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The supplier industry in transition—The new geography of auto production

by Thomas H. Klier, senior economist, and James M. Rubenstein, professor, Miami University of Ohio

On April 18 and 19, 2006, the Chicago Fed held a conference at its Detroit Branch to examine the ongoing structural changes in the U.S. auto industry. As suppliers play an increasingly central role in auto production, it has become crucial for carmakers to have a strong relationship with their supply base.

Materials presented at the conference are available at www.chicagofed.org/news_and_conferences/conferences_and_events/2006_auto.cfm.

Over the past few decades, evolving carmaker–supplier relations have resulted in regional and international shifts in the location of production. Conference participants discussed recent trends in the relations between carmakers and their supply base, as well as prospects for the industry's continued concentration in the Midwest. This *Chicago Fed Letter* summarizes the major themes of the conference presentations and discussion.

Setting the stage

In his opening address, Michael H. Moskow, president and CEO of the Federal Reserve Bank of Chicago, noted that the auto industry has been making front page news for some time as a confluence of structural and cyclical factors has created a "perfect storm" for many supplier companies in this industry. Such factors include the rising cost of inputs, the shrinking market share of the domestic auto manufacturers, and heightened import competition.

Auto supplier employment is about three and a half times as large as auto assembly employment, and much auto production and related parts production takes place in the industry's core states of Michigan, Indiana, and Ohio, as well as the Canadian province of Ontario. Hence, this industry is of particular importance to the Midwest economy. Uncertainty about the auto industry's future is foremost on the minds of many in the Midwest. Michigan alone—the state by far most concentrated in this industry—has lost over 22% of its auto industry jobs since 2001. Not surprisingly, its unemployment rate has ranked among the highest in the country since then.

Moskow set out a number of questions for the conference to address. He asked if there were any indications of a turnaround for the Big Three assembly companies. While the Big Three and many suppliers are affected by legacy costs and global competitive pressures, the industry is notorious for quick reversals of fortune and changes in its firms' relative positions. How important are the Big Three market share losses with respect to the Midwest's auto parts industry? For example, can Midwest auto parts companies help the Big Three rebuild and recover? If not, can they adapt to new customers and markets, and if so, are they likely to move or stay in the Midwest? How are auto parts companies restructuring to improve their prospects? In recent years, Midwest industries, such as steel and machinery, have experienced significant restructurings. How might the automotive parts industry change, and what might it look like afterward? Finally, what role will management–labor relations and

working conditions play in a reconfigured auto parts industry?

The conference was organized around two major topical areas: the importance of carmaker–supplier relationships and the industry's changing geography.

Carmaker–supplier relations and networks

Neil De Koker, president of the Original Equipment Suppliers Association, an organization with nearly 400 member companies, said that suppliers have been taking on more responsibility in terms of value added as well as innovation and research and development (R&D). Suppliers now provide two-thirds of the value added in the production of a car. De Koker presented an industry in transition. He suggested 35% of suppliers are candidates for restructuring and another 35% for consolidation. De Koker also pointed to the traditional cost-based focus in carmaker–supplier relationships as not being conducive to harnessing opportunities for both suppliers and carmakers. While the domestic carmakers continue to be under tremendous pressure to look for immediate cost savings, De Koker suggested they need to move to a relationship model that emphasizes trust.

Martin Baily, senior advisor at McKinsey & Co., presented data on productivity growth in the auto sector between 1987 and 2002.[1] His analysis demonstrated that the largest single factor in explaining productivity growth in this industry was attributable to process improvements at assembly plants, notably the adoption of lean manufacturing practices. He said it took the domestic carmakers between ten and 15 years to match the foreign producers' efficiency.[2]

Baily suggested that the auto supplier industry in the United States is currently shaped by two major trends. First, auto suppliers are in upheaval, with over a dozen of the 150 largest companies either currently in bankruptcy or carrying below-investment-grade debt ratings. This is driving the restructurings of supplier companies. Second, reflecting changing market shares among carmakers, European and Japanese companies dominate the list of large suppliers growing in North America. Baily pointed to significant differences between domestic and foreign carmakers in the way they structure their relations with suppliers. As one example of a more cooperative approach employed by foreign producers, he noted their common practice of sending their engineers to a supplier's facility to assess and, if needed, improve production operations.

Dennis Cuneo, senior vice president of Toyota Motor Manufacturing North America, discussed Toyota's approach to supplier relationships. According to Cuneo, competition is taking place between supply chains. Designing, engineering, and manufacturing an automobile is a very complex undertaking that involves a large number of players. That is why the auto industry is built on relationships. Cuneo explained that Toyota has established a supplier relationship department to improve two-way communication between Toyota and its suppliers. Toyota views its suppliers as an extension of the assembly system. A more collaborative approach to working with suppliers can make a difference when already strained carmaker–supplier relationships are buffeted by rising costs of inputs, environmental concerns, consumer demands, and price pressures originating primarily in China.

Tony Brown, senior vice president, global purchasing, at Ford Motor Co., talked about Ford's recently implemented "Aligned Business Framework," in which the company has begun to build a core network of strategic, long-term suppliers. The program aims to reduce the number of Ford suppliers and build more collaborative relationships with those that remain. To date, Ford has named 32 companies to be part of this group of strategic suppliers.

Bo Andersson, vice president, global purchasing and supply chain, at General Motors Corp. (GM), illustrated in some detail the complexity of GM's global purchasing operations. GM does business with 3,200 suppliers worldwide, procuring on average 160,000 parts a day, resulting in a $85 billion global annual parts budget. The overarching goal of GM's purchasing operations is to buy the best quality parts at the best landed cost globally. However, the overwhelming majority of parts GM consumes in North America are bought within North America. In order to stay competitive, the company has set a goal of reducing its cost base by $7 billion in 2007. Andersson gave two examples of ongoing cost-reduction efforts. By reducing the number of suppliers of a molded engine rubber mount from two to one, the production of that part moved from Indiana to Mexico, resulting in a 13% cost savings. The supplier of a door hinge in GM's new full-size truck line reduced production costs significantly by simplifying the hinge design. That allowed the production process to change from a welded to a stamped hinge. In this case, the supplier, located in Ontario, kept the contract for the new model.

Keith Wandell, vice president and president, automotive group, at Johnson Controls, provided examples of innovation across Johnson Controls' automotive business lines of seating, batteries, and interiors. Johnson Controls, headquartered in Milwaukee, is one of the large tier 1 interior suppliers in North America (tier 1 suppliers interact directly with carmakers). The company has been very successful in growing its business with foreign assemblers. Wandell emphasized that innovation is key to his company's continued success and echoed Cuneo's point about the importance of collaboration.

Illustrating the differences that exist today in supplier relations within the auto sector, Jeff Jeffery, president and CEO of IRMCO, provided the perspective of a small lower-tier supplier company. IRMCO produces advanced lubricant technologies to address specific frictional forces experienced when working with higher strength steel. His company's business model focuses on R&D and technological improvements. Jeffery said that 90% of IRMCO's growth in domestic business has been with foreign producers operating in the U.S. In contrast, he said he currently has no approval for his company's product from either domestic carmakers or their suppliers. In doing

business with tier 1 suppliers, which in turn supply foreign carmakers operating in the U.S., such as Honda or Toyota, Jeffery has found these carmakers to be good communicators, as well as open and flexible regarding new ideas.

Regional shifts and prospects for the Midwest auto industry

Thomas Klier, senior economist at the Federal Reserve Bank of Chicago, and James Rubenstein, professor at Miami University of Ohio, documented the movement of the auto industry to the South since 1980. The openings of several new assembly plants in the deep South during the 1990s, in particular, have put pressure on the Midwest-based supply base. Today's supply chains are characterized by a large share of an assembly plant's suppliers located within a day's drive. That essentially puts all of the deep South out of reach for Midwest-based suppliers. The challenges for the Midwest, then, are driven by the loss of market share by the domestic automakers and the subsequent rise of production facilities located in the South. According to Klier and Rubenstein, this development represents a structural change to the industry that is being felt most severely in Michigan, the most auto-intensive state in the country.

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Dennis DesRosiers, president of DesRosiers Automotive Consultants, discussed the globalization of the auto industry. In the wake of foreign assemblers setting up plants in North America, a large number of foreign suppliers have followed. DesRosiers called this trend "global localization" and said that as a result, the share of parts sourced from U.S.-owned and U.S.-located suppliers within the U.S. market for auto parts fell from 68% in 1997 to 41% in 2005. During the same time, the share of parts sourced from overseas-owned but U.S.-located parts suppliers rose from 12% to 30%. DesRosiers also addressed the potential threat of auto parts being outsourced to China. He showed that while imports in car parts from China to the U.S. have been growing fast, they still account for a very small share of total parts imports.

Sean McAlinden, vice president of research and chief economist at the Center for Automotive Research, compared the relative strengths of the midwestern and southern production locations. Much has been written about the noticeably lower levels of unionization in the South. For example, the unionization rate in Alabama is 5.2% compared with Michigan's 16.6%. Lower manufacturing wages, energy, and land costs make the South attractive for new business locations as well. In addition, the population center of the U.S. keeps moving southward and with it the share of U.S. vehicle sales. Finally, many of the southern states have offered sizable incentives to attract new auto assembly plants. On the other hand, to a large extent, these incentives are designed to make up for the lack of industrial infrastructure. The Midwest's density of supplier plants, its supply of skilled workers, and its supporting services are unrivaled. Finally, McAlinden cited anecdotal evidence of tight labor markets in the South for manufacturing, especially skilled trades, engineering, and management.

Tim Leuliette, CEO of Metaldyne Corp., argued that twenty-first century globalization has created a global supply chain. As a result, the industry needs to follow a model of collaboration and cooperation in order to be successful. He illustrated his point with an example of an innovative labor agreement between Metaldyne, DaimlerChrysler, and the United Auto Workers (UAW). In 2001 DaimlerChrysler decided to sell one of its parts plants, located in New Castle, Indiana. Metaldyne was interested in the plant but knew it had to make some changes to make the plant competitive. The innovative agreement that was subsequently struck between the UAW and Metaldyne saw a substantial reduction in pay and benefits for workers, as well as the introduction of best-practice work rules. The adjustment was not easy. Yet, as a result of the new agreement, the plant is profitable today. It has grown the business for its product, expanding its customer base to include Ford and Toyota. At the same time, it remains unionized and located in the Midwest. Leuliette pointed to collaborative relationships like this as the future of the industry.

Bob King, vice president and director of Competitive Shop/Independents, Parts and Suppliers Department, at the United Auto Workers, addressed the changing labor relations in the auto supplier industry. He stated the union's willingness to adopt flexible work rules and use binding arbitration to sort out disputes. King pointed out that it was very clear to the UAW leadership that it has to change its strategies to adapt to today's global realities. In that context, he endorsed the cooperation with Metaldyne at the

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former Chrysler parts plant in Indiana. He also pointed to Johnson Controls and its U.S.-based production of batteries as an example of successful cooperation between the UAW and management. However, King emphasized that rising U.S. health care costs, while hampering the competitiveness of individual companies, cannot be adequately addressed in company- or even industry-specific negotiations and called for a broad-based reform of U.S. health care policy.

Stephen Cooney, industry specialist at the Library of Congress's Congressional Research Service, focused on legacy cost issues and compared the current situation in the auto industry to what played out in the steel industry just a few years ago. Employment cutbacks in steel had been more severe than those currently being experienced by the auto sector. The cutbacks exacerbated the steel industry's legacy cost problem. Subsequently, in 2002 and 2003, the steel industry shed its pension and health care liabilities by way of significant corporate restructurings. He attributed the absence of a political solution for the steel industry's woes to the lack of a unified position of the steel industry on how to deal with its legacy cost issues. Cooney cautioned that Congress is currently under no obligation to cover any shortfall by the Pension Benefit Guarantee Corporation, and he noted that the auto suppliers are currently far less visible to Congress than the automakers.

Conclusion

In his keynote address to the conference, Wilbur L. Ross, chairman and CEO of W. L. Ross & Co., said that the U.S. auto supplier industry is in a shambles. Almost half of the 50 largest North American companies lost money last year, at a time when demand for cars and light trucks was near its all-time record. Among the factors that are creating a perfect storm for this industry, Ross cited the continuing loss of market share by the domestic producers. He said he expected the Asian producers to continue to gain market share in the U.S., which will affect domestic suppliers more severely as their business tends to be more strongly affiliated with domestic producers.

Ross pointed out that in an environment of shrinking unit volume, it is extremely difficult for a manufacturing business to reduce unit costs. Yet supplier contracts usually call for annual price reductions, even in light of volatile raw material and energy costs, as well as rising health care and pension costs. At the same time, carmakers have learned from the recent supplier bankruptcies that they are extremely dependent upon the continued solvency of their suppliers. In that context, he suggested the need for a new framework for carmaker–supplier relationships.

Despite this bleak outlook, Ross has invested a considerable amount of money in the auto supplier industry. The basis for his optimism, he said, is the fact that the auto supplier industry is very large, around $200 billion domestically and close to $500 billion globally. Furthermore, he sees opportunities for consolidation as the global industry is currently highly fragmented. And gradual movement toward global platforms among carmakers should provide opportunities for large, well-capitalized suppliers that can deliver consistent design and quality globally.

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[1] See McKinsey & Co., McKinsey Global Institute, 2005, *Increasing Global Competition and Labor Productivity: Lessons from the U.S. Automotive Industry*, report, New York, November.

[2] For more details on this trend of domestic carmakers catching up with their foreign counterparts' production efficiency, see Harbour Consulting, 2006, *The Harbour Report North America 2006*, report, Troy, MI.