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## **Why Manufacturing Still Matters**

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As one of a rare group of economists who believe that “**manufacturing matters**” for the health of the American economy, I was heartened to hear President Obama emphasize manufacturing in his State of the Union address. During the last two years, the manufacturing sector has led the economic recovery, expanding by about 10 percent and adding more than 300,000 jobs.

Admittedly, this is a small number compared with overall private-sector job gains of 3.7 million during the same period, but it reverses the trend of declining manufacturing employment since the late 1990s.

And promising signs are emerging that American companies are shifting some manufacturing production and employment back to the United States. Policies to strengthen the competitiveness of the United States as a location for manufacturing can strengthen these nascent developments.

Though there are economists **who do not share** my heretical view, I believe that a strong manufacturing sector matters — and deserves the attention of policy makers — for several reasons.

First, economists agree that the United States must rebalance growth away from consumption and imports financed by foreign borrowing toward exports.

**Manufactured goods** account for about 86 percent of merchandise exports from the United States and about 60 percent of exports of goods and services combined. Exports support more than one-quarter of manufacturing jobs in the United States.

Even though service exports are becoming more important, the only way the United States can rebalance growth and make a significant dent in its trade deficit for the foreseeable future is by increasing exports of manufactured goods.

American manufacturing exports are becoming more attractive as a result of rising wages abroad, the decline in the dollar's value, increasing supply-chain coordination and transportation costs, and strong productivity growth in American manufacturing.

Germany and Japan, two high-wage countries, have maintained substantial shares of manufacturing in their economies, and are major exporters of manufactured goods to emerging market economies. Like manufacturing in these countries, manufacturing in the United States can win larger shares of global export markets with the right policies in place.

Second, on average manufacturing jobs are **high-productivity, high value-added jobs** with good pay and benefits. Even though the premium on manufacturing wages has been declining over time, it remains significant. Between 2005 and 2010, average weekly earnings in manufacturing were about 21 percent higher than average weekly private non-agricultural earnings. In 2009, the average manufacturing worker earned \$74,447 in annual pay and benefits compared with \$63,122 for the average non-manufacturing worker. In that year, only about 9 percent of the work force was employed in manufacturing, down from about 13 percent in 2000.

The fall in manufacturing employment during the 2000s was a major factor behind growing wage inequality and the polarization of job opportunities between the top and bottom of the wage and skill distribution, with **a hollowing out of middle-income jobs**.

Even with continuing labor-saving automation, stronger growth in American manufacturing would mean **more middle-income job opportunities** for workers both in manufacturing itself and in the many domestic business services that support it.

Third, manufacturing matters because of its substantial and disproportionate role in innovation. Few economists dispute the importance of innovation to the growth of living standards, but few acknowledge the strong links between innovation and manufacturing.

A strong manufacturing sector supports the key building blocks of the nation's innovation ecosystem — its skilled scientific, engineering and technical work force, its research and development, its ability to identify technical challenges and provide creative solutions.

Although manufacturing is only about 11 percent of gross domestic product, it employs the majority of the nation's scientists and engineers, and it accounts for 68 percent of business R.&D. spending, which in turn accounts for about 70 percent of total R.&D. spending.

American leadership in science and technology remains highly dependent on R.&D. investment by manufacturing companies, and the social returns to such investment are substantial, far exceeding the returns to the companies that fund it.

Despite the offshoring of parts of the manufacturing supply chain, manufacturing companies in the United States continue to situate most of their R.&D. investment and research work force in the United States.

American multinational companies that account for about 84 percent of all private-sector (non-bank) business R.&D. in the United States still place about 84 percent of their R.&D. activities in the United States, often in clusters around research universities, as Matthew Slaughter of Dartmouth calculated for our article, "Warning Sign From Global Companies," which will be published in The Harvard Business Review next month.

But this share is gradually declining as American companies shift some of their R.&D. to Asia in response to rapidly growing markets, ample supplies of technical workers and engineers and generous subsidies. The number of foreign research workers employed by American multinational companies has more than doubled in the last decade.

China and other emerging economies are actively building their R.&D. capabilities and aggressively competing for the R.&D. of American manufacturing companies. Meanwhile the attractiveness of the United States as a location for such activities is slipping because of shortages in the skilled scientific, engineering and technical labor force and restrictions on the number of immigrants with these skills.

Congress's failure to extend and broaden the R.&D. tax credit, as President Obama has urged, is also encouraging companies in the United States to look to other countries offering far more generous R.&D. tax incentives.

In his State of the Union speech, President Obama proposed several additional changes in business taxes to discourage the outsourcing of manufacturing jobs and to encourage their creation in the United States.

A significant reduction in the corporate tax rate in the United States, which is the second highest among the developed countries, would be a much more powerful incentive to encourage American manufacturing production than these changes. Nor is it likely that they would have much effect on American manufacturing employment, because outsourcing has not been the major cause of manufacturing job losses.

Between 2000 and 2011, American manufacturing employment declined by about 5.6 million while American manufacturing output, after contracting during the 2001-2 and 2008-9 recessions, expanded by about 1 percent.

The contraction in employment occurred throughout the manufacturing sector not just in multinational companies that are often criticized for outsourcing jobs in pursuit of lower labor costs and taxes. The remarkable divergence between manufacturing output and employment reflects strong labor productivity growth, driven by labor-saving technological progress. This trend is likely to persist independent of changes in corporate taxation.

The other policies President Obama is promoting to support manufacturing — measures to increase high-school graduation rates; work-force training programs at community colleges; more support for basic research, infrastructure investment, and scientific, engineering and technical education; and immigration reform — would benefit not just manufacturing but the entire economy.

There is widespread support for such policies among economists, whatever their view of the role of manufacturing.