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**The American
Antitrust Institute**

***Monsanto's Proposed Acquisition of Delta and Pine Land:
An Antitrust White Paper***

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Introduction

The American Antitrust Institute (AAI) has conducted an independent review of the proposed acquisition of Delta and Pine Land (D&PL) by Monsanto. Monsanto is a leading developer and licensor of commercially important agricultural biotechnology “traits” and seed for a range of crops. Biotechnology traits are specific genetic modifications that are incorporated into seed to increase yield, reduce input costs, or obtain other desirable crop characteristics. D&PL runs the largest cotton seed breeding program in the world and is a leading producer of genetically modified cotton seed.

The AAI’s review of the proposed merger has been informed by discussions with industry personnel and a review of publicly available data and information. We believe this background provides an adequate understanding of the specifics to frame the major potential competitive concerns raised by the proposed transaction. The AAI has not had access to any company’s confidential information. Our analysis and recommendations are therefore limited accordingly.

Based on the available information, the AAI believes that the combination raises a number of potentially problematic horizontal and vertical competitive issues in relevant markets for (1) research and development (R&D) for, and licensing of, cotton biotechnology traits (“cotton traits”), and (2) the breeding, production, and distribution of genetically modified cotton seed (“cotton seed”). These concerns raise the possibility that the proposed merger of Monsanto and D&PL may tend substantially to lessen competition under Section 7 of the Clayton Act, to the detriment of the merged firm’s rivals (e.g., cotton traits developers and cotton seed companies), cotton farmers, and U.S.

¹ Vice President and Senior Research Fellow, American Antitrust Institute (AAI). The American Antitrust Institute is an independent Washington-based non-profit education, research, and advocacy organization. Our mission is to increase the role of competition, assure that competition works in the interests of consumers, and challenge abuses of concentrated economic power in the American and world economy. For more information, please see www.antitrustinstitute.org. This working paper has been reviewed by the AAI Policy Committee and other individuals inside and outside the AAI. It has also been approved by the AAI Board of Directors. A list of our contributors of \$1,000 or more is available on request.

consumers of cotton-based commodities. The purpose of this AAI White Paper is to frame out the major competitive issues raised by the proposed merger of Monsanto and D&PL. The AAI urges the Department of Justice (DOJ) Antitrust Division to focus on these issues in investigating the proposed transaction:

- ***The merger could result in a “closed” cotton supply chain system that potentially undermines competition.*** The potential creation of a large, closed cotton supply chain system should serve as an important backdrop for evaluating the competitive effects of a Monsanto/D&PL combination. This development could raise broader public policy concerns about consumer choice, supply system stability and diversity of suppliers and human health and safety.
- ***The proposed merger could eliminate D&PL as an actual potential competitor in R&D for, and licensing of, cotton traits.*** Post-merger, Monsanto/D&PL could have a greatly diminished incentive to continue D&PL’s pre-merger partnerships with rival cotton traits developers, since they could undermine Monsanto’s dominant position in cotton traits. Elimination of D&PL as a potential competitor could stifle innovation in cotton traits.
- ***The proposed merger could enhance the ability and incentive of the merged company to adversely affect prices and output by engaging in strategic exclusionary behavior.*** The proposed merger combines Monsanto, with at least 95 percent of the cotton traits (upstream or input) market, and D&PL, with 50 percent of the cotton seed (downstream or output) market. Upstream market concentration is at least 9,000 HHI and downstream market concentration is 3,191 HHI. Under these circumstances, there is a high probability that rivals could successfully be foreclosed from both the cotton traits and cotton seed markets. Foreclosure could also raise barriers to entry to affected markets.
- ***The proposed merger potentially reduces choices available to cotton farmers.*** The merged company could have few incentives to continue development or marketing of conventional (i.e., non-genetically modified) cotton seed, even though it is still in demand by some cotton farmers.
- ***Entry and merger-related efficiencies should be carefully scrutinized to determine if they could counteract potential competitive harm from the proposed merger.*** The proposed merger is unlikely to generate significant efficiencies that have not already been realized through Monsanto’s joint venture development activities and sophisticated licensing of cotton biotechnology. Moreover, the need for extensive R&D and regulatory requirements impose high costs and long lead times on firms in cotton traits and cotton seed markets, reducing the probability that entry could discipline any anticompetitive behavior after the merger.

- ***Monsanto’s proposed fixes for potential competitive problems created by the merger are likely to be inadequate.*** Divestiture of Monsanto’s Stoneville asset is likely to be an inadequate remedy for all of the potential competitive problems raised by the proposed merger. Moreover, Monsanto’s commitment to continue licensing its cotton traits is a behavioral “fix” that would tend not to preclude any anticompetitive conduct.

Background on This and Prior Monsanto/D&PL Transactions

On August 15, 2006, Monsanto and D&PL announced that Monsanto would purchase D&PL for \$1.5 billion in cash, or \$42 per share of D&PL stock. In their press release, Monsanto noted that the combination would “. . . provide a complete platform of cutting-edge seed technologies to our global farmer customer base for years to come.”²

The current proposed acquisition is a re-attempt at a 1998 transaction under which Monsanto would have purchased D&PL. The combination would have given Monsanto up to 80 percent of the U.S. cotton seed market.³ The 1998 Monsanto/D&PL merger application was withdrawn in anticipation of antitrust concerns. After the transaction was terminated, DOJ officials testified that the Antitrust Division would have sought to block the merger because of its adverse affects in the cotton biotechnology market.⁴

The terms of the current agreement provide that Monsanto will pay D&PL \$600 million if regulatory approvals are not obtained.⁵ Monsanto has proposed to divest its Stoneville cotton seed business in order to gain antitrust approval. Monsanto originally divested Stoneville in 1999 as part of its prior attempt to acquire D&PL. The Stoneville business, which Monsanto re-acquired from Emergent Genetics, Inc. in 2005, accounts for about 12 percent of the national U.S. cotton seed market. However, in the South Central region of the U.S., Stoneville has a 22 percent market share.⁶

² “Monsanto Company to Acquire Delta and Pine Land Company for \$1.5 Billion in Cash,” Press Release dated August 15, 2006. Online, Available <http://www.monsanto.com/monsanto/layout/media/06/08-15-06.asp>.

³ William Lesser, “Intellectual Property Rights and Concentration in Agricultural Biotechnology,” *AgBioForum* 1(2), 1998, pp. 56-61.

⁴ See, e.g., *Statement of John M. Nannes, Acting Assistant Attorney General, Antitrust Division on Agricultural Market Concentration*, Before the Subcommittee on Agricultural, Rural Development and Related Agencies, Committee on Appropriations, United States Senate, May 17, 2001, p. 2. Online. Available <http://www.usdoj.gov/atr/public/testimony/8239.pdf>.

⁵ Jack Kaskey, “Monsanto to Buy Delta & Pine Land for \$1.5 Billion (Update5),” *Bloomberg.com*. August 15, 2006. Online. Available <http://www.bloomberg.com/apps/news?pid=20601087&sid=aKCHvPPz9uBo&refer=home>.

⁶ U.S. Department of Agriculture, Agricultural Marketing Service – Cotton Program, *Cotton Varieties Planted – 2006 Crop*, Memphis, Tennessee, August 2006, p. 3.

The Merger Could Result in a “Closed” Cotton Supply Chain System that Potentially Undermines Competition

Some background on technological developments in the agricultural biotechnology and seed industries helps put the potential competitive effects of the Monsanto/D&PL merger into context. The late 1990s witnessed a “coming of age” of agricultural biotechnology. This included the development of insect resistant and herbicide tolerant seed varieties in corn, soybeans, and cotton.

The foregoing developments stimulated a wave of M&A by biotechnology and agrochemical companies.⁷ For example, 27 biotechnology mergers and 14 seed company mergers were proposed between 1990 and 2000. Monsanto carried out 16 of these mergers and acquisitions--almost 40 percent of all industry M&A.⁸ Other firms, including Novartis, DuPont, Dow, Hoechst/Schering, and Zeneca and van der Have were also involved in M&A, but on a much smaller scale.⁹

Vertical integration into seed has been aggressively pursued by Monsanto and others. Through its proposed acquisition of D&PL, the company appears to be establishing a cotton “platform” for traits, germplasm, and seeds—much as it has done in corn and soybeans.¹⁰ Acquisition of seed companies provides a way for agricultural biotechnology firms to protect the current and future value of their biotechnology innovation.¹¹ One observer noted, for example, that “A new gene is worthless without a quality seed base to put it in and the infrastructure to deliver it.”¹² Another commentator observed of M&A activity in the late 1990s that, “Seed proved to be the delivery mechanism of choice for agrobiotechnology.”¹³

It is well known than vertical integration can produce a number of economic efficiencies. These include reducing transactions costs through the elimination of successive

⁷ Marvin L. Hayenga, “Structural Change in the Biotech Seed and Chemical Industrial Complex,” *AgBioForum* 1(2), 1998, pp. 43.

⁸ John L. King, Norbet L.W. Wilson, and Anwar Naseem, “A Tale of two Mergers: What We Can Learn from Agricultural Biotechnology Event Studies,” *AgBioForum* 5(1), 2002, pp. 14-19. Monsanto also carried out 30 significant R&D alliances over this period. There were 27 mergers from 1978-1980, another period of intense M&A activity. See Lesser, op. cit., p. 56.

⁹ Hayenga, op. cit., p. 43.

¹⁰ See e.g., Evren Ergin, “Equity Derivatives Research, Market Commentary/Strategy, DLP-Monsanto Antitrust/Merger Analysis,” Lehman Brothers, September 12, 2008.

¹¹ Hayenga, op. cit., p. 52.

¹² Lesser, op. cit., p. 59, quoting from Furman Seltz LLC investment report.

¹³ Nicholas Kalaitzandonakes, “Biotechnology and the Restructuring of the Agricultural Supply Chain,” *AgBioForum* 1(2), 1998, pp. 42. There have been a large number of patent suits in agricultural biotechnology. See, e.g., Lesser, op. cit., p.58.

monopolies (i.e., the double mark-up problem), securing greater control over production or eliminating information deficiencies, coordinating design or production between inputs and outputs, and eliminating the hold-up problem.¹⁴ At the same time, however, integration can enhance the ability and/or incentive to adversely affect market outcomes.

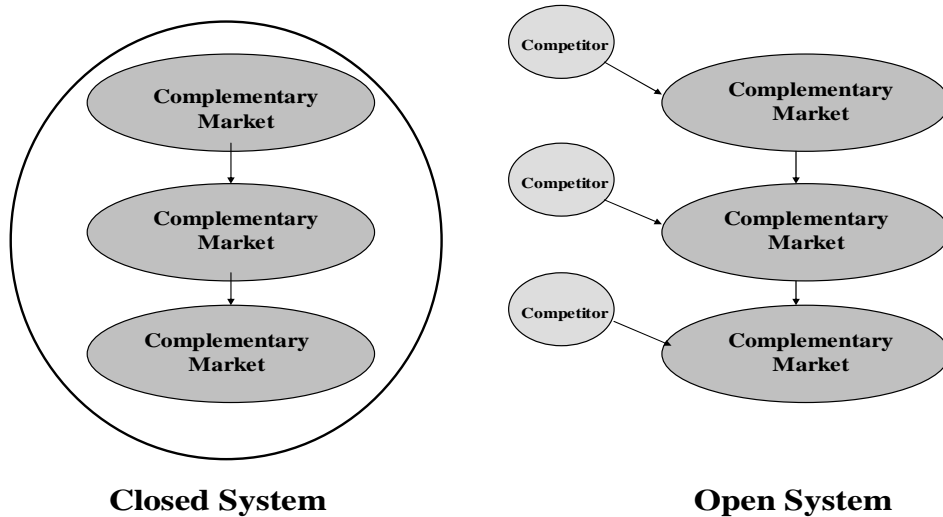
Anticompetitive effects of vertical integration can be exacerbated if integration (e.g., through merger) creates a “closed system” and strategic behavior by the system owner excludes rivals from access to one or more levels.¹⁵ Among other things, closed systems can be created or promoted through the use of intellectual property to maintain monopoly at one or more levels or to leverage monopoly to complementary levels in a system. “Open systems,” on the other hand, allow competition at one or more levels of the system, stimulating innovation, improved quality, and lower prices. The schematic in Figure 1 depicts the “closed” versus “open” system format.

Vertical integration in cotton encompasses activities from the development and commercialization of first generation, stacked (i.e., multiple traits), and second generation genetic traits, through the development of germplasm, to the finished, genetically modified seed. Competition at any of the levels of production could arguably be viewed by a merged Monsanto/D&PL as a threat to the creation of a closed system. For example, Monsanto has a powerful interest in protecting its “Roundup” brand of glyphosate herbicide from sales of competing herbicides. DuPont’s Optimum GAT likely poses such a competitive challenge since it will allow farmers to apply herbicides other than glyphosate (or in addition to glyphosate) to their crops.

¹⁴ For a discussion of efficiencies that arise from vertical mergers, see e.g., Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization* (4th edition), Addison Wesley, pp. 396-412. The model of successive monopolies (i.e., double-marginalization) is well-known to be restrictive in its assumptions and does not apply in the Monsanto/D&PL case. See, e.g., Michael H. Riordan and Steven C. Salop, “Evaluating Vertical Mergers: A Post-Chicago Approach,” *Antitrust Law Journal* 63, 1995, pp. 513-568.

¹⁵ Automobile aftermarkets are another good example of migration toward closed systems. Increasingly, standards and intellectual property rights have made it increasingly difficult for independent, third-party crash part and service providers to gain access to aftermarkets.

Figure 1
“Closed” Versus “Open” Supply Chain Systems



The development of closed systems is generally on the rise in the U.S. economy--for better or worse. Arguably, however, the phenomenon raises broader public policy concerns involving agricultural supply chains such as food and textile fibers. Large, closed supply chains raise broader public policy concerns such as consumer choice, supply system stability brought about by diversity of supply, and human health and safety. These concerns should therefore serve as an important backdrop for evaluating the competitive effects of a Monsanto/D&PL combination.

Relevant Markets and Market Concentration

The DOJ/FTC *Guidelines* provide standard guidance in defining relevant product and geographic markets for merger analysis.¹⁶ Section 1 of the *Guidelines* asks whether consumers would switch to competing products or products produced by sellers at different locations in response to a price increase by a hypothetical monopolist. In other words, would a small but significant (e.g., 5-10%) and nontransitory price increase over competitive levels by all firms in the proposed market be enough to induce consumers to switch? If so, then those products and locations should be included in the relevant product and geographic market, respectively. Economic analysis of relevant markets considers a number of factors in defining relevant markets, including: distinct consumer

¹⁶ Department of Justice/Federal Trade Commission, 1992 *Horizontal Merger Guidelines*. Online. Available <http://www.usdoj.gov/atr/public/guidelines/hmg.htm>.

characteristics, product characteristics, distinct product prices, and specialized sellers and unique production facilities.¹⁷

The Upstream Market for the R&D for, and Licensing of, Cotton Traits

One market affected by the proposed merger is the upstream product market is R&D for, and licensing, of cotton traits. Traits are licensed to seed companies such as D&PL and farmers, who sign a license agreement. The cotton traits currently being licensed are genes that have been introduced into cotton seed to control certain insects (e.g., bollworm) or impart resistance to herbicides (e.g., used to control weeds). Since traits control for different problems, it is possible that relevant upstream product market could be further defined for individual traits or even stacked traits (e.g., insect resistance *and* herbicide tolerance).¹⁸ The AAI has not attempted to further define relevant upstream product markets for specific cotton biotech traits because of limited information. But such analysis would likely not produce different results since Monsanto has roughly equal shares in individual and stacked traits.

In considering the arguments for narrower relevant upstream markets for different cotton traits, it is also important to ask whether the relevant market is limited *just* to cotton traits. Up to a certain point, for example, R&D in agricultural biotechnology is applicable to multiple crops. But the genes that control, for example, for insect resistance in cotton are different from those for corn or soybeans and developing commercially viable traits for a particular crop reportedly requires years of crop-specific R&D, testing, and regulatory approvals. This is apparent from the fact that traits developers have formed joint ventures specific for certain crops. In light of the foregoing, it appears that the relevant upstream market should be defined--at most--as R&D for, and licensing of, cotton traits. However, the AAI has not had access to information that would permit a more definitive conclusion in this regard.

The geographic market for cotton traits is most likely national in scope due to the need for regulatory approvals from the U.S. Department of Agriculture, the Environmental Protection Agency and/or the Food & Drug Administration.¹⁹

Monsanto has produced and marketed its first generation cotton traits “Bollgard” (insect resistance) and “Roundup Ready” (herbicide tolerance) since the mid-1990s.²⁰ Bayer

¹⁷ *Brown Shoe v. United States*, 370 U.S. 294 (1962).

¹⁸ Stacked traits have appeared on about 75 percent of cotton acres planted. Specific traits needed by growers are likely to be governed by local climate, insects, and weed populations. For example, Dow markets “Widestrike” insect protection (without a stacked herbicide tolerance trait) specifically for growers in New Mexico. See, e.g., <http://www.dowagro.com/phytogen/varieties/nm151799w.htm>.

¹⁹ Tatiana Serafin, “A Tough Row,” *Forbes*, November 14, 2005, pp. 195-196.

²⁰ The vast majority of herbicide-tolerant seed contains Monsanto’s “Roundup Ready” trait. “Roundup” is the brand name of Monsanto’s glyphosate herbicide and is the leading herbicide applied to cotton and other crops. While glyphosate is also nominally available from other manufacturers, including generics, Monsanto’s Roundup accounts for a dominant share of the glyphosate market.

produces and markets its “Liberty Link” cotton trait (herbicide tolerance), and Dow produces and markets its “widestrike” cotton trait (insect resistance). Monsanto introduced second generation cotton traits “Bollgard II” and “Roundup Ready Flex” in 2003 and 2006, respectively.²¹ Information available to the AAI indicates that Monsanto has market shares of over 95 percent for herbicide tolerance (“Roundup”), insect resistance (“Bollgard”), and stacked insect resistance/herbicide tolerance traits in cotton. These shares indicate extremely high levels of market concentration of at least 9,000 HHI. This market is, by *Guidelines* standards, very highly concentrated and therefore less conducive to competitive outcomes.

The Downstream Market for the Breeding, Production, and Marketing of Cotton Seed

Another market that is relevant to an antitrust inquiry of the Monsanto/D&PL merger is the breeding, production, and distribution of finished cotton seed. Such seed can contain single or stacked genetic traits and accounts for about 85 percent of all cotton seed acres planted in the U.S. It is possible that product markets could be further defined for specific cotton varieties. However, the AAI does not have access to information that would permit further market definition along these lines. But because D&PL is dominant in the downstream cotton seed market with a significant sales presence throughout the U.S., further narrowing the product market definition is unlikely to lead to any different conclusions.

The relevant geographic market for cotton seed is, at most, national in scope.²² Markets could be further defined to account for distinct demand for different cotton varieties that are suitable to the growing conditions of different regions of the U.S., including the South Central, Southeast, Southwest, and West.

There are few suppliers of cotton seed in the U.S. D&PL has a 51 percent share of the U.S. market with its “Deltapine” and “Paymaster” seed. But in the Southeast, D&PL’s share is reportedly as high as 86 percent.²³ A Monsanto subsidiary produces the “Stoneville” branded cotton seed, with a 12 percent share of the market. Bayer’s “Fibermax” seed has an approximately 27 percent share and their “AFD Seed” has about a 2 percent share for a Bayer total share of 29 percent. Dow’s “Phytogen” brand has a 2 percent share, and All-Tex has a 2 percent share.²⁴ Given these shares (assuming that

²¹ These traits currently have about a seven percent market penetration.

²² An international market for cotton is unlikely due to concerns over importation of pests and regulatory requirements. Some cotton seed has been imported into the U.S., but at least one case generated significant concerns about the importation of new pests. See, e.g., Harry Cline, “California Tries to Stop Australian Cotton seed Imports,” *Western Farm Press*, May 9, 2001. Online. Available http://westernfarmpress.com/news/farming_california_cotton_tries/.

²³ U.S. Department of Agriculture, op. cit., p. 3.

²⁴ U.S. Department of Agriculture, op. cit. p. 3.

Monsanto's Stoneville asset is divested, concentration in the downstream market is 3,191 HHI. This market is highly concentrated by the *Guidelines* standards and therefore less conducive to competitive outcomes.

The Proposed Merger Could Remove D&PL as an Actual Potential Competitor in R&D for, and Licensing of, Cotton Traits

D&PL currently licenses Monsanto's traits for use in about 90 percent of its cotton seed. Under these licenses, Monsanto receives a 70 percent share of the trait fee collected from farmers and D&PL receives 30 percent. However, D&PL appears to be attempting to wean its customers from Monsanto traits and develop its own presence in the market for cotton traits. For example, D&PL has been working with Switzerland-based Syngenta to introduce "VipCot" (insect resistance) in 2008. D&PL has also been working--through its DeltaMax joint venture with DuPont—to introduce "Optimum GAT" (herbicide tolerance) in 2010 and additional insect resistance traits and other traits for cotton.²⁵ Reportedly, these agreements would carry much more favorable fee sharing splits for D&PL.²⁶

In light of the foregoing activities, D&PL is likely an actual potential competitor in the market for R&D of, and licensing of, cotton traits. A merger with Monsanto could eliminate D&PL, thus enhancing Monsanto's already dominant role. Post merger, Monsanto/D&PL could have a greatly reduced incentive to continue any joint partnerships between D&PL and rival traits developers. This is because if such partnerships resulted in commercial technology, they could divert sales away from cotton seed containing Monsanto traits. Removing D&PL as an actual potential competitor, therefore, could eliminate or delay the introduction of more effective and/or less expensive competing cotton traits, to the detriment of seed companies, cotton farmers, and U.S. consumers of cotton-based products.

The Proposed Merger Could Enhance the Ability and Incentive of Monsanto/D&PL to Adversely Affect Prices and Output by Engaging in Strategic Exclusionary Behavior

Vertically integrating Monsanto's biotechnology assets with D&PL's cotton seed business could adversely affect competition and consumers in relevant markets for both cotton traits and cotton seed. The proposed merger changes the merged company's ability and incentive to adversely affect prices and output in three distinct ways. First, the proposed merger could strengthen Monsanto's pre-existing ability to exclude cotton seed rivals from access to its cotton traits.²⁷ For example, post-merger, Monsanto could raise

²⁵ DuPont and Syngenta also have a joint venture called Greenleaf Genetics.

²⁶ These splits are reportedly the reverse of what Monsanto currently imposes.

²⁷ In theory, this ability already exists but Monsanto's incentive to downstream rivals' access is limited by Stoneville's relatively small share.

the prices of cotton traits or employ more restrictive terms and conditions in new licensing agreements with rival seed companies such as Bayer and Dow. Such input foreclosure could put cotton seed competitors at a cost disadvantage to D&PL, in effect enhancing D&PL's market power in the cotton seed market.²⁸ Because Monsanto controls 95 percent or more of the extremely concentrated market (greater than 9,000 HHI) for cotton traits, cotton seed producers have few alternatives other than Monsanto from which to license cotton traits. Under these circumstances, post-merger input foreclosure could harm cotton farmers and U.S. consumers of cotton-based commodities through higher prices.

Second, the proposed merger could enhance the ability of the merged firm to frustrate access by cotton traits competitors to the cotton seed market.²⁹ Post-merger, for example, D&PL could refuse to license cotton traits from developers such as Syngenta and DuPont, instead purchasing cotton traits only from Monsanto. Such customer foreclosure could deny cotton traits competitors access to a customer base sufficient to remain viable by forcing them to operate below a minimum viable scale (thus exiting the market) or by raising their costs and reducing their ability to compete. Such customer foreclosure would, in effect, enhance Monsanto's market power in the cotton traits market. Because D&PL has a 50 percent market share of the highly concentrated (3,191 HHI) cotton seed market, upstream firms could turn to few other customers to license their cotton traits. Under these circumstances, post-merger customer foreclosure could harm cotton farmers and U.S. consumers of cotton-based commodities through higher prices.

Third, the proposed merger enhances the incentive of the company to engage in strategic behavior that potentially excludes rivals. Even with the divestiture of Stoneville, D&PL's 50 percent share creates a substantial base of cotton seed sales upon which to generate supra-normal revenues from higher cotton seed prices resulting from both foreclosure. These additional revenues could very likely be greater than any revenues lost as a result of foreclosing competitors. Potential mechanisms for input and customer foreclosure in a post-merger world should be given careful consideration, particularly when the merger potentially strengthens Monsanto/D&PL's incentives to do so. For example, Monsanto has demonstrated the ability to control prices for cotton traits. Reportedly, prices for its "Roundup Ready" reportedly increased by 230 percent (by 46 percent per year) between 2002 and 2006. It is also important to consider Monsanto's trait licensing and pricing practices for cotton and other crops with regard to seed companies. These practices, it is alleged: (1) go beyond intellectual property protection by restricting how Monsanto traits

²⁸ Theories of vertical foreclosure have been rigorously explored in the economic literature. See, e.g., Michael A. Salinger, "Vertical Mergers and Market Foreclosure," *Quarterly Journal of Economics* 103(2), 1988, pp. 345-356, Steve C. Salop and David T. Scheffman, "Cost-Raising Strategies," *Journal of Industrial Economics* 36(1), 1987, pp. 19-34, and Janusz A. Ordover, Garth Saloner, and Steve C. Salop, "Equilibrium Vertical Foreclosure," *American Economic Review* 80(1), 1990, pp. 127-142.

²⁹ In theory, this ability already exists due to Monsanto's ownership of the Stoneville cotton seed business, but Monsanto's incentive to exclude upstream rivals' access is limited by Stoneville's relatively small share.

can be used with competing intellectual property and (2) punish licensees if they sell non-Monsanto traits or other competing products.³⁰

Finally, foreclosure could also raise barriers to entry in affected markets. With the threat of being foreclosed from input and output markets, rivals could lose much of their incentive to engage in the R&D necessary to produce commercially viable technology. Moreover, if the Monsanto/D&PL combination results in a “closed system,” entry may be viable only if rivals develop *competing* systems. This could require entry at more than one level (e.g., cotton traits and cotton seed) by new firms or backward or forward integration by incumbent firms. Higher barriers to entry resulting from foreclosure could stifle innovation, eliminating or delaying of the introduction of potentially higher quality or lower cost cotton traits or cotton seed.

The Proposed Merger Potentially Reduces Choices Available to Cotton Farmers

Before the advent of cotton biotechnology, cotton farmers planted conventional varieties of cotton. While genetically modified cotton has gained in popularity since its introduction in the late 1990s, there is still demand for conventional cotton varieties. For example, genetically modified cotton accounts for about 83 percent of all cotton acres planted in the U.S.³¹ However, in some cotton regions such as Texas and California, the penetration of genetically modified cotton is much lower because conventional varieties may still be preferred due to climate and local ecology.

Given Monsanto’s dominance in cotton traits and its apparent goal of creating an integrated platform for genetically modified cotton, the merged company could have little or no incentive to continue D&PL’s production of conventional cotton seed. A potential phase-out of conventional D&PL cotton varieties after the merger could have adverse effects on farmers who still demand non-genetically modified varieties. This could reduce choice to farmers and potentially raise their costs, leading to higher prices to U.S. consumers of cotton-based products.³²

³⁰ For a summary of pending legal proceedings, see, e.g., Monsanto Company, *Form 10-K*. 2005. Online. Available http://www.monsanto.com/monsanto/content/media/pubs/2005/MON_2005_10-K.pdf. More detail on specific allegations regarding Monsanto’s conduct involving cotton and corn is available in, e.g., *American Seed Co., Inc. v. Monsanto*, Case 1:05-cv-00535-SLR, U.S. District Court for the District of Delaware, July 26, 2005, *Monsanto Company vs. Syngenta Seeds, Inc.*, Second Amended Complaint, Civil Action No. 04-305-SLR (consol.), U.S. District Court for the District of Delaware, August 12, 2005; and *E. I. DuPont de Nemours and Company vs. Monsanto Company*, Amended Complaint and Jury Demand, Civil Action No. 4:00-952-23, U.S. District Court for the District of South Carolina, May 24, 2001. These cases are provided for illustrative purposes—some are still pending and therefore outcomes are undecided.

³¹ U.S. Department of Agriculture, Economic Research Service, *Adoption of Genetically Engineered Crops in the U.S.: Cotton Varieties*. Online. Available <http://www.ers.usda.gov/Data/BiotechCrops/ExtentofAdoptionTable2.htm>.

³² For a discussion of the pros and cons of conventional versus genetically modified cotton, see e.g., Dave Caldwell, “A Cotton Conundrum,” *Perspectives on Line*, North Carolina State University, Winter 2002. Online. Available <http://www.cals.ncsu.edu/agcomm/magazine/winter02/cotton.htm>.

Entry and Merger-Related Efficiencies Should be Carefully Scrutinized to Determine if They Could Counteract Potential Competitive Harm from the Proposed Merger

Monsanto has revealed publicly that it expects “modest” cost synergies from the proposed merger by eliminating duplicative company costs, corporate overhead, trait-fee sharing, and reducing litigation fees.³³ Aside from any direct cost savings, vertical mergers have long been recognized as sources of the potential economic efficiencies discussed in an earlier section. The AAI suggests that any economic efficiencies claimed to flow from the proposed merger should be carefully scrutinized, for a number of reasons.

First, the proposed merger is unlikely to generate significant efficiencies that have not already been realized. For example, Monsanto’s has long-pursued joint venture activities that coordinate the development of cotton traits, germplasm, and cotton seed (e.g., with D&PL). As such, it is difficult to see how additional, significant economies of coordination could be exploited. Moreover, Monsanto is a sophisticated licensor of cotton biotechnology, reducing the probability of contractual inefficiencies. Second, any efficiencies that could flow from the proposed merger would have to outweigh the potential for competitive harm created by the proposed merger.

Entry is also unlikely to temper the potential competitive problems raised by a Monsanto/D&PL combination. As noted earlier, innovation and successful commercialization of cotton traits requires long lead times, large capital expenditures, and compliance with significant regulatory requirements. Entry into downstream cotton seed markets requires acquiring or developing cotton germplasm to produce multiple cotton varieties. The role of brand name loyalty and access to distribution channels could also make entry more difficult.

There are few good examples of entry into cotton seed markets. One possibility is Bayer’s “Fibermax” cotton, which was introduced in 1998 and currently has a 27 percent brand share of the U.S. cotton seed market.³⁴ But this share is not representative of all cotton growing regions. For example, Fibermax is a lower value cotton planted primarily in West Texas where it has a 55 percent market share. But in the Southeast and South Central regions, Fibermax has shares of 3 percent or less and in the West, its share is around 8 percent.³⁵ It appears, therefore, that Fibermax serves a niche market and is not a particularly good example of widespread market penetration.

³³ Monsanto, “Delta and Pine Land Acquisition: Investor Conference Call,” August 15, 2006. Online. Available <http://www.monsanto.com/monsanto/content/investor/financial/presentations/2006/08-15-06.pdf>.

³⁴ See, e.g., “Brand Continues to Gain Momentum Since 1998 Seed Introduction,” *SeedQuest*, October 9, 2006. Online. Available <http://www.seedquest.com/News/releases/2006/october/17150.htm>.

³⁵ U.S. Department of Agriculture, Agricultural Marketing Service, op. cit. p. 3.

Monsanto's Proposed Fixes for the Potential Competitive Problems Created by the Merger are Likely to be Inadequate

Monsanto has agreed to an up-front divestiture of its Stoneville cottonseed asset in order to secure merger approval. The company has also agreed to continue licensing its cotton traits, including to the owners of a divested Stoneville. While the preceding analysis assumes that Stoneville is divested, the divestiture raises a number of important questions. First, post-divestiture, Stoneville may not be an effective competitor. Information available to the AAI indicates that Stoneville's management and sales staff were either eliminated or absorbed into Monsanto after it was acquired. Given such changes, it is unclear exactly *what* will be spun-off, if it will be a viable competitor in the cotton seed market, or whether it will result in the quality of competition necessary to promote competitive outcomes. It could therefore be imprudent to assume that divestiture of Stoneville after its integration into Monsanto is equivalent to the acquisition never having occurred in the first place.

Second, divestiture of Stoneville does nothing to remedy the vertical potential competitive concerns raised by the proposed merger. The divestiture of Stoneville simply trades Monsanto's 12 percent share in the cotton seed market for D&PL's hefty 50 percent share. An antitrust review must still deal with the merged company's incentive to foreclose competitors created by D&PL's high market share. Stoneville cannot, therefore, do "double duty" in addressing both the horizontal and vertical problems raised by the proposed transaction. Divestiture of D&PL brands or product lines would have to be evaluated in order to reduce or eliminate the enhanced ability and incentive of the merged company to adversely affect prices and output through foreclosure.

Third, divestiture of Stoneville does not address the loss of D&PL as an actual potential competitor in the cotton traits market because Stoneville is largely a cotton seed company. A separate set of remedies that restore competition in the upstream cotton traits market could be necessary to deal with this potentially anticompetitive aspect of the proposed merger. Fourth, Monsanto's commitment to continue licensing its cotton traits is likely to be an ineffective fix. Such a commitment says nothing about the prices or terms under which Monsanto will license its traits under a number of scenarios, including: (1) when the terms of current licensing agreements expire and new agreements must be drawn up for existing traits and (2) for new licensing agreements for new traits that may be developed by Monsanto.

Moreover, a behavioral fix for a potentially significant competitive problem could require costly, ongoing monitoring and compliance. Structural remedies do not impose these requirements. The agencies have imposed structural remedies in vertical merger cases to address foreclosure concerns.³⁶ And both the DOJ and FTC have set forth clear

³⁶ See, e.g., *United States v. Enova Corporation, Complaint*, D. C. Cir., March 9, 1998. Online. Available <http://www.usdoj.gov/atr/cases/f1700/1790.htm> and *Final Judgment*, *United States v. Enova Corporation*, D. C. Cir., March 9, 1998. Online, Available <http://www.usdoj.gov/atr/cases/f5100/5114.htm>.

guidelines on merger remedies.³⁷ In those guidelines, they address the requirements of effective remedy and state a clear preference for one-time, permanent structural fixes such as divestiture. The DOJ states that conduct-based remedies are appropriate only under the following limited circumstances:

“ . . .for the prospect of potentially attainable efficiencies to justify accepting a pure conduct remedy, the efficiencies in question need to be cognizable rather than merely asserted. Moreover, they must be unattainable (at reasonable cost) if there is a structural divestiture.”³⁸

Such circumstances appear not to be present in the Monsanto/D&PL case.

Conclusion

Based on the information available to us, the AAI believes that the proposed merger of Monsanto/D&PL raises a number of potentially troubling competitive issues, raising the possibility that the merger may tend substantially to lessen competition under Section 7 of the Clayton Act, to the detriment of the merged firm’s rivals (e.g., cotton traits developers and cotton seed companies), cotton farmers, and U.S. consumers of cotton-based commodities.

³⁷ Federal Trade Commission, Bureau of Competition, *A Study of the Commission’s Divestiture Process*. Washington, D.C., 1999. Online. Available <http://www.ftc.gov/os/1999/08/divestiture.pdf>. Accessed April 5, 2005 (“*Divestiture Study*”). See also U.S. Department of Justice, Antitrust Division, *Antitrust Division Policy Guide to Merger Remedies*, Washington, D.C., October 2004, pp. 7-8. Online. Available <http://www.usdoj.gov/atr/public/guidelines/205108.htm#3a>. Accessed April 10, 2005 (“*Policy Guide to Merger Remedies*”).

³⁸ U.S. DOJ, *Policy Guide to Merger Remedies*, p. 21.