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Job Boom in the Manufacturing Sector: History Says It Likely Won't Last

Summary

- The number of factory jobs climbed steadily between the late 1930s and 1979. Then cutbacks started, with the manufacturing sector shedding more than eight million jobs on balance over the subsequent thirty years.
- The financial health of the manufacturing sector had deteriorated significantly by the late 1970s. Unit labor costs were surging and profit margins were shrinking.
- The manufacturing sector faced two more challenges in the 1990s: NAFTA and the emergence of China as a low-cost center of production. American manufacturers increasingly substituted capital for labor to increase local production.
- These rationalization efforts helped to improve the financial health of the manufacturing sector. Unit labor costs flattened throughout the 1990s and the first decade of the 21st century.
- Manufacturing employment has recently enjoyed a renaissance of sorts with payrolls rising by 1.3 million over the course of the last decade.
- But productivity growth in the manufacturing sector has been anemic, unit labor costs have shot higher again and profit margins appear to be narrowing.
- Manufacturing employment likely will continue to grow, at least in the near term. Producers have hefty backorders and job openings in the sector have surged.
- But there are signs that manufacturers are beginning to ramp up capital spending again. We suspect that another secular round of capital deepening in the manufacturing sector, which would reverse the flattening in the capital-to-labor ratio that occurred in the past decade, is in the offing.
- We do not think that manufacturing payrolls will go into reverse, but we believe that manufacturing employment will be hard-pressed to match the gains of the past decade in the 2020s.

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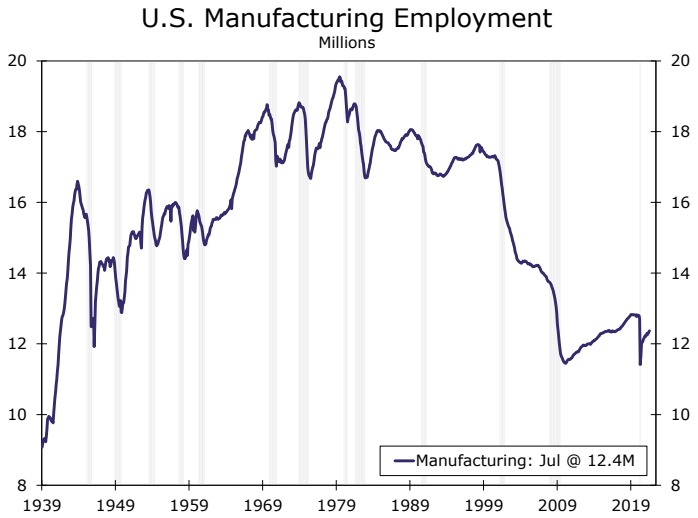
Has Manufacturing Employment Entered a New Secular Uptrend?

The number of factory jobs peaked at nearly 20 million in 1979.

Like the family farm, factory employment holds a special place in American lore. The steady stream of workers, both native-born and foreign-born, who poured into the country's bustling factories starting in the late 19th century transformed the United States from an agricultural economy into the world's leading industrial power. A few decades later, soldiers and sailors returning home following the Second World War found ready employment in factories and joined the ranks of the nation's expanding middle class (Figure 1). Roughly one-third of the American workforce was employed in the factory sector throughout much of the 1950s, which are often idealized as the halcyon years of American manufacturing. (Figure 2).

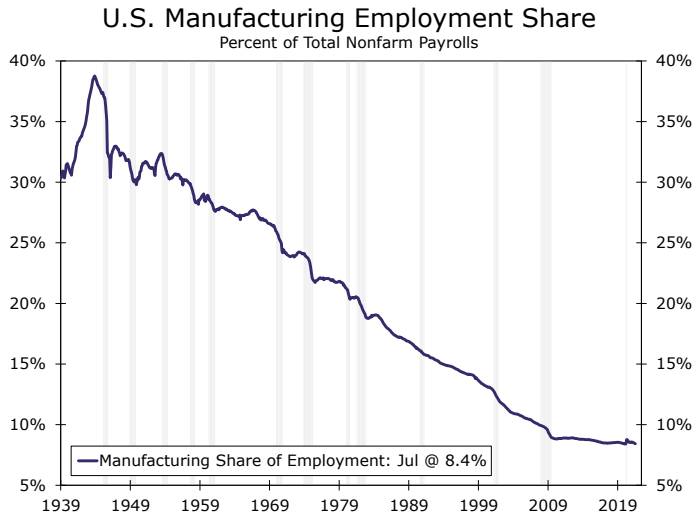
The steady uptrend in manufacturing employment that began in the late 1930s lasted for about 40 years. At the peak in 1979, there were nearly 20 million manufacturing jobs, accounting for more than 20% of American nonfarm payrolls. But the number of factory jobs would subsequently trend lower. Manufacturing employment, which contracted during the recessions of 1981-82 and 1990-91, increased during the long economic expansions of the 1980s and the 1990s, but never back to the pre-recession levels. The first decade of the 21st century was particularly brutal for manufacturing employment as 5.8 million factory jobs disappeared between December 1999 and December 2009. Measured as a percent of the workforce, manufacturing employment had fallen to less than 9%.

Figure 1



Source: U.S. Department of Labor and Wells Fargo Securities

Figure 2



Source: U.S. Department of Labor and Wells Fargo Securities

But manufacturing employment has enjoyed a renaissance of sorts in recent years. The factory sector added more than 1.3 million jobs between the nadir in February 2010 and February 2020. The disruption caused by COVID caused manufacturing employment to nosedive in early 2020, but it has subsequently recovered roughly two-thirds of its pandemic-induced losses. Is the recovery in factory jobs over the past decade the beginning of a new sustained upswing that will last decades, or is it just a temporary head fake in the secular decline that has been underway since 1979? In an effort to answer that question, we start by analyzing the factors that led to the trends in manufacturing employment in the post-WWII era.

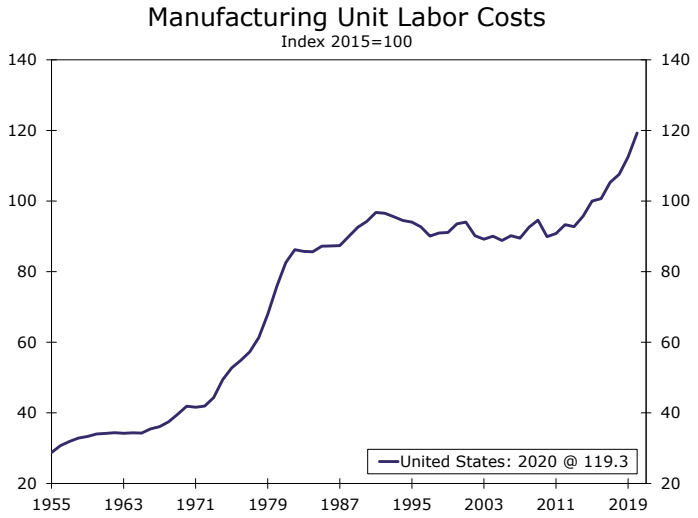
The Long Road to Restored Health in the Manufacturing Sector

The health of the U.S. factory sector deteriorated considerably in the 1970s.

The United States dominated the global economy in the late 1940s and most of the 1950s. Japan and much of Western Europe lay in ruins, and China was an economic backwater. The vast majority of the goods that Americans consumed were produced in the United States during those years, which helped to support growth in output and employment in the U.S. manufacturing sector. Strong growth in labor productivity—output-per-hour-worked in the factory sector grew at an annual average rate of 2.3% between 1955 and 1965—helped to keep a lid on unit labor costs (ULCs). As shown in Figure 3, ULCs in the manufacturing sector rose only marginally between 1955 (beginning of data) and the mid-1960s.

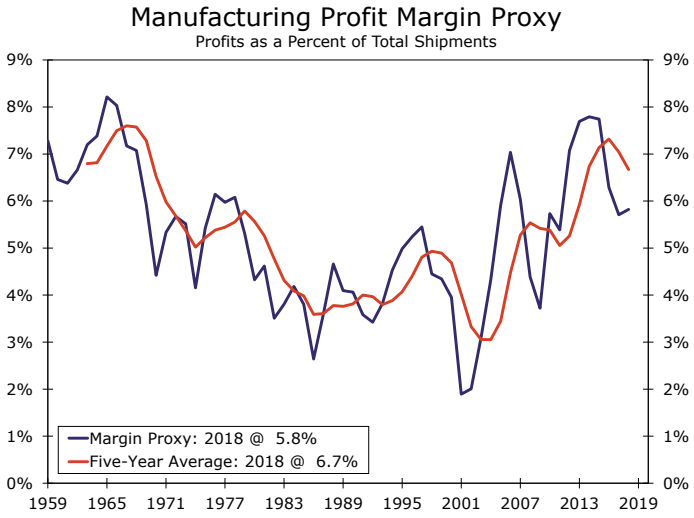
However, ULCs began to accelerate in the late 1960s as the unemployment rate fell below 4%. Although productivity growth in the manufacturing sector remained strong throughout the 1970s, the upward spiral in prices and wages that was set in motion by the OPEC oil price shocks led to a marked rise in ULCs during that decade. Annual compensation costs, which generally rose at single-digit rates through most of the 1950s and 1960s, were surging at double-digit rates by the end of the 1970s. The ratio of profits-to-shipments in the manufacturing sector, a measure of profit margins, trended lower (Figure 4). In short, the financial health of the U.S. factory sector had deteriorated, and American manufacturers started to take steps to restore it.

Figure 3



Source: OECD and Wells Fargo Securities

Figure 4



Source: U.S. Department of Labor, U.S. Department of Commerce and Wells Fargo Securities

The deep recession of the early 1980s had two notable effects. First, the downturn led to the loss of nearly three million factory jobs between late 1979 and the end of 1982. Manufacturing employment started to grow again in 1983, but there were still roughly 1.5 million fewer factory jobs at the end of the decade than there had been in 1979. Despite this net reduction in headcount, manufacturing output grew more than 20% on balance between mid-1979 and the end of 1989. As we will discuss further, manufacturers started to substitute capital for labor in the production process. Second, the severity of the recession broke the wage-price spiral, which led to a flattening in ULCs. Although ULCs rose again in the second half of the 1980s, they did so at a much slower rate than they had during the previous decade. Profit margins in the manufacturing sector, which had been trending lower, stabilized over the course of the 1980s.

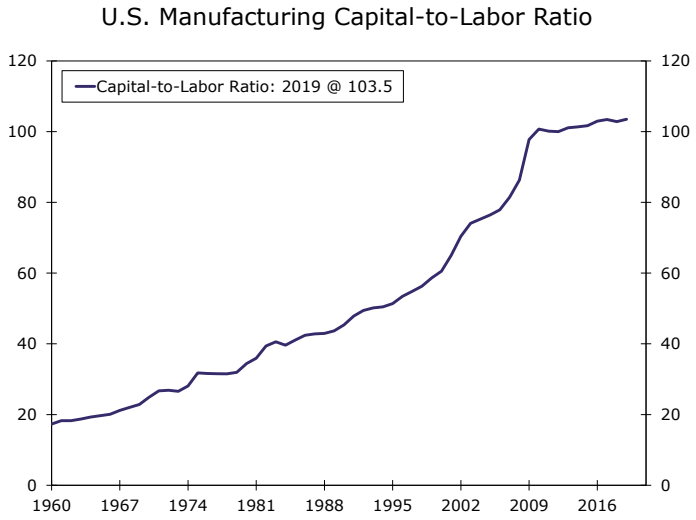
Employment in the factory sector trended lower in the 1980s and 1990s.

Manufacturers continued their rationalization efforts during the country's long economic expansion in the 1990s. Although manufacturing production rose nearly 60% between the cycle's trough in March 1991 and its peak in March 2001, factory employment was more or less flat on balance during this period. Manufacturing employment faced two major challenges during this decade. The first challenge was the North American Free Trade Agreement (NAFTA), which went into effect in 1994, that led some manufacturers to move production facilities south of the border. The second challenge was the rise of China as a low-cost production location.

In order to compete with low-wage countries, American manufacturers deepened their use of automation. The capital-to-labor (K/L) ratio in the American manufacturing sector has been trending higher for more than 70 years (Figure 5). That is, American manufacturers have been using increasing amounts of capital in the production process.[1] But the K/L ratio in the manufacturing sector began to rise markedly in the 1990s, and the upward trend in the K/L ratio became even sharper in the early years of the 21st century following China's entrance into the World Trade Organization (WTO) in 2001.

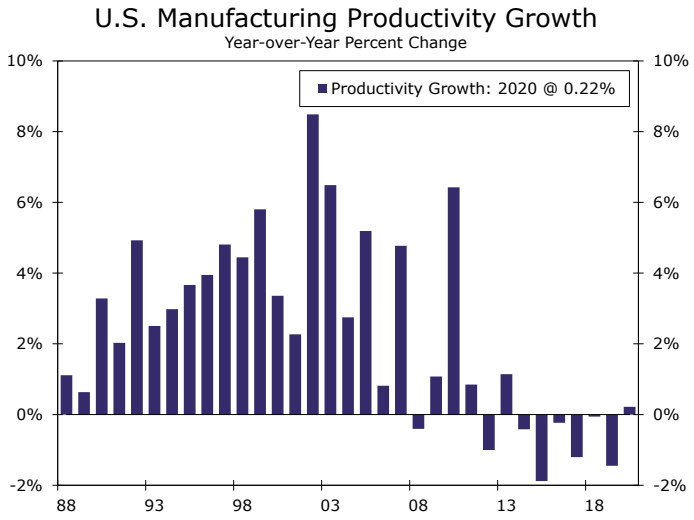
The K/L ratio in the manufacturing sector began to rise markedly in the 1990s.

Figure 5



Source: U.S. Department of Labor, U.S. Department of Commerce and Wells Fargo Securities

Figure 6



Source: U.S. Department of Labor and Wells Fargo Securities

Everything else equal, increases to the capital stock lift labor productivity. As shown in Figure 6, productivity growth in the manufacturing sector strengthened considerably in the 1990s and the first decade of the 21st century. Although the efforts to improve efficiency in the manufacturing sector led to a considerable decline in factory jobs between the late 1970s and the years immediately preceding the global financial crisis, the health of the manufacturing sector, as measured by the rise in the profits-to-shipments ratio, had improved (Figure 4).

Restoration of Health Has Stalled in Recent Years

Unit labor costs in the manufacturing sector have risen in recent years.

The record economic expansion of 2010 to 2019 was good for factory employment. As noted previously, payrolls in the manufacturing sector rose by more than 1.3 million jobs during the past decade, although factory jobs still account for only 8% of total employment. Perhaps producers had reached the point of diminishing returns to the displacement of labor in favor of capital, or perhaps there was a relative dearth of new automation technologies. Some academic researchers recently found that the shift in tasks away from labor and toward capital in the manufacturing sector, which began in the early 1980s and accelerated during the following two decades, had largely run its course by 2010 or so.[2]

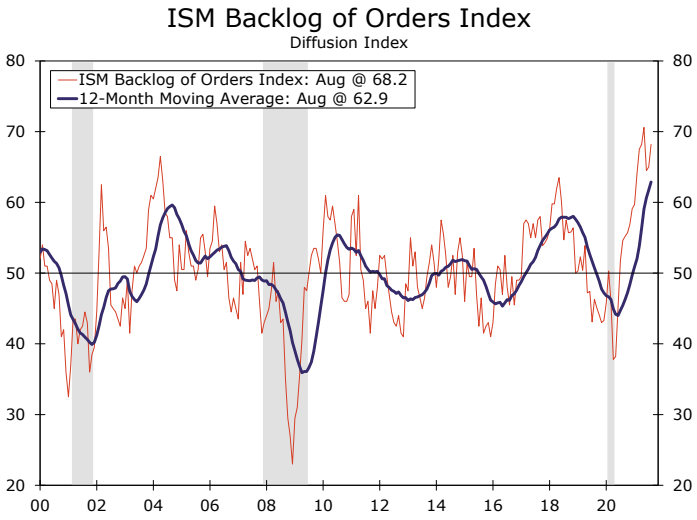
Whatever the reason, manufacturers ramped up hiring which led to a flattening in the K/L ratio during the past decade (Figure 5). Moreover, recent trends in some of the factors that led to the improvement in the sector's financial health may be flashing warning signs. Not only has the K/L ratio in the factory sector flattened, but productivity growth in the sector has been anemic in recent years (Figure 6). ULCs have trended higher (Figure 3), and profit margins in manufacturing appear to be narrowing again (Figure 4). Is another period of retrenchment in manufacturing employment at hand?

In our view, retrenchment does not seem likely, at least not in the near term. Although manufacturing output recently surpassed its level of February 2020, there are nearly 400K fewer individuals employed in the factory sector than there were prior to COVID. Furthermore, job openings in the manufacturing sector have skyrocketed in recent months and are currently approaching 900K (Figure 7). With order backlogs at an elevated level (Figure 8), it seems likely that manufacturers will continue to add to payrolls for the foreseeable future. But what happens when the disruptions that the pandemic has imparted to the economy pass? What is the outlook for manufacturing employment post-COVID?

Figure 7

Source: U.S. Department of Labor and Wells Fargo Securities

Figure 8



Source: Institute for Supply Management and Wells Fargo Securities

Will Manufacturing Employment Continue to Rise Over the Next Decade or So?

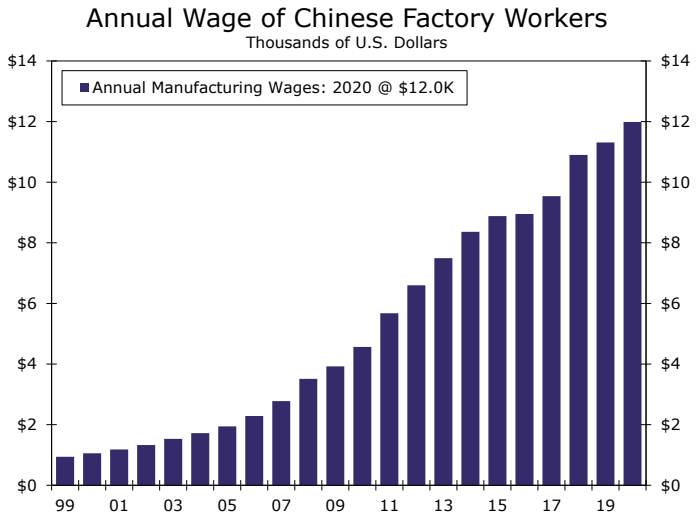
On one hand, there is reason to believe that growth in factory employment will remain strong after the disruptions from the pandemic dissipate because the global backdrop has changed in recent years. The liberalization of investment rules that occurred when NAFTA went into effect in 1994 allowed some manufacturers to move operations to lower-cost plants in Mexico, and the opening of China that played out in the 1990s and the early years of the 21st century accelerated the trend of foreign direct investment (FDI) by American manufacturers. The value that American manufacturers had invested directly in China stood at less than $6 billion in 1999 (historical cost basis). That value would swell roughly tenfold over the next twenty years to about $60 billion.

But intensification of the presence of American manufacturers in China in coming years does not seem likely, in our view. For starters, the cost of producing in China is not as low as it was two decades ago. Data on private sector wages in China are not readily available. But according to the National Bureau of Statistics of China, the annual wage paid to a worker in the urban non-private manufacturing sector rose from less than CNY8,000 (about $940/year) in 1999 to nearly CNY83,000 (nearly $12,000/year) in 2020 (Figure 9). Although Chinese factory workers are still paid significantly less than their American counterparts, the gap has narrowed considerably over the past two decades. In addition, the geopolitical tensions that have arisen in recent years between the United States and China may also weigh on the desire of American manufacturers to deepen their presence in China.

Some manufacturers may look to move production to other low-wage developing economies, such as Vietnam, Indonesia and India. But there are roughly 15 times as many people in China as there are in Vietnam, and the infrastructure in Indonesia and India is poor when compared to China. Some manufacturing may shift from China to some of these other developing economies, but a wholesale relocation does not seem likely, at least not in the foreseeable future. In short, American producers may choose to produce more output in the United States, which should support growth in factory jobs in the United States, everything else equal.

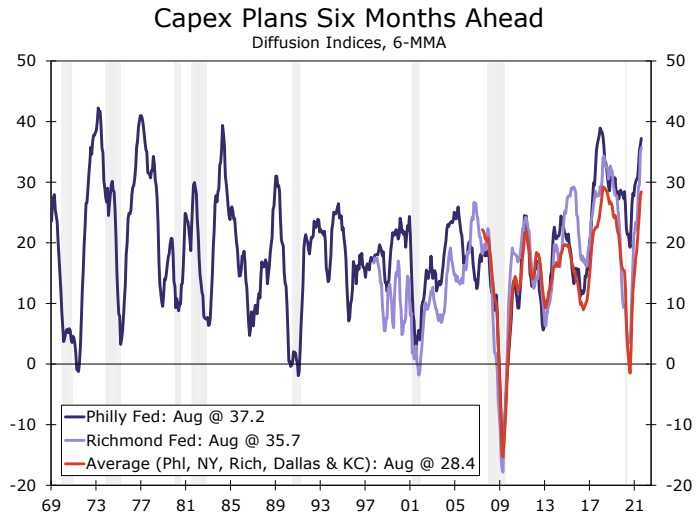
Intensification of the presence of American manufacturers in China in coming years does not seem likely.

Figure 9



Source: National Bureau of Statistics of China, International Monetary Fund and Wells Fargo Securities

Figure 10



Source: Federal Reserve System and Wells Fargo Securities

But everything else is not necessarily equal. American producers may choose to increase output via more capital-intensive means of production, which already appears to be occurring. Some regional PMIs include questions regarding the capital spending plans of manufacturers over the next six months. As shown in Figure 10, these indices currently stand at elevated levels. Of course, the apparent desire of American manufacturers to ramp up capital spending could be purely cyclical. After a burst of investment spending in the next year or so, capex could settle down to more pedestrian growth rates thereafter.

American producers may choose to increase output via more capital-intensive means of production.

But we suspect that another secular round of capital deepening in the manufacturing sector, which would reverse the flattening in the K/L ratio that occurred in the past decade (Figure 5), is in the offing in coming years. In an effort to restore the financial health of the manufacturing sector, American producers turned to more capital-intensive means of production beginning in the 1980s, which accelerated in the following decade. The net capital stock in the factory sector grew at an average annual rate of 2.2% between 1979 and 2007. But that rate of increase downshifted to only 1.3% per annum between 2010 and 2019. Although the shift in tasks in the manufacturing sector away from labor and toward capital stalled during the past decade, manufacturers may redouble their efforts in coming years to use labor-saving technologies in the production process. Indeed, it may take years of strong growth in capex to reverse the slowdown in productivity growth, the rise in unit labor costs and the narrowing of profit margins in the manufacturing sector that occurred during the past decade.

That said, employment in the factory sector likely will not come to a screeching halt either. After all, manufacturing employment rose during the long economic expansions of the 1980s and the 1990s, albeit at slower rates than previously. The trend increase in manufacturing production in the United States that has been in place for decades likely will continue in coming years, and producers will need to produce that output with some combination of labor and capital. The number of factory jobs grew at an average rate of 1.1% per annum between 2010 and 2019. Although we do not think that manufacturing payrolls will go into reverse, we believe that manufacturing employment will be hard-pressed to match those gains in the 2020s. In our view, manufacturers will favor capital relative to labor in the production process in coming years.

Endnotes

[1]The total capital stock includes equipment, intellectual property products and structures (i.e., non-residential real estate). (Return)

[2]Acemoglu, Daron and Restrepo, Pascual, "Automation and New Tasks: How Technology Displaces and Reinstates Labor," *Journal of Economic Perspectives* 33, Spring 2019, p. 3-30. (Return)

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