

Decline in U.S. Manufacturing
Employment Revisited
April 6, 2022

In his state of the union speech on March 2, 2022, President Biden called for increasing manufacturing jobs in the United States. In this, he echoed one of the dominant themes of the Trump administration. In addition to traditional concerns about the loss of relatively high-paying jobs, recent developments – the pandemic and Russia’s invasion of Ukraine - have highlighted the vulnerabilities associated with depending upon other countries, particularly economic and political rivals, for critical products.

Exploring ways to strengthen the U.S. manufacturing sector was one of the main objectives of this website back in 2011.¹ I was concerned about the labor market implications of declining manufacturing jobs: manufacturing paid relatively high wages to workers lacking college degrees. I was also concerned that declining manufacturing employment might undermine U.S. technological leadership. Having written extensively about the repeated renewals of the New England economy since the 17th century, I am a firm believer in the importance of clusters of technological know-how to the generation of new ideas, firms, and industries. It is difficult to create something out of nothing. And while I did not focus explicitly on the security implications of a declining manufacturing base, I did warn that the breakup of manufacturing networks would be self-reinforcing and that the separation of R&D from production might lead to a loss of expertise in both.

In this comment I re-familiarize myself with the source of my original concern – the loss of manufacturing jobs in the United States. In subsequent comments, I hope to look more carefully at causes, consequences, and responses.

Manufacturing Employment over Time

Post-war Prosperity

Manufacturing has been declining as a share of total U.S. employment since shortly after World War II. In 1949, close to 30 percent of employment was in manufacturing, in 2019 just over 8 percent.² However, from 1949 to 1979, although manufacturing’s share of employment declined, the actual number of manufacturing jobs increased. Individual manufacturing industries, notably textiles and leather, experienced permanent job losses, but these were more than offset by strong growth in most durable goods industries, as well as in printing and publishing, chemicals, and rubber and plastics.

¹ See “Comments on Decline in Manufacturing,” (May 3, 2011) under Original Entries on this website.

² I end with 2019 to avoid the distortions caused by the pandemic, but the lockdowns hit other industries harder than manufacturing. Manufacturing’s share of total employment was 8.3 percent in 2020. As can be seen in the table, one percentage point of the decline in share is due to some manufacturing jobs being re-classified as information and services.

The 1950s and 1960s were a good time for U.S. manufacturing. The 1970s were more challenging. Although the number of manufacturing jobs increased over the decade, growth slowed. Productivity gains and cutbacks in defense spending contributed; but in addition, more and more manufacturing industries faced competition from overseas, especially from producers in a Japan and a Europe that were substantially recovered from the devastation of WW II.

Table 1. Manufacturing Employment: Share of Total Employment and Percent Changes, 1949-2019

| Year | Employment (000's) | | Percent change (%) | | Manufacturing Share of Total (%) |
|-------------------|--------------------|---------------|--------------------|---------------|----------------------------------|
| | Total | Manufacturing | Total | Manufacturing | |
| 1949 | 50358 | 14429 | | | 28.7 |
| 1959 | 61587 | 16656 | 22.3 | 15.4 | 27.0 |
| 1969 | 79850 | 20306 | 29.7 | 21.9 | 25.4 |
| 1979 | 98017 | 21182 | 22.8 | 4.3 | 21.6 |
| 1989 | 115501 | 19484 | 17.8 | -8.0 | 16.9 |
| 1999 | 134350 | 18605 | 16.3 | -4.5 | 13.8 |
| 1999 ¹ | 134350 | 17383 | | | 12.9 |
| 2009 ¹ | 135574 | 11842 | 0.9 | -31.9 | 8.7 |
| 2019 ¹ | 155338 | 12806 | 14.6 | 8.1 | 8.2 |

1. Industry employment is based on the North American Industrial Classification System (NAICS.) Earlier data are based on the Standard Industrial Classification (SIC) system.

Source: U.S Bureau of Economic Analysis, Tables 6.4B,6.4C,6.4D

"Full-time and Part-Time Employment by Industry," Revised July 30, 2021

<https://www.bea.gov/tools>

Interactive data (Accessed March 12, 2022)

Turbulent Decade

In an environment of intense import competition, a severe recession in 1982 led to sharp job declines in relatively high-wage durable goods industries. Employment in the iconic motor vehicles industry fell by almost 30 percent between 1979 and 1982. Responding to these job losses, the Reagan administration negotiated export restraints with the Japanese government, by which Japanese automakers would “voluntarily” limit exports to the United States. Japanese producers responded to these limitations on exports by building their own auto plants in the United States. By 1989, half of the jobs lost early in the decade had been regained, and by 1999 U.S. employment in motor vehicles was back to where it had been 1979 – although many of the jobs were in different companies and in different states.

The success of Japanese companies in penetrating U.S. markets generated considerable dismay and soul-searching in the United States. The merits of the Japanese government's industrial policies were hotly debated in academic and political circles. Many U.S. manufacturers sought to emulate Japanese production practices, especially their emphasis on quality and just-in-time inventory management.

Other important industries did not fare as well as motor vehicles. U.S. employment in primary metals fell by almost 40 percent in the 1980s and these 500,000 jobs were gone for good. Also, gone for good were another 500,000 jobs in the combination of textiles, apparel, and leather and leather products – a decline of over 20 percent. For these three relatively low wage industries, Japan was not the problem. Rather, they faced increasing competition from producers in low wage countries, which by the mid 1980s included a newly outward-looking China.

Textiles, apparel, and leather continued to bleed jobs in the 1990s. Primary metals continued to struggle. But employment in most manufacturing industries changed relatively little. In a few, jobs increased. Concerns about competition from Japan receded as that country experienced a severe recession of its own in the early 1990s and did not regain its dynamism.

More Difficult Times

The situation changed dramatically in the 2000s. The recession of 2001 was mild and short in terms of real GDP, but manufacturing employment fell sharply – and kept falling several years into the recovery. While job reductions were widespread, among the more severely affected manufacturing industries were computers and electronic products and electrical equipment. Between 1999 and 2005, employment in these two high technology industries fell 25 percent. At the other end of the skill and wage spectrum, the textiles and apparel and leather products industries suffered even deeper cuts. Then came the Global Financial Crisis and the Great Recession.

Most manufacturing industries were adversely affected in the Great Recession, but employment fell especially sharply in wood products and furniture – not so surprising given the collapse in housing construction and home sales - and in motor vehicles. Over the entire period, 1999 to 2009, total manufacturing employment fell by a third – 5.6 million jobs. Employment in wood products, furniture and primary metals fell over 40 percent; employment in motor vehicles fell almost 50 percent; and in textiles and apparel and leather products employment fell roughly 60 percent over the ten years.

The next ten years saw a small recovery. Between 2009 and 2019, manufacturing grew by 8 percent – a gain of a million jobs. Of these million jobs, a third were in motor vehicles and a third were in the food, beverage, and tobacco products industry, with the balance spread over a number of different industries. Several industries continued to lose jobs: textiles and apparel and leather; paper and printing, as the world went digital; and computers and electronic products. Thus, for manufacturing as a whole, conditions stabilized between

2009 and 2019, but there was no rebound. The recovery in motor vehicles was aided by the U.S. government, which responded to the losses in the Great Recession by providing bridge loans and working capital to General Motors and Chrysler to avoid their potential failure and liquidation.³

The food, beverage, and tobacco products industry, with 1.9 million jobs in 2019, is now the nation's largest manufacturing industry and the only one of the BEA's 19 manufacturing industries to have higher employment in 2019 than twenty years earlier, in 1999. Other industries are shadows of their former selves. Textiles and apparel and leather employed fewer than 400,000 workers in 2019, compared to 1.3 million in 1999 and roughly 2.5 million in the 1970s. The printing and paper industries together employed 1.4 million people in 1999 and just 800,000 in 2019. The figures are similar for wood and furniture. The computer and electronic products industry employed almost 1.8 million in 1999 and 1.1 million in 2019.

The dramatic decline in U.S. manufacturing jobs from 1999 to 2009 coincided with China's emergence on the global stage as a dominant producer and exporter. Over the decade, China's share of global exports increased 10 percentage points, while both the United States and Japan lost market share.⁴ In trade with the United States, China's share of U.S. goods imports rose from 8 percent in 1999 to 19 percent in 2009. U.S. exports to China also increased rapidly but remained much smaller than imports. The U.S. trade deficit with China ballooned, far surpassing that with Japan – or any other country.⁵

Yet initially at least, China's rise did not spark the same anxieties that Japan's inroads had in the 1980s. Yes, many complained that China manipulated its currency, keeping it artificially low to improve the competitiveness of its firms. But on the whole, the economic opening up of China was a source of excitement. Many U.S. businesses saw a land of opportunity, with a potentially huge market and a low-wage, disciplined workforce. Many hoped to establish plants in China, from which they could serve global markets, including both the rapidly growing Chinese market and the market back home in the United States.

Attitudes changed in the mid 2010s, even though the U.S. manufacturing situation seemed to have stabilized. China came to be seen as more of a threat to the U.S. economic and political position in the world. No doubt this shift in thinking was influenced by the difficulties encountered trying to enter the Chinese market, by China's surpassing the

³ Both companies were required by the Obama administration to go through brief "controlled bankruptcies" that allowed them to shed obligations and that changed ownership.

⁴ Steven Husted and Shuichiro Nishioka, "China's Fair Share? The Growth of China's Exports in World Trade," *Review of World Economics*, September 2013, through ResearchGate https://www.researchgate.net/publication/257493053_China%27s_Fare_Share_The_Growth_of_Chinese_Exports_in_World_Trade (Accessed April 1, 2022.)

⁵ U.S. Bureau of the Census, U.S. International Trade Data, Balance by Partner Country, U.S. trade in goods with World, China and Japan (billions US\$.) <https://census.gov/foreign-trade/balance/index.html>. (Accessed March 2021) U.S. exports to China accounted for about 2 percent of total U.S. goods exports in 1999 and 6.6 percent in 2009. Over the same period, the trade deficit with China grew from \$69 billion to \$227 billion (nominal \$), while the trade deficit with Japan fell from \$73 billion to \$48 billion. China's shares of U.S. exports and imports in 2019 were similar to the 2009 shares.

United States as the world's largest economy in terms of purchasing power parity, and by the more explicit and assertive expressions of China's global ambitions under the leadership of Xi Jinping.

Causes of Declining Manufacturing Employment

What explains the decline in U.S. manufacturing employment? In my comments above, I highlighted the role of competition from other countries, both in the form of imports to the United States and in global export markets. But many economists consider international trade to be a small part of the story.⁶ High productivity growth – the ability to produce more output with less labor input – is the primary driver, they argue. Since productivity growth is higher in manufacturing than in most services industries, it is not surprising that manufacturing's share of employment has fallen.

At the same time, differential productivity growth does not really explain why so many manufactured products that were once made in the United States and that we continue to buy are now made somewhere else. Employment in textiles, apparel and leather goods did not fall from 2.5 million in the 1970s to less than 400,000 in 2019 solely because productivity growth in these industries was so rapid. Rather, we found that we could purchase these goods more cheaply from other countries than we could produce them ourselves. In exchange, we export goods and services in which we have a comparative advantage, or that we can produce relatively more efficiently than our trading partners. With countries focusing on producing the goods where they have a comparative advantage and buying from others those goods where they do not, overall output will be higher and costs will be lower. The job losses in the industries where we are relatively less efficient, such as textiles, apparel and leather, should be offset by increases – relative to a no trade situation – in other parts of the U.S. economy.

Of course, it has long been acknowledged that those who have lost their jobs in textiles or other industries disadvantaged by trade may not benefit from the employment opportunities trade creates. That is also true of people displaced by productivity gains. Productivity growth is the key to higher standards of living, but those who lose their jobs to automation or disruptive technologies may not be able to find comparable employment. Ideally, the winners compensate those who lose. But that often fails to happen.

In a future comment, we will look more carefully at the roles of productivity gains and trade in explaining what has happened in manufacturing. Does it matter which is responsible? And where does the U.S. comparative advantage lie?

⁶ For a recent summary, see Stephen J. Rose, *Do Not Blame Trade for the Decline in Manufacturing Jobs*, Center for Strategic and International Studies, October 2021. <https://www.csis.org/analysis/do-not-blame-trade-for-the-decline-in-manufacturing-jobs>. (Accessed March 22, 2022.)