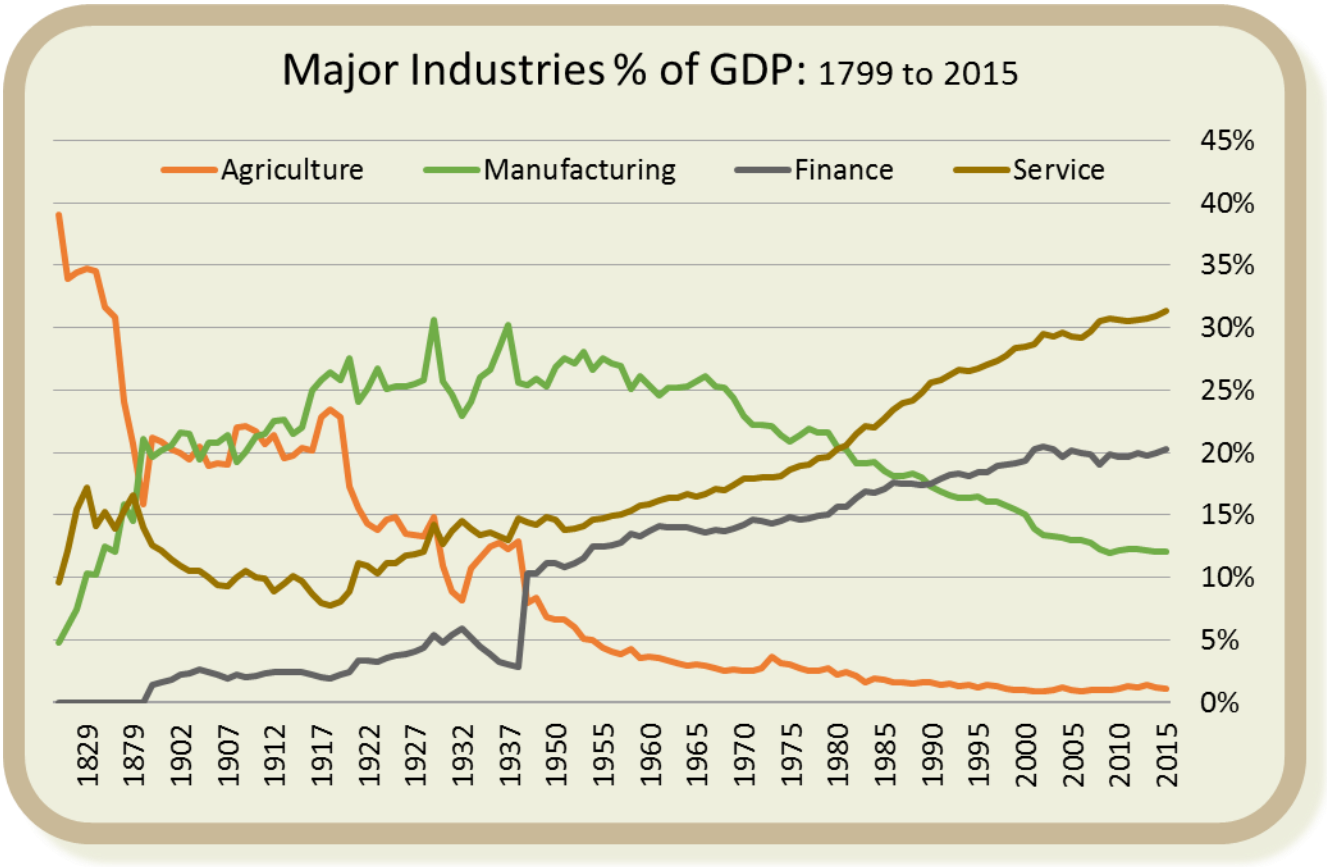
Manufacturing

Impact of a Declining Sector

By Kevin Chambers

At the end of April 2016, the Federal Reserve released the latest US industrial production output data. The headline number fell by 1.8% in the first quarter of 2016. This is the largest one-quarter drop in a non-recession year since 1919 (Morath, 2016). This announcement sparked many headlines questioning the future of American manufacturing and the importance of industry in the US economy.



Important Sectors in the US Economy:

The story of American industry follows a long-term trend. Leading up to and through the early 1800s, agriculture dominated the American economy. About 40% of the total output of goods in the US came from agriculture. Over time, the value of agriculture has fallen off. From most of the 20th and 21st centuries, it has contributed less than 10% to GDP.

The shift away from agriculture was spurred on by the industrial revolution in the late 1800s and into the 20th century. At its height, manufacturing made up over 30% of US production and was the largest sector by 15%. Starting at around the 1950s, US manufacturing started a gentle declining trend that has continued today.

The shift away from agriculture and manufacturing has allowed a growth in the service and finance industries. Manufacturing in 2015 makes up about 12% of GDP while the service industry and finance making up 31% and 20%, respectively. In fact, the services industry passed manufacturing as the largest sector in the early 1980s.

Global Perspective:

Even though the US manufacturing sector is declining, the US Economy is still the largest in the world. In other words, the US is still one of the world's dominant manufacturers. Other than China, which manufactures about $3 Trillion worth of goods a year, the United States is heads and shoulders above the rest of the world. Japan and Germany are third and fourth, but both produce under half of what the United States does. Although many third world countries are perceived to shoulder the lion share of manufacturing, they are not in the top 10. Only India and Russia make the list. The rest of the major manufacturers in the world are developed countries.

However, in terms of importance to the overall national economy, the manufacturing sector plays a less significant role to the US economy than manufacturing plays in national economies of other countries. In countries like China and Korea, manufacturing makes up nearly a third of their respective economies. The manufacturing sectors of Germany and Japan attribute about 20% to their economies. As the graph illustrates, the US only has a 12% allocation to manufacturing in their economy.

Source: United Nations, Levinson, 2016

Causes of Manufacturing Decline:

Globalization:

The decrease of manufacturing in the US can be partially attributed to globalization. Many US companies have utilized the "shrinking" of the world to move jobs overseas. This is often a political talking point. In 2010, China became the largest manufacturing country, surpassing the United States (Levinson, 2016). The ease and availability of transporting products around the globe have decreased the economic viability of producing products domestically.

Development:

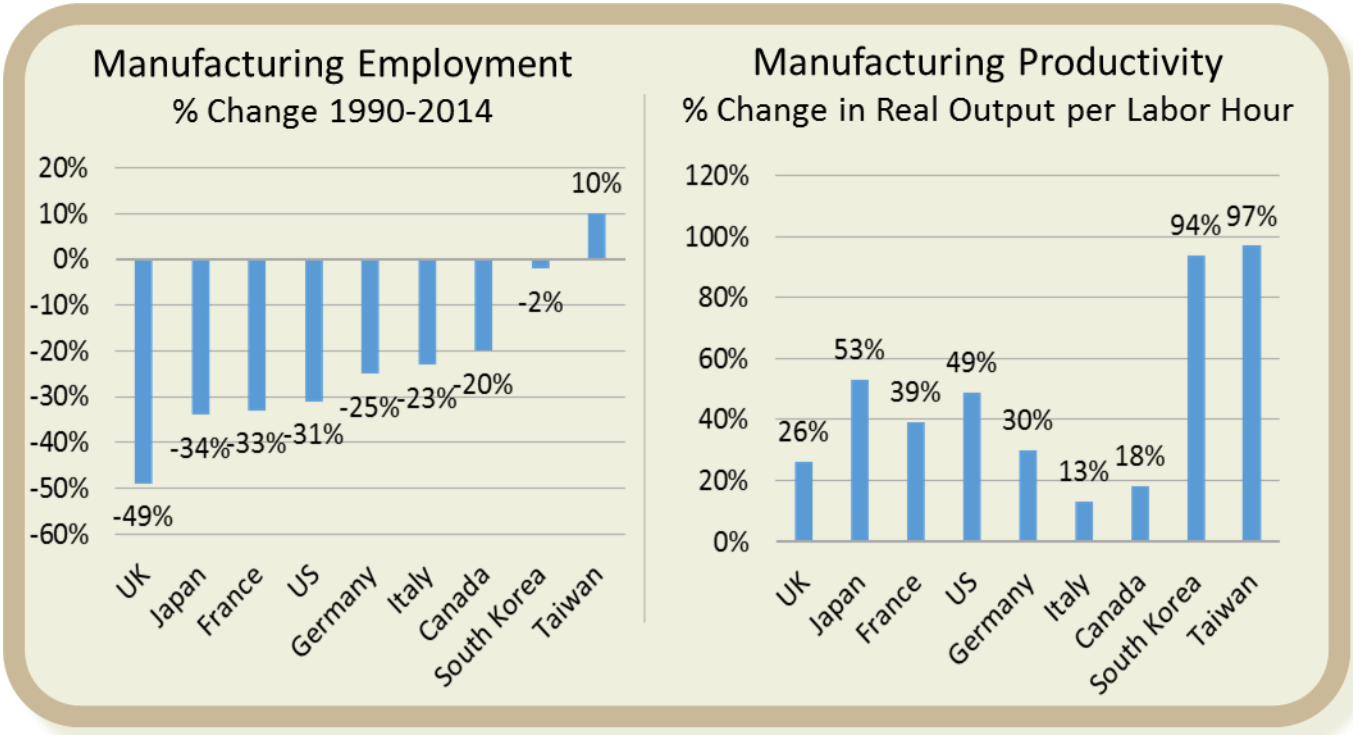
In a New York Times piece earlier this year, Professor Dani Rodrick from Harvard's Kennedy School noted manufacturing has unique advantages for certain countries. It can quickly employ large numbers of unskilled workers and it isn't constrained by a small domestic market. Dr. Rodrick commented, "Setting up a factory to make toys puts you on a productivity escalator in a way that traditional agriculture and services didn't do" (Porter, 2016). However, as a country develops, workers become more skilled and gravitate to higher-paying jobs in the finance and service industries.

The value in products shifts to intellectual property instead of hard labor. The greatest value in a product, such as the iPhone, is in the design, brand, and technology, not the production of the product. The United States is an example of how an economy can transition. Look at the most valuable US companies. Apple, Alphabet (parent company of Google), and Microsoft are all companies built on engineering and design expertise that have exported most of their production to overseas.

Global Productivity Increase:

One of the main factors influencing the decrease in manufacturing jobs in the United States is that manufacturing around the world has increased in productivity. One worker today, with the help of technology and higher skill levels, can produce much more than a worker even 20 years ago. When adjusted for inflation and including two major market corrections (the Dotcom Bubble and Mortgage Crisis), US manufacturing productivity has increased by 70%. Since the bottom of the most recent crisis, 2009 to 2016, productivity has risen 30%.

This is true around the world. Manufacturing employment in most developed economies has decreased notably over the past few decades, yet productivity has increased significantly. Since 1990, manufacturing employment in the UK has decreased by almost 50%. Meanwhile, the UK's manufacturing productivity has increased by 26% since 2002. The story is similar in Japan, France, Germany, and the United States.

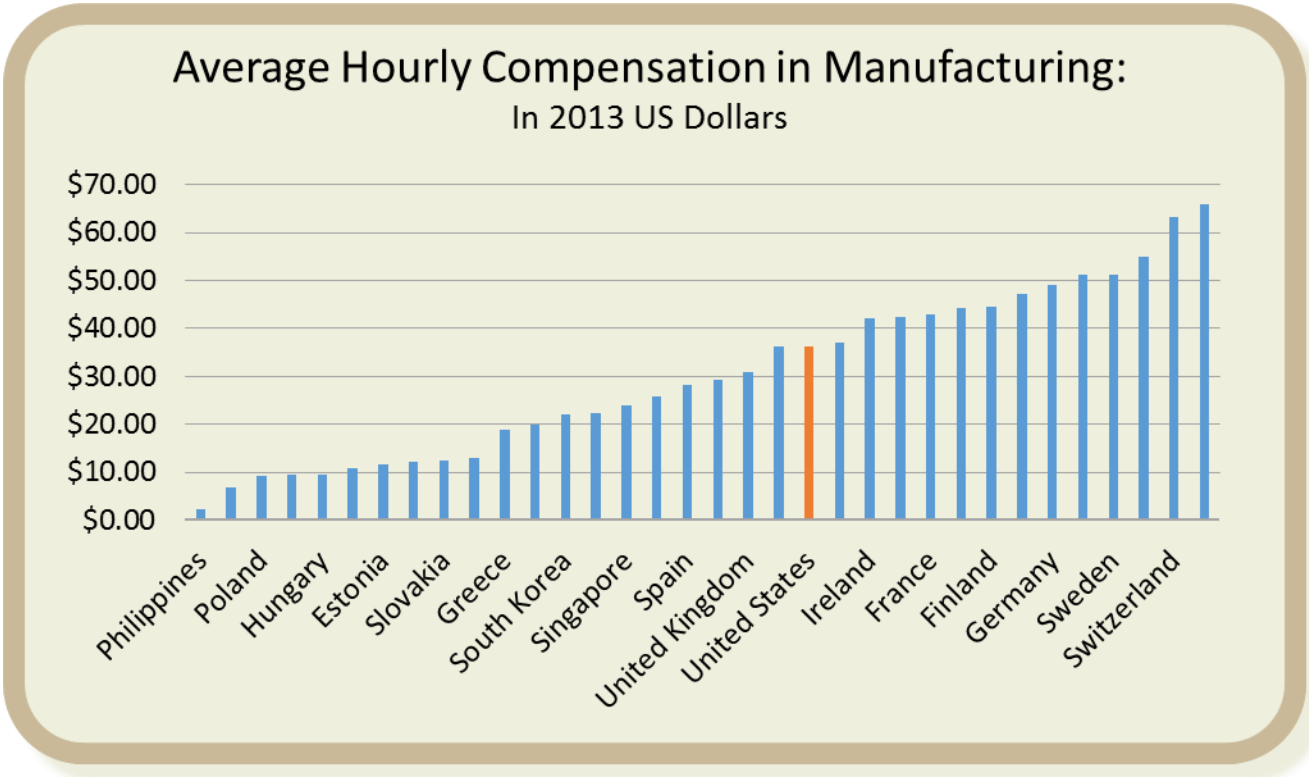


This is a hallmark of increased efficiency worldwide, which has led to a global decrease in the demand for manufacturing labor. This is not a problem unique to the US; finding a job in manufacturing is getting more and more difficult worldwide. As quoted in the New York Times (Porter, 2016) Joseph Stiglitz, a Nobel awarded economist:

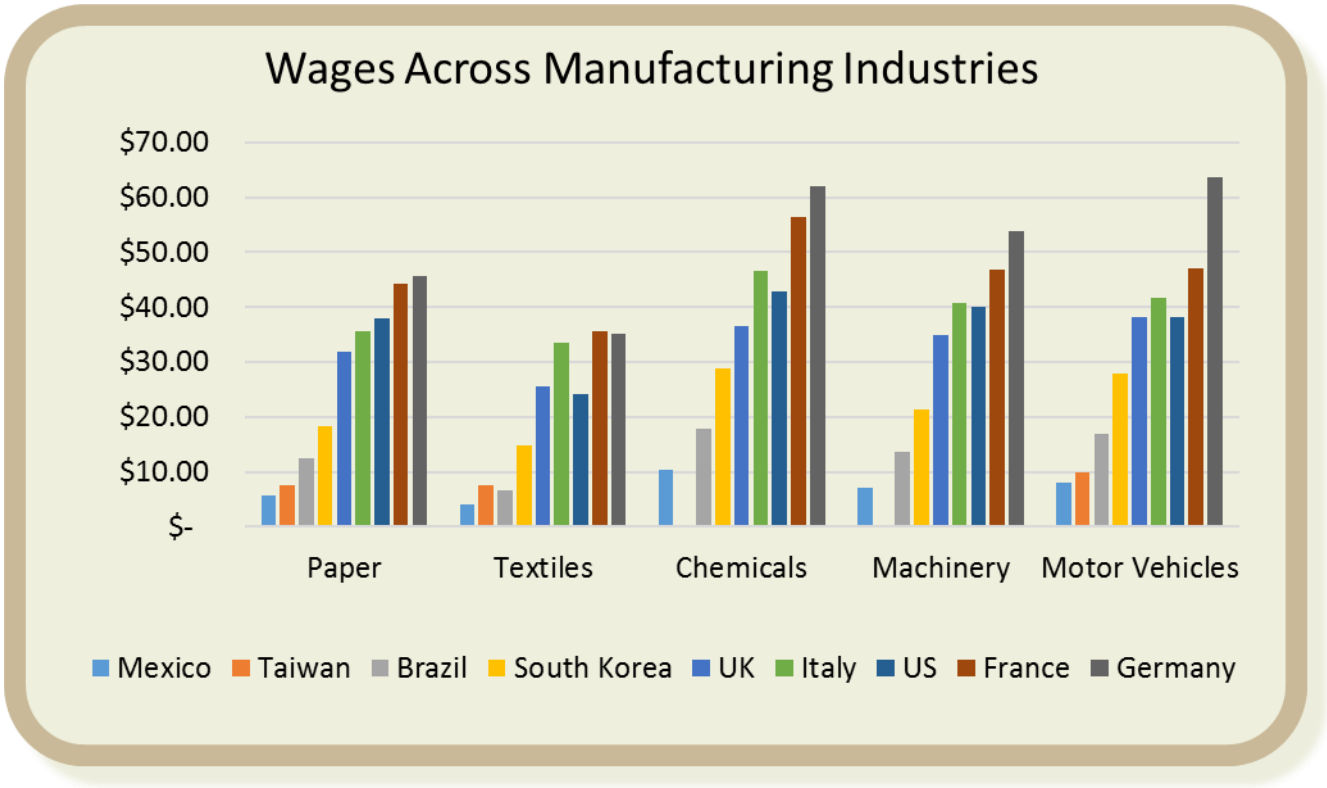
> "The observation is uncontroversial. Global employment in manufacturing is going down because productivity increases are exceeding increases in demand for manufactured products by a significant amount."

Cost:

Finally, the most often quoted reason by companies moving manufacturing abroad is that the US is too expensive. A living wage for families in the US demands a higher salary than in other countries. The United States is one of the most expensive places to manufacture goods. The average hourly total compensation, which includes pensions, disability insurance, sick leave, health insurance, severance pay, other social insurance expenditures, and taxes on payrolls or employment, is $37.71. The Conference Board (Conference Board, 2015) completed research in 34 countries. The US ranked 21st out of 34. All of the countries with higher manufacturing wages were in Europe with the exception of Australia. Therefore, the United States is not the most expensive place to manufacture goods, but it is much higher than the developing world. There is somewhat unreliable data for comparing these wages with China and India, but estimates put the average wage in China at around $4 and India around $1.60 (Levinson, 2016).



The wages also vary widely between different industries. For example, a US worker at a sawmill can expect to make around $17 an hour, whereas a laborer building airplanes can expect to make closer to $40. Higher tech industries that require a higher level of skill and training have higher wages. These are also the types of manufacturing that are more common in developed countries. The United States makes more pharmaceuticals, communications equipment, medical, aircraft, military equipment, and other high-value products than most of the other OECD countries (Levinson, 2016). Some of the higher wages in developing countries can be attributed to this; however, the wage disparity exists across most major manufacturing industries.



Future of American Manufacturing:

It is unlikely that the US manufacturing sector will ever rebound to its former high. The US economy has fully shifted to a service based economy, and there is no indication that the trend will reverse. The millennial workforce is 29% of the total, but they account for only 22% of the manufacturing jobs (McGill, 2016). Manufacturing laborers are aging and the younger generations are not qualified, unwilling, or the jobs are replaced by higher efficiency. Global production is increasing, and we are getting more efficient. Less labor is required to create products. Also, a lot of our production is shifting into the digital landscape. Some of our biggest companies don't actually make many

physical products anymore, but applications and software dominate the marketplace. American companies are looking to produce higher value goods, and the labor force needed to build products is more specialized and highly trained. Although those jobs offer higher wages, there is a smaller and smaller place for the poorly educated, yet hard-working American laborer. Those jobs are being sent overseas.

Through the summer of this election year, there is sure to be numerous talks surrounding American manufacturing. The photo ops with candidates in factories and talking with blue collar Americans will grace homepages and front pages. Even so, political candidates from all parties will hopefully realize that the idea of American manufacturing as the backbone of rural communities is an outdated construct. The future of America is in higher value manufacturing and service. In 2014, over 50% of all factory jobs required some sort of post-secondary education. We need to stop trying to bring back the jobs of the 1970s and train our workforce for the jobs of 2020 and beyond. We need to face the reality that American manufacturing, as our country has known it, is not coming back.

Works Cited:

Conference Board. (2015). International Comparisons of Manufacturing Productivity and Unit Labor Costs Trends, 2014. Washington DC: Conference Board.

Levinson, M. (2016). U.S. Manufacturing in International Perspective. Washington DC: Congressional Research Service.

McGill, A. (2016, April 28). The Impossibility of Reviving American Manufacturing. The Atlantic.

Morath, E. (2016, April 27). America's Industrial Downturn Won't Throw the U.S. Into Recession, Probably. The Wall Street Journal.

Porter, E. (2016, April 26). The Mirage of a Return to Manufacturing Greatness. The New York Times.