4/2.

223. Willingham & Green, *supra* note 148.

224. *Id.*

225. *Id.*

226. See Jacob Bunge, *Bayer, BASF Ordered to Pay \$265 Million in Weedkiller Crop-Damage Suit*, WALL ST. J., <https://www.wsj.com/articles/bayer-basf-ordered-to-pay-265-million-in-weedkiller-crop-damage-suit-11581795711> (Feb. 15, 2020, 5:38 PM) [<https://perma.cc/2KFE-5LZF>]; Hubbard, *supra* note 1; *Farmers Overwhelmingly Oppose Bayer Monsanto Merger*, *supra* note 1; Food and Agribusiness Merger Moratorium and Antitrust Review Act of 2018, H.R. 6800, 115th Cong. (2018).

227. See Bunge, *supra* note 226; Hubbard, *supra* note 1; *Farmers Overwhelmingly Oppose Bayer Monsanto Merger*, *supra* note 1; H.R. 6800.

228. See Bunge, *supra* note 226; Hubbard, *supra* note 1; *Farmers Overwhelmingly Oppose Bayer Monsanto Merger*, *supra* note 1; H.R. 6800.

Farmer Bill Bader sued Bayer after claiming that the company encouraged farmers to spray its uncontrollable weed killer, causing damage to his fruit trees.²²⁹ The jury awarded Bader \$265 million.²³⁰ Attorneys are hopeful that the positive verdict in the Bader case will encourage others to sue Bayer.²³¹ As of October 2019, more than 42,000 plaintiffs joined a lawsuit against Bayer claiming that the company's Roundup product caused cancer.²³² They argue that the company failed to warn them of the product's cancer risk.²³³

Second, farm organizations are advocating against mergers,²³⁴ with forty-five different organizations having rallied against the then-proposed Bayer-Monsanto merger.²³⁵ Farm Aid, National Farmers Union,²³⁶ Organization for Competitive Markets,²³⁷ Organic Seed Alliance,²³⁸ SumOfUs,²³⁹ and Friends of the Earth²⁴⁰ are all organizations that are helping support farmers.²⁴¹ Roger Johnson, the president of National Farmers Union, stated: "Family farmers deserve fair prices, choices in what they plant, and the type of market competition that incentivizes firms to compete and innovate for their business. A Bayer-Monsanto merger stands to move each of these factors in the wrong direction, and that is away from competitive markets."²⁴² These organizations will likely continue supporting farmers by opposing future industry consolidation.²⁴³

229. Bunge, *supra* note 226.

230. *Id.*

231. *Id.*

232. *Roundup Weedkiller: 42,000 Plaintiffs Sue Bayer over Glyphosate*, DEUTSCHE WELLE (Oct. 30, 2019), <https://www.dw.com/en/roundup-weedkiller-42000-plaintiffs-sue-bayer-over-glyphosate/a-51043520> [<https://perma.cc/B8L9-QHV6>].

233. *Id.*

234. *Farmers Overwhelmingly Oppose Bayer Monsanto Merger*, *supra* note 1.

235. *Id.*

236. "[National Farmers Union] has always worked to protect and enhance the economic well-being and quality of life for family farmers, fishers, ranchers and rural communities . . ." *About NFU*, NAT'L FARMERS UNION, <https://nfu.org/about/> [<https://perma.cc/QBR6-HSQE>].

237. "Organization for Competitive Markets . . . is a membership-based research and advocacy organization working to expose and break the stranglehold of corporate consolidation in our food and agricultural economy." *About OCM*, ORG. FOR COMPETITIVE MKTS., <https://competitivemarkets.com/about/> [<https://perma.cc/PK79-X44R>].

238. "Organic Seed Alliance advances ethical seed solutions to meet food and farming needs in a changing world." *Our Story*, ORGANIC SEED ALL., <https://seedalliance.org/our-story/> [<https://perma.cc/7SVH-BAYR>].

239. "SumOfUs is a community of people from around the world committed to curbing the growing power of corporations." *About Us*, SUMOFUS, <https://www.sumofus.org/about/> [<https://perma.cc/D6ZP-M3F7>].

240. "Friends of the Earth strives for a more healthy and just world." *About Us*, FRIENDS OF THE EARTH, <https://foe.org/about-us/> [<https://perma.cc/J7DM-PJMD>].

241. *Farmers Overwhelmingly Oppose Bayer Monsanto Merger*, *supra* note 1.

242. *Id.*

243. *See id.*

Third, Congress proposed the Food and Agribusiness Merger Moratorium and Antitrust Review Act of 2018²⁴⁴ to “impose a moratorium on large agribusiness, food and beverage manufacturing, and grocery retail mergers, and to establish a commission to review large agriculture, food and beverage manufacturing, and grocery retail mergers, concentration, and market power.”²⁴⁵ While Congress has made no further progress on this law, merely introducing it reflects political concern about the consolidation in the corn seed industry.²⁴⁶

B. *Will and Should the Government Regulate the Corn Seed Monopoly?*

The government likely will, and should, act regarding the monopoly forming in the corn seed industry, as “[a]ggressive competition among sellers in an open marketplace gives consumers – both individuals and businesses – the benefits of lower prices, higher quality products and services, more choices, and greater innovation.”²⁴⁷ These benefits are powerful and important considerations for consumers, who predominantly care about low prices, selection variety, and quality products and services.²⁴⁸

However, as explained above, it is not time for the government to interfere in the corn seed industry because Bayer is unlikely violating the antitrust laws today due to a lack of monopoly power.²⁴⁹ But the government will likely act, specifically when Bayer’s market share exceeds 50%.²⁵⁰ The government has two regulatory avenues: merger policy and breaking up the monopoly.²⁵¹ This Comment discusses these methods in greater detail below.

244. Food and Agribusiness Merger Moratorium and Antitrust Review Act of 2018, H.R. 6800, 115th Cong. (2018).

245. *Id.*

246. *See id.*

247. *Guide to Antitrust Laws*, FED. TRADE COMM’N, <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws> [<https://perma.cc/Y3XK-EFZS>].

248. FED. TRADE COMM’N, *COMPETITION COUNTS: HOW CONSUMERS WIN WHEN BUSINESSES COMPETE 2*, <https://www.ftc.gov/sites/default/files/attachments/competition-counts/zgen01.pdf> [<https://perma.cc/FK67-8UBD>].

249. Simpson, *supra* note 141; *see Monopolization Defined, supra* note 29.

250. *See Monopolization Defined, supra* note 29.

251. *See generally Premerger Notification and the Merger Review Process*, FED. TRADE COMM’N, <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/mergers/premerger-notification-merger-review> [<https://perma.cc/54LC-SP9L>]; Matthew Lane, *The Great Antitrust Breakup: Often Threatened, Rarely Executed*, DISRUPTIVE COMPETITION PROJECT (Mar. 13, 2018), <http://www.project-disco.org/competition/031318-the-great-antitrust-breakup-often-threatened-rarely-executed/> [<https://perma.cc/J9Z7-6EX9>].

1. Merger Policy

The government's merger policy would apply when a company obtained monopoly power through a merger.²⁵² Because the government wants to prevent any mergers disallowed under antitrust laws, it requires a premerger notification.²⁵³ Businesses attempting to merge or acquire must file this notification and then wait for government review and authorization before proceeding.²⁵⁴ When determining whether a merger is allowed under the antitrust laws, "[t]he key question the agency asks is whether the proposed merger is likely to create or enhance market power or facilitate its exercise."²⁵⁵

The DOJ's past decisions to approve mergers in the corn seed industry do not necessarily forecast the future.²⁵⁶ When the DOJ approved the Bayer-Monsanto merger, it included the condition that the "merging parties divest holdings in narrowly drawn input markets in which they directly competed."²⁵⁷ In the Competitive Impact Statement that the United States filed against Bayer-Monsanto, the government stated:

Bayer and Monsanto are close competitors in the GM seeds and traits markets for three important U.S. row crops: cotton, canola, and soybeans. . . . [T]he proposed merger would likely lead to a substantial lessening of competition in each of these markets, resulting in hundreds of millions of dollars in harm each year to American farmers and consumers.²⁵⁸

Therefore, the divesting²⁵⁹ was not for every product that Bayer-Monsanto sold, just in the industries it held too much market power: cotton, canola, and soybeans.²⁶⁰ The DOJ's action shows that the government is aware of Bayer's growing power.²⁶¹ This means if Bayer's market share reaches 50% in the corn seed industry due to a merger, the DOJ will likely take steps to interfere by forcing the company to divest holdings that would create a market share under 50% for corn seed.²⁶²

252. See *Premerger Notification and the Merger Review Process*, *supra* note 251.

253. See *id.*

254. *Id.*

255. *Mergers*, *supra* note 94.

256. See Willingham & Green, *supra* note 148.

257. *Id.*

258. Proposed Final Judgment and Competitive Impact Statement, *United States v. Bayer AG*, 83 Fed. Reg. 27,670, 27,671 (June 13, 2018).

259. Divesting means that Bayer-Monsanto had to reduce the assets it held in the corn seed industry. See Akhilesh Ganti, *Divestment*, INVESTOPEDIA, <https://www.investopedia.com/terms/d/divestment.asp> (Nov. 2, 2020) [<https://perma.cc/S8V8-2CF8>].

260. Proposed Final Judgment and Competitive Impact Statement, 83 Fed. Reg. at 27,674.

261. See *id.*

262. See *Monopolization Defined*, *supra* note 29; Willingham & Green, *supra* note 148.

2. Breaking Up a Monopoly

The government breaks up a monopoly when a company obtains monopoly power by means other than mergers, such as patents.²⁶³ However, the government rarely elects this option, as breaking up a monopoly can negatively impact innovation and company efficiency.²⁶⁴ And just the threat of breaking up a company may be enough to incentivize good behavior.²⁶⁵ But in the limited circumstances where the government has exercised this option, the government could readily discern how to split the company into component parts or subsidiaries.²⁶⁶ Discerning the proper split becomes difficult after companies consolidate activities through a merger.²⁶⁷

Because Bayer and Monsanto already merged, a government breakup is problematic. But to the extent the government could identify a proper split, this option remains on the table if it cannot successfully implement another remedy to combat the monopoly power.

VI. CONCLUSION

Corn seed is an integral part of society for agricultural, cultural, and practical purposes. Thus, mergers of significant corn seed companies have caught the eye of many organizations and farmers alike. Some have called for the DOJ to enforce the antitrust laws against Bayer, as it seems to be taking over the corn seed industry. Yet, a close examination reveals that, despite the company's growth, a monopoly is not present today.

Courts will not find a company liable under the antitrust laws unless the company has monopoly power. Despite holding a large portion of the corn seed industry's market share, Bayer has not reached the requisite threshold. Therefore, it is not time for the government to pursue Bayer for holding a monopoly.

Even so, evidence indicates that in the future Bayer will hold this power. Bayer's market share has continually increased, and this monopoly power will likely increase through Bayer's many mergers, acquisitions, and patents. Bayer's business practices are also likely unfair, the second requirement for courts to determine a monopoly exists. These include exclusive purchase contracts, tying the sale of two products, and the refusal to deal. Collectively, Bayer's unfair practices and monopoly power would likely allow the DOJ to pursue Bayer under the antitrust laws.

When Bayer gains the required market share, the two ways that the government could regulate the corn seed industry is through the U.S.

263. See generally Lane, *supra* note 251.

264. *Id.*

265. *Id.*

266. *Id.*

267. *Id.*

merger policy or through breaking up the monopoly. As past decisions indicate, the government will likely use the merger policy. However, breaking up the monopoly remains an option, provided a court could determine how to split Bayer into component parts or subsidiaries.

In conclusion, the government will likely regulate Bayer's corn seed monopoly when Bayer reaches 50% of the market share in the corn seed industry. When the government regulates, it will likely be successful because of the evidence that Bayer has used unfair practices. Until then, Bayer does not hold monopoly power in the corn seed industry, and thus, it is not time for the government to regulate.

