EMPOWERING AMERICAN CITIES

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Manufacturing Myth-Busters

Myth 2: U.S. Manufacturing Jobs Were Lost Solely to Productivity, Not Trade

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Through the Empowering American Cities project, we continue to argue that the Manufacturing sector is an undervalued asset in the portfolio of industries that make up any region's economy. There is no doubt that U.S. manufacturing has historically had a more prominent role in driving American prosperity, yet the cause of its relative decline is often misunderstood. A proper framework for discerning the sector's past challenges is essential to understand the future of American manufacturing. Through this piece, the second installment of our three-part Myth-Busters series, we continue to challenge the myths that have led many to overlook the sector's value and its opportunity to contribute to regional prosperity.

This is the second in a series of three "Myth-Busters" challenging negative perceptions of U.S. manufacturing.

'Manufacturing Is a Victim of Its Own Success'

Employment in U.S. manufacturing, a highly cyclical industry that follows the business cycle, can be quite volatile. Troughs often occur at the end of recessions, followed by building through recoveries and expansions, peaking at the conclusion of a business cycle. Manufacturing tends to experience more pronounced fluctuations than other sectors. During periods of economic growth, demand for manufactured products escalates, leading to increased revenue and profits. During economic downturns, demand plummets, leading to significant losses.

In this century, however, we have seen a marked decline in manufacturing employment, decoupled from the business cycle. From 17.3 million employed in the field at the beginning of 2000, the U.S. manufacturing workforce fell to 11.5 million by the end of 2009, a stunning loss of more than a third of the sector's jobs. The decline happened extraordinarily quickly, with over half the job loss coming in the first three years.

So why did this happen? A common argument, and one still prevalent today, was that manufacturers simply needed fewer workers as more efficient production techniques and automation were widely adopted. Economists refer to this sort of change as productivity growth. There are several ways to

define productivity, but typically it refers to either 1) economic output per hour worked or 2) economic output per worker, the standard we use in the Empowering American Cities project. In other words, the productivity case states that American workers became so good at making things, a third of them were no longer needed – victims of their own success.

The evidence for this argument *on the face of it* seems compelling. From the first quarter of 2000 to the fourth quarter of 2007 (its peak this century), American manufacturing output grew 8.6% while the sector's workforce shrank by 20.6%. Making more with less is the core principle of productivity. *If productivity gains were the sole reason for a shrinking workforce, this trend would likely continue both in the U.S. and abroad, and manufacturing would truly be a dead end for employees and for the regions tied to that industry.*

But, as we say in the Empowering American Cities project, "It's the big picture, but it's not the full picture."

Questioning the Productivity Argument

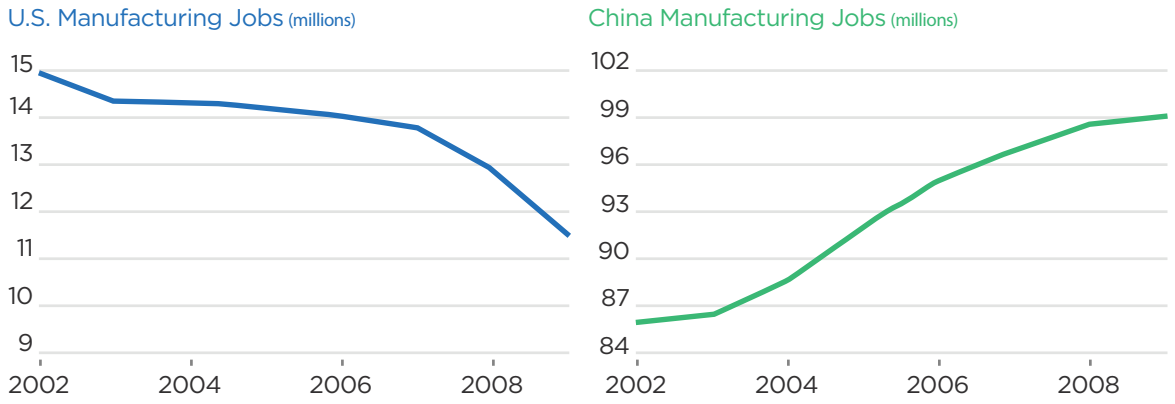
To determine the extent to which productivity drives American manufacturing job losses, we need to ask additional questions. Among them:

1. If productivity reduced employment, why did it happen in the Manufacturing sector but not in so many other industries? One could argue that service industries like retail or hospitality are more hands-on and less able to harvest productivity gains, or one could accurately observe that demand for services grows faster than demand for goods as the world gets richer. That would not explain, however, why goods-producing U.S. sectors such as Oil and Gas Extraction or Mining and Logging grew their payrolls even as those in Manufacturing shrank.

2. The speed of the change is inconsistent with productivity improvements, which tend to be gradual. The U.S. lost roughly 3 million manufacturing jobs from 2000 through 2002, even adjusting for the highly cyclical nature of manufacturing employment.

3. Productivity eliminating jobs should be global. Between 2002 and 2009, the U.S. lost millions of manufacturing jobs, while China gained more than 10 million. There is no doubt that some of these gains represented labor-capital substitution – i.e., low-wage countries using manual labor that would have been automated in higher-wage countries. Yet by some measures,

Manufacturing Jobs Growth: U.S. and China



like robotic density (robots per 10,000 factory workers), countries like China are well ahead of the U.S. in automation.

These observations all suggest that trade – i.e., jobs moving abroad – not productivity, has at times been an important driver of the recent period of American manufacturing job losses. It is worth distinguishing the post-2000 period from preceding decades. While growth in international trade and productivity occurred throughout the post-World War II economy, the post-2000 period had an important new attribute: the integration of China in the global economy. In 2000, the U.S. granted the People's Republic of China "most favored nation" status (now called "permanent normal trade relations"), and China formally joined the World Trade Organization in 2001. This normalization significantly reduced barriers to trade and investment with what was then the world's most populous nation, which offered a growing consumer base, large industrial capacity and low wages.

How can these factors be squared with the evidence of productivity growth as the primary cause of manufacturing decline?

A Deep Dive into Manufacturing Productivity

Two complications arise when considering manufacturing productivity:

1. Do aggregate productivity numbers tell the full story in a sector as diverse as Manufacturing?

2. If productivity is output per employee, how do you measure output?

Upjohn Institute economist Susan Houseman has pointed out that stunning gains in tech productivity have masked lackluster gains in other areas of manufacturing. While automation-driven productivity gains could explain some job losses in affected subsectors, there is no corresponding story for traditional subsectors like furniture, appliance or textile manufacturing. Those areas lost jobs but not due to productivity gains.

To properly examine productivity in the tech sector, it is important to consider that productivity is not only about the quantity of goods produced and their prices. Economists measure the value of these goods, which can increase even if the number of goods produced is unchanged and their prices decrease. Economists derive this rise in value by measuring quality improvements. If a new smartphone, for example, comes with enhanced features like a longer battery life and improved camera, its quality is perceived to be higher, even if it is sold at the same price as older models or in fewer quantities.

This is known as a "hedonic adjustment," where the value of the product is adjusted upward to reflect quality improvements.

These adjustments provide a more realistic portrayal of economic output and productivity. They sometimes stir up confusion, however, as quality improvements may be mistaken for production increases. So, even if fewer tech goods are produced or their prices remain stable, GDP accounting can still show an increase in value due to quality improvements. These adjustments can muddle our perception of productivity and job losses in manufacturing. For example, in a local economy, if a furniture manufacturer shifts 1,000

jobs abroad and a carbon fiber technologies plant creates 100 new jobs, the net change in output may be negligible, yet 900 jobs are gone, lost to outsourcing and not to productivity gains.

Conclusions and Looking Forward

We acknowledge that productivity gains played some role in this century's loss of manufacturing jobs in the U.S., but it is far from the only cause, and perhaps not the primary factor in the recent period. Many jobs did not disappear due to automation, but rather those jobs moved overseas for cheaper labor, closer access to new consumer markets and other cost savings. To accept that trade and trade policies played a role is not to condemn those policies but argues that past and future policies should be reviewed with a realistic lens, perhaps one that adjusts for differences in environmental policies and workers' rights. These adjustments are important because countries with lower standards for environmental policies and workers' rights may undercut American manufacturing, leading to unfair competition and workforce reductions.

Tariffs may ultimately lead to some reshoring, but these levies are counterproductive in the short and medium term for domestic manufacturing because modern supply chains are interdependent. An American-made automobile, for instance, may come off the assembly line in Detroit, yet its components may have crossed the U.S. border more than half a dozen times along the way. So, if we tax those goods at every border crossing, the result will be higher prices and a weaker competitive edge for domestic firms. Yet there is much uncertainty about what policies will be enacted and for what period, as the current rise of protectionist policies are part of a dynamic and evolving situation.

Recognizing that trade played a significant role in the shift of manufacturing jobs begs the question, **"If trade contributed to the relocation of manufacturing jobs, can trade bring them back?"** In the third and final part of our Manufacturing Myth-Busters series, we will consider whether economic conditions can and will drive manufacturing jobs and facilities back to the United States.

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COMING SOON TO MANUFACTURING MYTH-BUSTERS ...

Myth 3: If Trade Contributed to the Relocation of Manufacturing Jobs, Can Trade Bring Them Back?

For more information on **Empowering American Cities**, please visit our website.
More reading on manufacturing in the new economy:

Manufacturing: Regional Strengths and Shifts

Electric Vehicles: New Cars, New Regions and New Challenges