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# ***Staff Paper***

## **Status of Agricultural Market Consolidation and Concentration**

**Testimony at Michigan Senate Agricultural  
Preservation Task Force Hearing**

**Kellie Curry Raper**  
raperk@msu.edu

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Department of Agricultural Economics  
MICHIGAN STATE UNIVERSITY  
East Lansing, Michigan 48824

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## **Status of Agricultural Market Consolidation and Concentration**

**Dr. Kellie Curry Raper**

**Michigan State University**

**Department of Agricultural Economics**

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**Abstract:** Today is a time of dynamic structural change in the agri-food system that brings new challenges to producers. This change is not unique to any particular production sector within the system, nor is it restricted to one level within the agri-food marketing chain. This testimony describes the current status of concentration and consolidation in agri-food markets. In addition, it presents discussion regarding the driving forces behind this structural change, as well a brief discussion of implications for the future.

Today is a time of dynamic structural change in the agri-food system that brings new challenges to producers. This change is not unique to any particular production sector within the system, nor is it restricted to one level within the agri-food marketing chain. We have seen increasing consolidation via horizontal mergers of firms that perform the same functions in the agri-food system, in addition to a rapid movement toward solidifying relationships between firms who operate at different value-adding steps along the supply chain, i.e. production, processing, and distribution. Further, 1998 brought a steady voluntary exodus from production agriculture as many farmers anticipated persistent low prices, continuing the trend toward fewer but larger farms (Drabenstott).

One measure often used to look at structural change is the four-firm concentration ratio ( $CR_4$ ), which reflects the share of the market controlled by the four largest firms in that industry. A brief review shows that market share of the top four firms has increased over time in many markets important to Michigan agriculture. USDA's Grain Inspection, Packers and Stockyards Administration (GIPSA)

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tracks four firm concentration ratios for the meat packing industry. According to GIPSA, the  $CR_4$  for steer and heifer slaughter increased from 36 in 1980 to 81 in 1998. Over that same time period, the  $CR_4$  in hog slaughter increased from 34 to 56 and from 56 to 68 for sheep and lamb slaughter. GIPSA also obtains special procurement data from the top 15 steer and heifer slaughter firms regarding livestock purchased through contracts, or marketing agreements with formula pricing, as well as data on the number of livestock that are packer owned and/or fed. Since 1988, that number has remained relatively steady. In 1997, the top 15 firms obtained 18.6% of steers and heifers for slaughter through such means.

In the crop sector, concentration is relatively high in flour milling ( $CR_4=62$ ), dry corn milling ( $CR_4=57$ ), wet corn milling ( $CR_4=74$ ), soybean crushing ( $CR_4=80$ ), and ethanol production ( $CR_4=67$ ). Additionally, multiple elevator companies control 24% of the grain arriving at grain elevators and 59% of the port facilities for grain export. With Cargill's agreement to purchase Continental Grain's grain operations, Cargill alone will handle 10% to 13% of all U.S. grain moving to market and 35% of U.S. grain exports. The question of great interest in this case is whether the acquisition leaves some farmers without competitive buyers for their product. On this issue, Cargill reports that there are approximately 10 of 306 locations where Cargill and Continental Grain facilities overlap (see [www.cargill.com](http://www.cargill.com)), arguing that the impact on farmer's choices of whom to sell to will be minimal.

One driving force behind this structural change is low agricultural prices. Low agricultural prices lead to consolidation as firms seek to survive in low-margin businesses by becoming larger to increase efficiency and lower cost structures. Continental Grain's sale of grain operations to Cargill was partially motivated by this force. It was also motivated by the changing nature of the grain market. Continental Grain had remained focused on commodity grain merchandising, while Cargill had expanded further into the processing channel for grains. The combination of low grain prices and rapid adoption of genetically modified organisms (GMO's) in the grain market (e.g. high lysine corn, high-oil corn, low saturated fat

soybeans) led Continental Grain to the decision that its long-term livelihood was elsewhere in the food system and that Cargill was better suited compete in the market as grain is transformed from a commodity to specific grain products. Low prices can also lead to tighter supply chains. As firms get larger, there is the need to operate at capacity and continue taking advantage of scale economies. A clear example of this can be seen in the pork industry. As concentration in pork packers and the scale of slaughter facilities have increased, we have also seen a steady climb in the percentage of slaughter hogs purchased by contract. It is estimated that nearly half of all slaughter hogs are now sold through some form of marketing contract (USDA).

Complex consumer preferences and rapidly developing biotechnology also drive vertical or “supply chain” consolidation where firms who perform different functions along the marketing chain seek tighter alliances with each other. Such alliances may be motivated by the desire for access to a particular market, the need to preserve intellectual property rights, or the need to control the environment in which inputs are produced. The need for product “traceability” has increased as consumers demand higher food safety and food quality standards. For example, a firm that wishes to merchandise organic meat must be able to trace the product back to its production source to verify the environment in which it is grown. This may be accomplished through third party certification of the environment or may require direct monitoring or ownership of the production facility. Either method implies strengthening the relationship along the supply chain to get the final product to market and may imply that “fewer players” are more easily accommodated. In the case of biotechnology, we have seen a rapid alignment of major players at various stages of the marketing chain, as firms scramble to be connected to a “life sciences complex” for producing and marketing GMO’s. Recent acquisitions or joint ventures in agriculture reflect this developing alignment. The most recent example is DuPont’s purchase of Pioneer/Hi-Bred International, Inc. Pioneer was the last remaining independent seed company of significant size and the

leading supplier of agricultural genetics. Further evidence is Monsanto's purchase of DeKalb Genetics Corp. and of Cargill's international seed operations. This follows a trend of mergers and exits in the agricultural chemical industry as developments in crop genetics and biotechnology have put downward pressure on margins for the industry (@Agriculture Online). Major agricultural chemical firms have begun to align themselves with seed companies in efforts to assure their place in the supply chain for the biotechnology revolution.

What does the increase in consolidation and strategic alliances imply for the future of agriculture? First, our agri-food system is not confined to the boundaries of the U.S. Thus, some of the concentration measures mentioned before may not accurately reflect competition in the marketplace. For example, Monsanto and DuPont not only compete with each other, but also with other non-U.S. based firms such as Novartis. Globalization also means that events in other regions of the world can significantly impact our producers. The Asian financial crisis and its impact on U.S. agricultural demand and prices is only one example. Second, consolidation can lead to more cost-efficient production and stronger marketing channels, implying that larger U.S. firms may be better able to compete in world markets, thus securing better markets for U.S. farmers (Drabenstott). However, there are certain public policy issues that consolidation brings to the forefront. Certainly, consolidation has negative impacts when it places a disproportionate amount of economic power in the hands of a few firms who then abuse that power. It may also lead to a decline in rural communities as larger farms mean fewer farm families, thus changing the traditional relationship between agriculture and local communities.

The greatest challenge for producers is to find mechanisms for adapting to this evolving structure of agriculture. To date, those mechanisms have included such tools as organizing into cooperatives to reach further into processing and marketing, working in alliances to develop niche markets such as

organic or premium product markets, and fostering closer and longer term relationships with players in the supply chain to encourage feedback on product quality, and entering into contractual agreements to assure markets for their production. Such mechanisms will be crucial to their survival in production agriculture as supply chains tighten, as the goods that they produce become “products” rather than “commodities”, and as they search for their place in the evolution.

## REFERENCES

Drabenstott, Mark. "Consolidation in U.S. Agriculture: The New Rural Landscape and Public Policy."

Federal Reserve Bank of Kansas City, *Economic Review*, First Quarter 1999, p.63-71.

Feedstuffs.

Grain Inspection, Packers and Stockyards Administration, USDA. 1998 Annual Report.

[www.usda.gov/gipsa](http://www.usda.gov/gipsa)

Grain & Milling Annual.

Lamb, Russell L. and Michelle Beshear. "From the Plains to the Plate: Can the Beef Industry Regain Market Share?" Federal Reserve Bank of Kansas City, *Economic Review*, Fourth Quarter 1998, p. 49-66.

Lawrence, John, Glenn Grimes, and Marvin Hayenga. "Production and Marketing Characteristics of U.S. Pork Producers, 1997-1998." Staff Paper No. 311, December 1998. Economics Department, Iowa State University.

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