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Is Midwest manufacturing at a crossroads?

by William A. Testa, vice president and director of regional programs, and Thomas Klier, senior economist

Is the recent weak performance of manufacturing transitory or does it reflect a sustained structural change? A recent Chicago Fed conference assessed the challenges facing U.S. manufacturing and how the sector is adapting to an increasingly competitive global marketplace.

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Is Midwest manufacturing at a "crossroads," or merely experiencing a "bump in the road?" On September 30, 2003, over 100 leaders from the public and private sectors attended the first in a series of conferences, part of the Federal Reserve Bank of Chicago's Midwest Manufacturing Project, on the current landscape of manufacturing in the Midwest. The conference addressed whether the recent weakness in manufacturing is attributable to transitory factors, such as an investment overhang from the late 1990s, worldwide economic weakness, and a high-valued dollar, or is the result of a structural change, whereby domestic production activities will accelerate their migration overseas.

In his welcoming remarks, Chicago Fed President Michael H. Moskow explained that by one measure, personal income generated by manufacturing, the Midwest is 44% more dependent on manufacturing than the rest of the nation. Thus, the recent weak performance of manufacturing is a matter of some concern for the region. National manufacturing employment ended each of the past five years lower than the previous year, and has declined for 39 consecutive months.

It is important, said Moskow, to answer this question: Is this recent performance transitory, or does it reflect a more pronounced and sustained structural change? The 2001 recession and its aftermath have obfuscated the answers, and so have multiple structural changes in business organization and process technologies. Among the many structural changes, technological advances in inventory control have seemingly dampened the historical production volatility in the auto industry and other durable goods sectors. In addition, outsourcing and supply chain management of both production and service activities have become more prevalent and geographically widespread.

Another dimension to this question is that shrinking employment may reflect accelerating productivity. The manufacturing sector began a robust, though not unprecedented, productivity acceleration (and labor saving) in the 1990s. Over the long term, such growth means higher living standards for American households. Finally, many believe that, owing to changing terms of trade throughout the world, the Midwest can no longer compete in the production end of manufacturing.

So, what is the future of manufacturing in the Midwest? Given the experience of the past 15–20 years, Moskow cited some grounds for optimism. During this time, the Midwest pulled off a remarkable comeback in manufacturing health, following the dismal years of the early 1980s.

While analysts will not be able to disentangle today's transitory changes from the structural for some time, Moskow warned against giving up on any industry or manufacturing activity without first considering efforts to eliminate inefficiencies in the region's physical and institutional infrastructure. There are many factors that are critical to keeping manufacturing competitive. One is the extent and composition of our public capital stock and infrastructure. How well can our roadways, rail, air, energy delivery, and communications systems coordinate and deliver goods to their sources of final demand? A second is education and training. How skilled, adaptable, and creative are midwestern workers versus those elsewhere? A third factor is the creation, transfer, and embodiment of new technologies in manufacturing.

Next, Bill Testa, Chicago Fed vice president and director of regional programs, explained that seen across a time span of three decades, the recent fall-off in the region's manufacturing jobs does not appear to be out of the ordinary. Since 1969, manufacturing jobs as a share of total jobs in the region have fallen from 24% to 17%. Compared with a trend line, manufacturing employment now appears to be above trend rather than below it.

In fact, the region has maintained and slightly enhanced its historical concentration in manufacturing activities relative to the nation. Accordingly, while the recent manufacturing employment decline has been no sharper here than in other regions, its impact on the District economy is likely to be more pronounced. Secondly, the region is coming off a period in which it had enjoyed a resurgence *vis à vis* other U.S. regions. Having lost one in five manufacturing jobs in the 1980 and 1981–82 recessions, it had regained its national share by the late 1990s. The region outperformed the nation during the relatively mild (for manufacturing) 1990–91 recession.

Discussing the long-term national trends, William Strauss, Chicago Fed senior economist and economic advisor, noted that manufacturing job growth has been stagnant for much of the last half century. A number of economic trends explain the shrinkage in manufacturing employment. One is the growing importance of the service sector. Another is productivity improvements in manufacturing, which have facilitated output growth with stable to slightly declining employment. Importantly, strong productivity growth has allowed manufacturing output to grow faster than the overall economy, which has contributed to rising standards of living—U.S. living standards have never been higher.

The current doldrums in manufacturing employment are closely linked with the most recent economic recession. The economy has been hit by a number of negative economic shocks, including the equity market collapse of 2000; rising energy prices in 1999/early 2000 and again in late 2002/early 2003; the September 11 attacks on the United States; the corporate governance scandals that started in 2001; and the geopolitical uncertainties associated with the conflict in Iraq. The loss of manufacturing employment observed during the recent slowdown is consistent with the decline in overall manufacturing production.

Why have declines in manufacturing production been pronounced and long-lasting during the last three years? Spencer Krane, Chicago Fed vice president and economic advisor, discussed trends and volatility in U.S. investment behavior. Krane noted that the equipment and software component has performed unusually, not only in its steep deceleration during the recessionary period, but also in its long period of expansion during the preceding 1990s. For most of the 1990s, real investment in equipment and software grew at rates of 10%–15% per annum, a level unparalleled over the past four decades. This contributed 1.0–1.5 percentage points to real gross domestic product growth—upwards of one-half of the robust growth of that era. The ultimate deceleration in spending was precipitous, beginning mid-year 2000 and contributing significantly to the 2001 recession. In fact, excluding business fixed investment, the remainder of output did not turn negative during the 2001 recession. But then again, said Krane, "there is never anything typical about a typical recession."

Even though investment spending in equipment and software is now contributing to real growth, Krane said, it hardly feels like a boom because the pace of capital spending has not yet returned to levels attained prior to the recession.

Krane voiced some optimism about continued growth—perhaps at a faster pace–of investment in equipment and software. Technological advances continue and relative prices of computing equipment are falling. In addition, he said, the services sector, which is expanding well, purchases the majority of equipment and software. Even the manufacturing sector is showing signs of renewed expansion.

International trade

J. Bradford Jensen, deputy director of the International Institute of Economics, discussed the role of international trade in U.S. manufacturing from 1977 to 1997. In particular, Jensen's research focuses on imports from countries with low average wages in the manufacturing sector. These countries, which include China, India, Egypt, and many small nations in Africa, are defined by wage levels that are 5% or less of the average U.S. wage. Imports from this cohort to the U.S. market grew at a fast pace over the period, rising from 2% of U.S. imports in 1972 to 15% by 2002, with textiles, apparel, and leather goods comprising the highest shares.

Jensen's results demonstrate that plant survival, as well as output and employment growth, is negatively associated with the share of industry imports sourced from the world's lowest-wage countries. In addition, he finds that plants are more likely to alter their product mix in response to trade with low-wage countries, especially by switching to products that are more capital- and skill-intensive. Jensen's preliminary estimates of import shares by industry suggest that many U.S. industries face heightened value and product competition.

In addition to cost-side pressures, many argue that relative currency values have contributed to U.S. export weakness and growing import competition. Donald Nichols, professor of economics and

director of the LaFollette School of Public Affairs at the University of Wisconsin-Madison, concluded that the strong dollar was one of several forces contributing to the large decline recently experienced by the manufacturing sector. Others include a slow-growing U.S. and global economy and the 30% U.S. tariff on steel imports. One historical analogy Nichols pointed to is the period following the recession of the 1980s. The high-valued dollar contributed to the large trade deficits of that era, but the subsequent closing of the trade deficit was also due in no small part to a revival of strong economic growth in Japan and Europe, accompanied in the early 1990s by a strong demand for capital goods in reunifying East Germany.

Nichols also pointed out that the long-term recovery in U.S. manufacturing depends importantly on China. China is much larger than Japan and cannot rely as much on exports to develop its economy. The most expedient way for China to develop internally is to allow Japanese, European, and U.S. firms to invest in its home market and to produce for that market. Nichols argued that this will also require imports of both financial capital and capital goods into China to equip these new enterprises. Midwest manufacturing can step up to meet the Chinese development challenge by exporting the most sophisticated capital equipment and consumer goods—such as medical equipment—for Chinese consumption. Among possible scenarios, Nichols suggested that China will maintain a low-valued yuan for many years to come, but that it will respond to its growing trade surplus with the U.S. by opening its markets for direct investment, capital goods, and licensing/protection of intellectual property. Eventually, China will feel the need to find other ways to stimulate economic development than through manufactured exports, and the yuan is likely to rise.

Regional dimensions

Next, Geoff Hewings, professor of geography at the University of Illinois and director of the Regional Economic Applications Lab, discussed changes in the structure and performance of manufacturing in Illinois, which have been significant relative to the rest of the region. In Illinois, employment was keeping pace with the region, but began to erode significantly in the mid-1990s. A closer look reveals that manufacturing declines have led the way. Mid-2003 employment levels were down 21% from 1990 levels in Illinois and 17% in the rest of the Midwest, versus 12% nationally. Illinois is now only slightly more concentrated in manufacturing than the nation, and significantly less so than the remainder of the Midwest. But Illinois's performance is weaker across the board, industry by industry, outperforming only in the leisure/hospitality sector. Within the region, it only added business/professional services to its performance advantages.

Restructuring has also taken place in trading patterns. Chicago's weaker manufacturing performance can be traced to a "hollowing out" process by which local manufacturers now buy from and sell to each other to a much lesser extent than 20 years ago. Rather, Chicago's manufacturers have followed a pattern of vertical specialization, whereby each plant trades with other manufacturers scattered throughout the Midwest—a manufactured good is broken into components and each is produced at a geographically distant location so as to squeeze costs out of the value chain. Surely, this region-wide scale of "cluster" has implications for optimal public policy, relying as it does on cheap and efficient overland transportation, which may be designed and planned cooperatively among states and areas. The implication is that a loss or unraveling of an industry in any one state may have detrimental consequences in neighboring ones. Hewings argued that the ongoing focus on competition using tax incentives might not be the best approach to economic development in the region.

The shift toward vertical specialization also has implications for international trade. Midwest manufacturers are increasingly dependent on trade with the rest of the world. Worldwide productivity gains, the rise of East Asian economies, and protected steel prices are all contributing to manufacturing job losses. Hewings noted that the Midwest economy remains vulnerable to energy prices and imported oil, and that jobs could be created through the adoption of renewable energy and energy efficiency programs.

Thomas Klier, Chicago Fed senior economist, next discussed the auto industry, a key cluster in the Midwest. While the auto corridor now extends from Detroit west to Chicago and south to Tennessee, with fingers reaching into Canada and Mexico, Detroit remains the hub of this industry. A 400-mile radius drawn around the Motor City includes virtually the entire Canadian auto sector and just under 60% of all U.S. light vehicle assembly plants, as well as the vast majority of supplier plants. A number of trends challenge the continued prominence of the Midwest as the nation's auto hub. First and foremost is the declining market share of U.S. auto manufacturers—down to 60% so far in 2003 from 73% in 1996. Increased U.S.-based production by foreign-owned plants has played a major role in market share gains by foreign automakers. These new plants tend to be located at the southern end of the auto region. The recently ratified contracts between the UAW and the Big Three, including Delphi and Visteon, point to a challenge for the Midwest auto industry. As the domestic automakers are heavily concentrated in the upper Midwest, capacity reductions will disproportionately affect that region. In addition, legacy costs, such as health

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care and pension benefits, continue to pose a competitive challenge for the Big Three. At the same time, the southward expansion of the auto corridor poses a test for auto suppliers. Currently, suppliers can easily serve multiple assembly plants from one of their production facilities in the auto corridor. However, continued southward expansion of the auto region could stretch it to the point where customers at both the northern and southern ends of the auto corridor could no longer be served from the same plant.

Industry perspective

Tom Duesterberg, executive director of the Manufacturing Alliance, delivered a keynote address, based on the new book published by Praeger, *U.S. Manufacturing: The Engine for Growth in a Global Economy*, which argues that manufacturing "activity" is evolving into a "solutions-based" High Innovation Model. He suggested that manufacturing production is becoming a commodity. Value added will continue to move away from manufacturing per se, to activities associated with design, engineering, marketing, servicing, and organization of products. As such, a commitment to technology and innovation is key to sustaining competitiveness and productivity growth.

While U.S. manufacturers face growing challenges from international competitors and from domestic policy, Duesterberg said the U.S. is the ideal platform for the innovation model due to its economic, political, social, and cultural environment. In contrast, many other countries face rigid labor market laws, heavy-handed regulation, poorly developed bankruptcy codes, lack of worker mobility, aging labor markets, and restrictions on immigration.

Despite these advantages, there is much the U.S. must do if it is to sustain manufacturing as the engine of U.S. economic growth that it has been. This includes encouraging a higher level of domestic savings, sustaining high levels of investment in research and development and in public infrastructure, a more educated and flexible work force, a more market-oriented regulatory approach, and more open international trade and investment.

Policymaker's view

Grant Aldonas, Undersecretary of Commerce for the U.S. International Trade Administration, discussed a policy study on manufacturing he undertook for Commerce Secretary Donald Evans in March 2003 (the report is due later this year). Aldonas has been conducting roundtable discussions with manufacturers around the country, including the Midwest, over the past four to five months.

Aldonas pointed out that much of the latest growth in the U.S. trade deficit has come about because the U.S. has grown more rapidly than most of the world. He suggested this cannot continue, partly because of the counterproductive growth of protectionist sentiment in Washington that is accompanying the growing deficit. Even so, he expects U.S. manufacturing to adapt by becoming more capital and technology intensive. He also sees the emergence of "global industry clusters,"—that is, the challenge for many U.S. companies is not whether they can export to Japan, per se, but rather if they can become a supplier to Toyota or to another leading multinational company. Roundtable participants urged the federal government to assist in making manufacturing policies with a more federalist shape. For example, should the U.S. government encourage interstate cooperation in planning and fashioning transportation and other infrastructure, work force training/mobility, and skills accreditation?

Conclusion

Many households' fortunes remain closely tied to the sagging manufacturing sector—especially in the Midwest. The Chicago Fed's Midwest Manufacturing Project aims to increase public understanding of economic events affecting the manufacturing sector.[1] Public policies are being shaped now at the community, state, and national level that will affect both the size and location of manufacturing activities in the future.

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[1] For more on the Midwest Manufacturing Project, go to http://www.chicagofed.org/newsandevents/conferences/midwest_manufacturing_project/index.cfm.