

# Chicago Fed Letter

## Is manufacturing at a crossroads?

*William A. Testa, vice president and director of regional programs, and Richard Mattoon, senior economist*

Is the manufacturing sector's recent poor performance due to cyclical factors or is it the result of a structural change that will outlast the effects of the recession? This is a difficult question to answer, but one that has important implications for economic policy both in the Midwest region and nationwide.

On April 27, 2004, Chicago Fed President Michael Moskow opened the third conference in a series that is part of the Bank's Midwest Manufacturing Project.<sup>1</sup> The project aims to improve our understanding of recent trends in the manufacturing sector, both nationwide and in the Midwest. Is the recent poor performance attributable to transitory, cyclical factors? Or, for example, does the growth of low-wage economies overseas presage a structural change, whereby domestic production activities will accelerate their migration overseas? Distinguishing whether this decline in manufacturing is simply related to near-term fluctuations in the business cycle or part of a

larger structural change can be difficult. But doing so is essential to provide policymakers with the information they need to fashion policies that promote economic growth.

### Sluggish employment growth

Net job growth has been unusually sluggish in *both* manufacturing and nonmanufacturing, in view of healthy gains in real output since the fourth quarter of 2001. Nonfarm employment has grown at an average rate of 2.0% since 1960, but grew only 0.49% from September 2002 to April 2004. The manufacturing sector has been losing jobs at an average annual rate of -0.2% since 1960, but has recently been shrinking at

an accelerated rate of -2.7% (year over year from March 2003 to March 2004).

Bill Testa of the Chicago Fed asked whether the changing organizational structure of manufacturing companies was distorting our observations of manufacturing gains and losses. He observed that U.S. manufacturing companies are becoming more like service companies over time. Within manufacturing companies, payroll workers are increasingly engaged in service occupations—especially management, technical, and business service activities. In the early 1950s, there were six production workers for every nonproduction worker versus 2.4 today. Meanwhile, manufacturing companies are purchasing a growing number of services, whose value is ultimately embedded in product value. As a result, we are likely overcounting the loss of manufacturing activity over time; in reality, some work formerly counted in the manufacturing sector is now attributed to service sectors. Cyclical swings are also suspect. For example, many manufacturing companies are now hiring workers from the temporary help supply sector—a “service sector”—for jobs that would have formerly been performed by manufacturing workers.

Erica Groshen of the New York Fed argued that structural change has contributed to the economy's weak job performance. She defined “structural job losses” as those situations in which workers are required to switch firms,

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industries, skills, or location to regain employment. In contrast to the recessions of the 1970s and 1980s, Groshen said that temporary layoffs (i.e., those subject to callback from employers) contributed little to joblessness in both the 1990–91 recession and the 2001 recession and its aftermath. Secondly, Groshen found that industries that suffered steep rates of decline in employment during the recession tended to continue these declines during the recovery. In previous recession/recovery periods, industries that experienced cyclical job losses during the formal recession tended to reverse those losses during the subsequent recovery. Groshen cited the following possible reasons for structural change: the “investment overhang,” effective countercyclical policy that eased job loss during the recession (but in doing so partially extended job loss into the recovery), and innovations in “lean staffing,” which allow firms to delay hiring.

The next speaker, Mark Schweitzer of the Cleveland Fed, said that even though the overall manufacturing employment decline has been pronounced and stubborn, experiences have differed greatly from industry to industry from 2001 to date. Moreover, over the past six months, employment declines have stabilized and have just about stopped (on average). Drawing on his conversations with Midwest manufacturers, Schweitzer reported that they are cautious about the future. They expect limited employment gains, while anticipating continued strong productivity gains.

The manufacturing sector led the overall economy’s surge in productivity in the latter 1990s. However, manufacturing productivity growth shrinks to a pace closer to that of services if we exclude semiconductor equipment and computer and peripheral equipment. Labor-saving productivity does not tell the full story. If we perform a simple correlation across individual industries and employment growth, we find that those industries experiencing robust productivity growth do not tend to shed the most workers (on average).

Since 1999, the fraction of laid-off manufacturing workers who are employed

the following year has significantly declined. At the same time, the share of former manufacturing workers who report themselves as unemployed has climbed sharply. This does suggest restructuring of the most fundamental sort, said Schweitzer.

Next, Ellen Rissman of the Chicago Fed examined the effect of the business cycle on employment shares. In particular, she observed co-movements in employment across industry sectors in order to construct a measure of the “employment cycle.” She then examined the behavior of employment by industry sector for signs of “unexplained” shocks that would indicate significant reallocation of employment across industries (i.e., “structural change”). She found little compelling evidence that employment shares by sector are behaving much differently than in the past.

Rissman forecasted that both durable and nondurable manufacturing in the U.S. will continue to decline in employment share and by 2010 will be about 5.9% and 3.6% of nonfarm employment, compared with 6.9% and 4.3%, respectively, at the beginning of 2003.

#### **International dimensions**

Nagi Palle of A. T. Kearney discussed trends in global outsourcing in the automotive industry, particularly to India and China. Palle noted that drivers of outsourcing include pursuing revenue growth, reducing costs, and reaching new markets or serving existing markets more efficiently. In all cases, firm-specific needs drive outsourcing strategies. Palle suggested that the market structure in Asia is quite different from North America. U.S. manufacturers tend to go to Asia in order to build their product near their customers. Consequently, existing Asian manufacturing activity is far more focused on local consumption than on exporting.

Palle noted that global automotive outsourcing tends to have two components—manufacturing and services. Low wages make Asian countries attractive for production, but prices paid on commodities needed for manufacturing in Asia are not always the lowest. Indeed,

U.S.-based firms often can meet or beat prices offered offshore. In addition, the reliance on a geographically dispersed supply chain can introduce risks. Palle characterized the competitive advantages of India and China differently. India tends to benefit from engineering-driven outsourcing. China competes on scale and cost. Palle concluded that outsourcing will continue to expand as it is driven by the continuing trends of economic liberalization, improved connectivity, reduced cost of telecommunications services, and large available pools of technical talent.

Next, economist Josh Bivens from the Economic Policy Institute argued that the imbalance in foreign trade has played a substantial role in manufacturing job loss. Bivens rejected the notion that there has been a long-term demand shift away from manufactured goods by U.S. consumers and producers. If we measure U.S. consumption of manufacturing goods—both those produced here and imported—relative to gross domestic product (GDP), the manufacturing output share has been remarkably steady over the last two decades, ranging from 16% to 18% of GDP.

Instead, Bivens suggested three driving influences for manufacturing employment—demand, productivity, and international trade. Bivens found that the downward pressure on employment caused by surging manufacturing productivity was mitigated by rising domestic demand over 1998 to 2003. This leaves changes in international trade accounting for 59% of the decline in manufacturing jobs since 1998 and 34% of the decline from 2000 to 2003. Bivens offered three policy options. First, the U.S. should pursue a fair dollar policy particularly toward nations that undervalue their currency. Second, the government should relieve manufacturing firms of some of their legacy costs in pensions and retiree health care. Finally, general health care reform would help address a significant cost burden.

Then, Michael Knetter, Dean of the University of Wisconsin Business School, presented his perspective on the real effects of currency fluctuations. Knetter

suggested that a weaker dollar would provide several benefits to U.S. manufacturers, such as a relative reduction in the cost of production, the ability to increase prices and expand profit margins, and higher production volumes. However, firms using imported inputs would face higher input cost; and the ability to increase prices would depend on conditions in the market where the product is sold. There is also the potential risk of trade sanctions or retaliation in foreign markets if the price advantage is seen as too extreme.

Knetter did see the recent nominal decline of 40% in the dollar versus the euro as benefiting midwestern manufacturers. He suggested that, given their location, midwestern firms may be less likely to use foreign inputs in production and, therefore, more likely to reap the full benefits of a weaker dollar. Finally, Knetter cautioned against taking measures to rapidly unwind the U.S. trade deficit, because this could have a detrimental effect on the underlying value of U.S. asset prices. Such a policy could inadvertently reduce aggregate U.S. wealth.

#### **Keynote address**

Bruce Braker, president of the Tooling and Manufacturing Association, discussed the challenges facing members of this 79-year-old trade association. Members perform a wide range of functions across several industry categories, including producing the tools, dies, jigs, fixtures, and other equipment needed as the means of production, as well as producing intermediate production inputs and subassemblies. They also increasingly provide value-added services, such as design and prototyping, engineering, and product development, as well as more traditional services, such as plating and engraving. Customers tend to be OEMs (original equipment manufacturers) and tier one and tier two suppliers.

One challenge is import penetration of metal components, dies, and molds. Association members face continuing cost pressures from increases in material prices, health care, and product liability. In addition, Braker noted that members are expected to offer prices comparable to those from low-wage countries and

that the product must be of the highest quality and be delivered on a tight timetable. There is even pressure to throw in design and engineering services for free.

To remain competitive, Braker said, members are diversifying their customer base, creating brand recognition for their product or process, taking on more complex projects, and forming strategic alliances with U.S. and foreign partners. In addition, members are targeting specific North American industries, such as medical equipment and supplies manufacturing, that are likely to remain good customers. Characteristics of these target industries include producing complex devices through skilled labor that require the use of high-value-added components. In addition, the products often have advanced application and must be built to precise tolerances. Other producers to target include firms whose products require service support, are short-lived and therefore require more frequent restocking, and those that operate on short-run production and just-in-time shipment.

#### **Can regional policy help?**

The afternoon session of the conference featured perspectives from five economic development experts on the role of state, local, and regional policy in improving manufacturing performance. Panel moderator Rick Mattoon from the Chicago Fed began by highlighting the policy recommendations contained in nearly a dozen manufacturing studies released over the past two years. Mattoon characterized these recommendations as falling into five broad categories: federal strategies, cost-reduction strategies, work force strategies, institutional changes, and value-added approaches aimed at improving firm productivity. In terms of regional policy, cost-reduction, value-added, and work force approaches seem most appropriate. For example, in the cost-reduction category states can examine their tax structure to see whether tax systems burden capital formation. They can also consider the economic effects of state and local regulation. In the area of value-added strategies, technical assistance programs can be particularly useful, along with developing supportive public infrastructure. Mattoon noted that

perhaps the most frequently cited strategy concerns work force development and training.

Senior economist Tim Bartik from the Upjohn Institute argued that strategies focused on increased productivity are the most promising for the long run, but it is important for government interventions to focus on "market failures," which might be related to inefficiencies in distributing information, inability of firms to conduct research and development, inefficient worker training, and financial impediments.

Bartik also noted that policy should focus on small and medium firms and recognize that these firms often need complex services. He argued that the scale of government services provided is often too small and not enough evaluation is done to identify which programs work best. Finally, Bartik suggested that too many economic development dollars are spent on tax breaks, diverting resources from more important value-added services.

Professor Ned Hill from Cleveland State University then discussed the results of two major studies he conducted in Ohio and Pennsylvania. In Pennsylvania, Hill found that a major problem facing manufacturers was that they specialized in producing commodity-type products that lacked high-value-added and customized content. Hill said that economic development needs to focus on a company's cash statement. Healthy companies with

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Michael H. Moskow, *President*; Charles L. Evans, *Senior Vice President and Director of Research*; Douglas Evanoff, *Vice President, financial studies*; David Marshall, *Vice President, macroeconomic policy research*; Daniel Sullivan, *Vice President, microeconomic policy research*; William Testa, *Vice President, regional programs and Economics Editor*; Helen O'D. Koshy, *Editor*; Kathryn Moran, *Associate Editor*.

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strong product demand create employment. Second, policymakers should talk to firms and develop specific information about manufacturing conditions. In addition, it is important not to assume that advertised competitive strengths actually exist. For example, Hill noted that many areas claim they have a hard working, highly trained, efficient work force, when in reality they merely have a work force that will show up for work on time.

State and local governments need to examine overhead costs for manufacturers, including tort costs, health care costs, and tax structures, Hill added. He suggested that states move toward a greater emphasis on the taxation of immobile factors of production, such as payroll, rather than capital investment. In addition, he suggested that federal programs such as the Community Reinvestment Act be modified to consider the financing needs of small and promising businesses. Training should emphasize soft-skill development such as communication skills, teamwork, and problem-solving. Finally, Hill said that federal policymakers need to focus on market access and ensure that non-tariff barriers are being addressed.

Next, Andy Reamer (principal, Andrew Reamer and Associates) provided an overview of a report he authored for the U.S. Economic Development Administration on technology transfer. His research suggests that technology innovation is geographically concentrated primarily in large metropolitan areas. In particular,

he argued that it is important for policymakers to understand that an economy that is good at innovation does not necessarily capture the benefits of product commercialization. The two processes can be quite separate, and globalization promotes commercial production at the lowest cost site.

For a community to be good at innovation, it needs to support a culture of learning. Reamer explained that large metropolitan areas are often best suited to creating the diversity of ideas and the necessary scale to support this type of culture. For innovation, the informal, face-to-face exchange of ideas is particularly crucial. Policymakers often overestimate the role of universities in promoting innovation. Major state universities are often geographically isolated from economic centers and this limits their influence. Reamer argued that the level of industrial research and development is a more compelling measure for judging the innovation potential of a city. Finally, Reamer said that cities and regions need to be more realistic. For example, the Louisville area has successfully developed a niche as a distribution center. This has been supported by infrastructure investments and the development of centers dedicated to the study of logistics.

The final speaker, Dan Swinney, executive director of the Center for Community and Labor Research, discussed a report he coauthored on manufacturing prospects in Illinois. Swinney noted that there are high-road and low-road

strategies available to all stakeholders. High-road strategies focus on product and process innovation and work force training, while low-road policies focus on cutting costs. The key role for government is to create policies that reward high-road behavior. For example, tax policy should reward firms that do research and development and provide worker training and fair benefits. Government should create these policies not for social reasons, but because they will enhance business competitiveness.

In conclusion, Swinney cited three other policy concerns. First, he noted that many manufacturers are small, family run businesses. Issues of succession are often important in maintaining the vitality of these firms. Second, training must focus on skill standards that meet industry needs and lead to certification. Third, manufacturing needs a public relations campaign to make it clear that it is a vital and dynamic part of the economy that offers career opportunities for high school and college students. Swinney argued that there is broad-based support for a high-road manufacturing policy in Illinois and that the Illinois Manufacturers Association and the AFL-CIO have joined together to produce a long-term policy agenda to support manufacturing.

<sup>1</sup> For more information on this and other conferences in the series, go to [www.chicagofed.org/news\\_and\\_conferences/conferences\\_and\\_events/midwest\\_manufacturing\\_project.cfm](http://www.chicagofed.org/news_and_conferences/conferences_and_events/midwest_manufacturing_project.cfm).

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