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Do Not Blame Trade for the Decline in Manufacturing Jobs

By Stephen J. Rose

Manufacturing jobs are prized because many people think that economics is about producing goods and because manufacturing companies often provide well-paying jobs for workers without a college degree. Further, large manufacturing plants have been the anchor for many communities by bringing many dollars into the region that are spent locally by their employees.

High pay for manual manufacturing jobs followed the union organizing successes in the 1930s, which was followed by strong economic growth after World War II. The 30 years after World War II were economically strong across all high-income countries—the French called this the "30 glorious years."

U.S. manufacturing workers were in a unique position to obtain wage gains and better benefits from 1946 through the 1950s. First, industrial unions had wide public support. Second, the United States' industrial competitors in Europe and Japan faced destroyed infrastructure and a reduced workforce due to the deaths and debilitating injuries of many prime-age workers during the war. Third, there was a virtuous cycle of economic growth that led to more growth. U.S. firms faced high demands from citizens who were starting new families (the baby boom started in 1946) and in need of new houses, cars, and appliances.

By the mid-to-late 1960s, this prized position started to whittle away. First, Europe and Japan narrowed the productivity gap and made cars that were attractive to many Americans. Second, rising inflation was driven by an expansionary fiscal policy in fighting the Vietnam War without cutting other domestic spending or raising taxes. Third, many union contracts had cost-of-living adjustment provisions that increased earnings as inflation increased. Fourth, U.S. companies embraced automation and adopted a more oppositional stance to union demands. Further, many low-paying manufacturing industries changed locations within the United States and, starting in 1964, changed to companies in Mexico that allow factories to be largely duty-free and tariff-free –called "maquiladoras."

There are turning points in history in which recent events may combine with older forces to produce large changes; the early 1980s was one of these periods. The events leading to rising inequality, more globalization, and increased reliance on market forces (sometimes called "neoliberalism") were:

1. The stagflation of the 1970s, which contributed to high interest rates and a deep recession (when the economy recovered, firms had the opportunity to start anew);

2. The IT revolution, which led to the invention of the 1981 IBM PC and an explosion of new products and new ways of organizing office work;

3. The evolution of containerization, which helped organize production within global supply chains; and

4. Added impetus for states and companies to become more anti-union, courtesy of unions weakening for decades and President Reagan's breaking of the air traffic controllers' strike.

This study will assess the employment and income effects of trade on U.S. workers, but it is important to remember that many low-income countries have had spectacular growth by selling goods to the United States and other high-income countries. First, the four Asian tigers—South Korea, Taiwan, Hong Kong, and Singapore—started exporting cheap manufactured products and then graduated to more complex goods. Starting in 1960, their GDP per person grew hundreds of percent, joining the ranks of high-income countries. Decades later, China and India followed the same path. These huge countries could not elevate everyone to middle-class living standings, but hundreds of millions of people exited extreme poverty as a result of this growth. Now, Vietnam and other low-income countries are trying to do the same thing. The fast growth of low-income countries that followed the adoption of export-oriented economic policies was documented in an International Monetary Fund paper that followed the income effects of greater globalization for 147 countries from 1970 to 2014. The data showed that the low-income countries that increased their global economic connections had higher growth rates than low-income countries that did not increase their global connections. The low-income countries increasing their global connections also had higher growth rates than medium- and high-income countries that increased their global connections.

After 1982, there were 25 years of moderate and mostly steady growth under Ronald Reagan, George Bush, Bill Clinton, and George W. Bush—sometimes called "the great moderation" because there were long periods without a recession. The financial crisis of 2007–08 led to a deep recession. Without prosperity, the rise in inequality that started in the 1980s became more of a public issue, especially as it related to the status of the middle class. As many manufacturing firms closed, a prominent explanation for these problems was outsourcing of production to low-income countries that paid very low wages. In particular, the U.S. trade deficit grew substantially after China's entry into the World Trade Organization in 2001.

Presidents Obama and Trump prioritized creating more manufacturing jobs, but neither succeeded. Trump showed that it is easier to threaten a trade war than it is to win one. At best, Trump's use of tariffs on many goods from many countries was a wash, as the U.S. trade deficit as a share of GDP was constant over the Trump era. Instead, American companies and consumers paid almost all of the tariffs, economists found a small loss of jobs, and farmers who faced retaliatory tariffs on their goods required tens of billions of dollars of assistance to avoid bankruptcy.

Oddly, people who blame outsourcing as the problem have not explained why neither the policies of a liberal Democrat nor a conservative Republican increased manufacturing employment. This paper will explain this irony by showing that productivity is the main cause of declining manufacturing employment.

Innovation is a good thing and raises our standard of living. However, as economist Joseph Schumpeter noted in 1942, "creative destruction" is the essence of capitalism, with new innovations replacing the old and leading to a massive gain in output per worker. The starkest example of this is the declining share of agriculture employment, from 80 percent in 1800, to 40 percent in 1900, to just over 1 percent in 2019.

The proponents of limiting imports see the loss of firms and jobs and want to protect U.S. workers. Blaming imports is the easy way forward. As will be shown below, the majority of job losses are due to the actions of U.S. firms, not imports. Trade skeptics do not realize how small the net employment effect of trade is, especially since they tend to ignore the employment gains due to rising exports. Also, they do not account for the employment loss from the retaliatory tariffs that other countries will impose, as happened with China and the European Union in response to Trump's tariffs. Finally, they do not understand the workforce of today—they overestimate the number of high-paying blue-collar manufacturing jobs and have a mistaken view that most service jobs are low-paying "hamburger-flipping" jobs.

Evolution of Manufacturing Employment

The share of manufacturing employment in the United States of all non-agricultural workers rose steadily in the twentieth century, reaching a peak of 38 percent during World War II. It was still at 32 percent in 1955 but steadily declined to 8 percent by 2019 (the data after 2019 are skewed by the pandemic). Half of the decline to 20 percent occurred during a period when the average trade balance as a share of GDP was zero (the values of imports and exports were almost the same). The manufacturing employment share fell another 12 percentage points, while the average trade balance was minus 2.6 percent per year (imports greater than exports).

Instead of using the common approach of changing employment shares, people who highlight the importance of manufacturing use the absolute numbers of workers. By this measure, the maximum number of manufacturing workers was just over 19 million in 1980; by 2000, this number declined by 2 million, and another 5.5 million were lost by 2019. In contrast, total employment grew by 60 million from 1980 through 2019.

The main advantage of capitalism is that it incentivizes innovation and better methods for producing outputs and leads to more output with fewer workers. Manufacturing industries that produce goods are much more likely than service industries to have high productivity gains. For example, the American Iron and Steel Institute **reports** that it took 10.1 hours to produce a ton of steel in 1980 versus 1.5 hours today. As a whole, all manufacturing industries did slightly worse, as output per hour grew by just under 600 percent.

In terms of location, manufacturing jobs changed dramatically across the eight census regions. In 1960, the New England and Mid-Atlantic states had the highest and third-highest concentration of manufacturing employment—42 and 37 percent, respectively. In contrast, by 2019, these two regions had a lower-than-average proportion of manufacturing workers.

The East South Central (Alabama, Kentucky, Mississippi, and Tennessee) and the West North Central (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota) regions had an above-average manufacturing share in 2019, but below-average manufacturing shares in 1960. The East South Central region benefited from two waves of manufacturing employment—the movement of firms from New England and the Mid-Atlantic in the 1970s and 1980s and the arrival of many foreign automotive firms opening factories in the United States after 1980.

The movement of manufacturing employment across states does not support the primacy of manufacturing industries as the key to a strong economy. Indeed, the two regions with the largest manufacturing share loss—New England and Mid-Atlantic—had 6 of the top 10 states in terms of GDP per capita (and this does not include Washington, D.C., which has the highest GDP per capita).

Understanding Money Flows between Countries

Total trade, as measured by the combined values of imports and exports as a share of GDP, did not top 10 percent until 1973. It rose steadily to 20 percent in 1996, and since then it has fluctuated between 20 and 25 percent (the 2019 level was 22 percent).

Balanced trade, or when the value of imports and exports of goods are around the same, should have small effects on manufacturing employment. This was the case for the combined years from 1960 to 1983. Nevertheless, many people blamed imports, such as Japanese cars, for leading to job losses in manufacturing. Employment due to exports was ignored as people focused on the closing of manufacturing firms and on imports taking market share away from U.S. companies. The pressure was high enough that foreign automobile companies opened production facilities in the United States and provided jobs that the anti-trade critics were trying to create. While these facilities were not unionized, their pay and benefits were close to United Auto Workers contracts. These firms wanted the flexibility to make changes without the burden of union agreement.

When imports are consistently greater than exports by a significant amount, then international trade leads to manufacturing job losses. This was the case from 1999 to 2019, when the deficit reached a maximum of 5.6 percent of GDP but never dipped below 2.7 percent of GDP.

The trade of goods and services, however, is just one component of international money flows. The second component consists of repatriated profits and interest payments from foreign assets, while the third component involves capital investments (e.g., establishing a new foreign facility, investing more in an existing facility, or buying foreign stocks and bonds). For each component, money flows in and out of the country. The combination of the pluses and minuses (called the balance of payments) must equal zero over the course of every year for every country. Temporary imbalances are managed by the Geneva-based Bank of International Settlements, and these imbalances are corrected in the marketplace by changes in the value of a country's currency.

The world financial system can be very counterintuitive. As noted, the United States has been running trade deficits for many years. For each year, the negative trade balance has been offset by positive balances of the other two components. Conversely, China runs trade surpluses that are offset by investing money in the United States (often buying government debt instruments). Without this outflow of capital, its currency would tend to rise in value, which would decrease exports and reduce employment.

China is different from the United States and other high-income countries in that it has a huge savings rate (**45 percent** versus the 18 percent in the United States in 2019) to finance its high sustained growth rates. This means that China has relatively limited internal consumption demand and relies much more on demand for its exports. Further, China controls the movement of its currency by using its dollar reserves to purchase its currency. While many economists believe the value of the RMB roughly approximates what it would be if it were allowed to float, this was not always the case, as the Chinese currency was for many years undervalued.

The effects of U.S. positive foreign investment and positive net investment income are not clear. On the one hand, extra capital could lead to lower interest rates, which could lead to more company investment. On the other hand, this is not a large amount, and savings and investment decisions may not be affected by this inflow. This analysis assumes that these positive flows will have no positive effect on manufacturing employment. Consequently, manufacturing employment losses due to trade are only determined by changes in imports and exports.

Effects of Trade on Manufacturing Employment

METHODOLOGY

The U.S. economic statistical agencies—the Census Bureau, the Bureau of Economic Analysis (BEA), and the Bureau of Labor Statistics (BLS)—collect and publicize a remarkable amount of information. In terms of industries, the BEA uses the 2012 North American Industry Classification System (NAICS) code structure, from which data are generally available at four levels of detail: sector (21 industry groups), summary (71 industry groups), underlying summary (138 industry groups), and detail (405 industry groups). Data come from Input-Output (I/O) tables and trade and employment data for each of these "industries." Associated with each industry is a specific product, and the names of the industries and the products are the same. Each company division is allied with a specific product of an industry group. The trade and the I/O tables use NAICS-defined industries. In contrast, data on earnings come from the Current Population Survey (CPS), which uses an industry coding based on a different approach. There is a lot of overlap, and this analysis has created a crosswalk where the categories are different.

This study follows the 22 manufacturing industry groups at the NAICS summary level. Imports are assumed to have a negative employment effect, while exports lead to higher employment. To estimate the employment effect of trade from 1991 to 2019 requires multiple steps (1991 is the beginning of large yearly trade deficits; 2019 avoids the effects of the pandemic). First, over these years, manufacturing imports increased by $1.9 trillion, while manufacturing exports grew by $1.4 trillion. This represents a change in the demand of each industry (and yes, each industry cluster has both imports and exports). Second, using the total requirements table of the input-output tables, changes in the monetary flows for imports and exports for each industry can be calculated. Third, the number of workers positively and negatively affected by trade for each industry is computed by dividing the changes in imports and exports by the BLS table of output per worker for these industries.

Using the above methodology, this study finds that 8.9 million manufacturing workers were displaced by imports from 1991 to 2019 and that 5.4 million workers were needed to produce the growing exports. The net effect of trade saw a loss of 3.5 million workers. Other researchers using different techniques and different time periods report similar results.

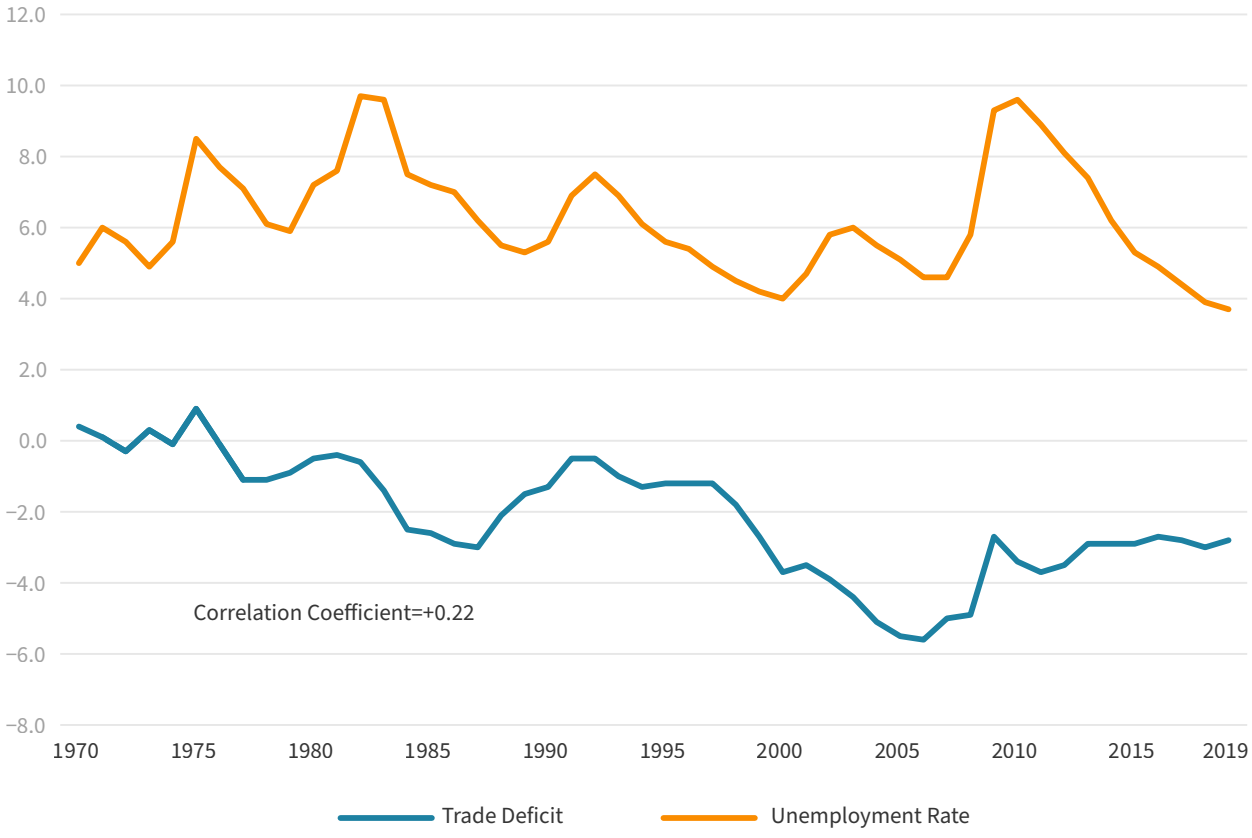
It is important to put these numbers in context. This number is not large when compared to the size of the labor force (over 150 million) or the growth in employment by 40 million jobs from 1991 to 2019. The net 3.5 million jobs lost in manufacturing do not affect the 40 million jobs gained over these years because they are determined by larger macro factors, government spending, taxation, and Federal Reserve actions.

Finally, the U.S. labor force has many workers entering and leaving jobs—some voluntarily and some involuntarily. According to the BLS's Job Openings and Labor Market Turnover Survey, 36 million workers voluntarily leave their jobs each year, and another 24 million workers were either laid off or discharged

per year from 2000 (the first year of the survey) to 2019. In contrast, the yearly manufacturing loss due to imports was 310,000 a year (this number would be 120,000 jobs lost per year if the gains from more exports were included). In other words, the number of workers who involuntarily lost jobs each year from U.S. employers was 70 times more than the job losses from imports. In the sea of employer hirings (over 3 million per month), many displaced manufacturing workers find jobs, although few will be at or above their former wage rate.

There are three other data analyses that tend to show that trade deficits do not have a large effect on total employment. First, Figure 1 tracks the deficit as a share of GDP along with the yearly average unemployment rate from 1970 to 2019. If trade has a negative effect, then the unemployment rate rises when the trade deficit increases, and the unemployment rate falls when the trade deficit gets smaller. The movements of the two lines in Figure 1 show no consistent patterns. For example, the right end of the chart (2010–2019) shows a declining unemployment rate and little change in the size of the trade deficit. Another example is the first 10 years of the figure, where the unemployment rate is rising when the trade deficits are flat.

Figure 1: Trade Deficit (as Share of GDP) and Unemployment Rate, 1970–2019



Source: Federal Reserve Bank of St. Louis available at: https://fred.stlouisfed.org/graph/?g=1Gor and Bureau of Labor Statistics available at: https://data.bls.gov/timeseries/LNU04000000?years_option=all_years&periods_option=specific_periods&periods=Annual+Data.

Second, between 1973 and 2012 (BLS discontinued this series in 2012), manufacturing's share of total employment declined in 15 developed, industrialized countries. In 1973, 40 percent of the jobs in Germany and 24 percent of the jobs in the United Kingdom were in manufacturing; in the other 13 countries, manufacturing industries employed just over 25 percent of many countries' workforces. By 2012, those with the

biggest declines were the United Kingdom (24 percentage points), Germany (19 percentage points), and the United States (16 percentage points). Italy and Japan had small declines from a relatively high level, while Canada had a small decline from an already low level. It should be noted that many of these countries were running trade surpluses while their manufacturing employment shares were declining.

In terms of absolute shares in 2021, Australia, the United Kingdom, the United States, Canada, and the Netherlands had the lowest absolute shares in 2012 (between 9.7 and 10.8 percent of employment). At the high end of the scale were Germany (20.5 percent), Italy (19.5 percent), and Japan (17.3 percent).

Third, the notion that the United States can continue to run trade deficits is incomprehensible for many people. In 1988, Harvard finance professor Benjamin Friedman in his book *Day of Reckoning* wrote that the United States would have serious negative economic consequences because it had five years of trade deficits that averaged a bit less than 2 percent of GDP. He argued that the United States would have to pay off the principle and the interest in the 1990s, which would lead to a negative capital balance. This would require the value of the dollar to decline so that exports would increase, and imports would decrease to maintain the United States' balance of all payments.

None of these things happened. Instead of negative consequences, U.S. GDP growth in the 1990s was higher than GDP growth in the 1970s, 1980s, and 2000s. Furthermore, between 1994 and 2019, the trade deficit was never less than 2 percent of GDP.

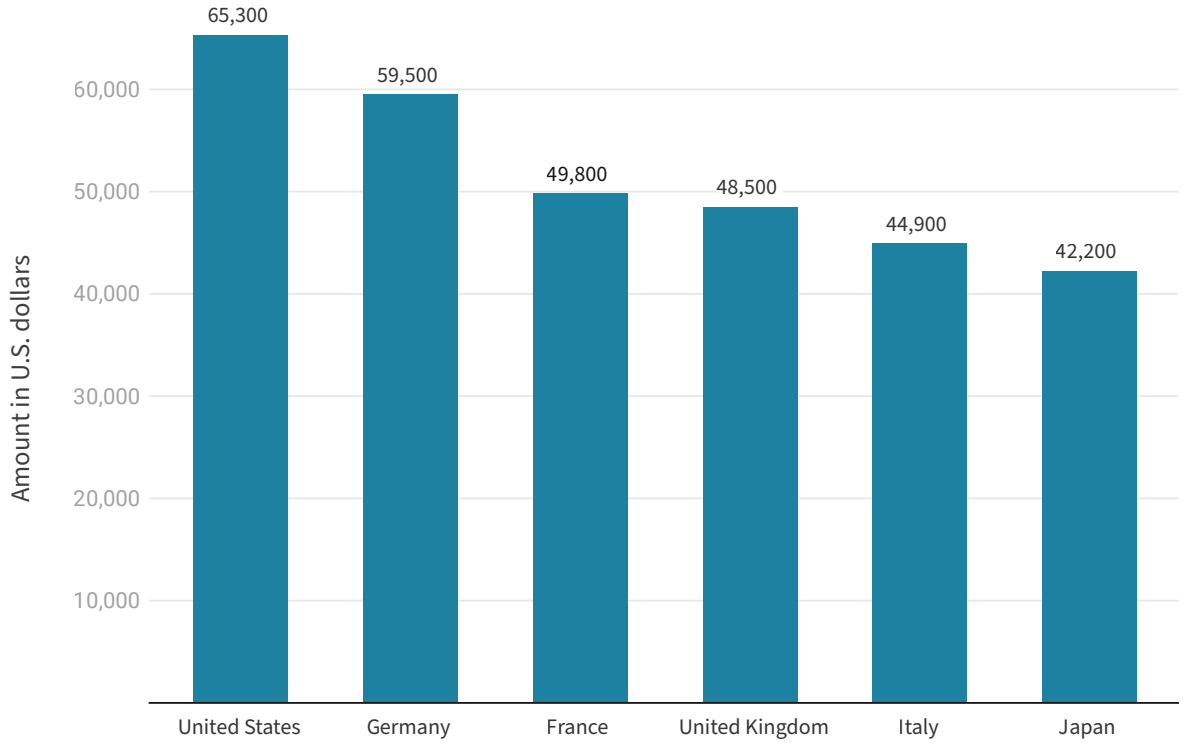
This **continued imbalance** was offset by massive inflows of foreign capital. As of the fourth quarter of 2020, foreigners held $41 trillion of U.S. assets versus the $27 trillion of foreign assets held by the United States. One would think that a $14 trillion net international debt would lead yearly investment balances to be negative as well, yet, this has not played out. The United States gets a higher rate of return on its foreign assets than foreigners get on their U.S. assets. The difference is so large that the United States has had positive investment income in every quarter during these years.

So, the combined transaction is that the United States runs yearly trade deficits offset by yearly capital flows that might have positive effects on its economy. Other countries hold dollars and U.S. treasury bonds that provide them with reserves that can be used in case there is a run on their currency. During the post-1982 years (the World Bank data start at 1990), there were multiple economic downturns, but none were instigated by trade: the savings and loan debacle from 1986–95, the dot-com stock crash of 2002, the financial crisis of 2007–08; and the pandemic of 2020.

For the United States on a macro level, its GDP per capita growth did not seem to be affected by these trade deficits. According to World Bank **data**, the United States and the high-income Western European countries had virtually the same growth rate from 1991 to 2019, at 160 percent (Japan's growth rate was only 107 percent). But as Figure 2 shows, the United States had a higher GDP per capita than the next five largest high-income countries. Most of the Nordic countries had a GDP per capita between $55,000 and $60,000; the exception was Norway, which has large oil reserves and a GDP per capita of $68,000.

Of course, GDP per capita is a crude measure, and anti-trade analysts are quick to say that Americans with mainly low and moderate incomes are negatively affected by trade. The popular perception that the bottom 50 percent of the income distribution has lower real incomes today than they had in 1979 is supported by the updated work of Thomas Piketty and Emmanuel Saez's original 2003 groundbreaking **paper**.

Figure 2: GDP per Capita in the Six Largest Market Economies, 2019 (U.S. PPP)



Source: Organization for Economic Cooperation and Development available at: https://stats.oecd.org/index.aspx?DataSetCode=PDB_LV.

Over the last 20 years, there have been many studies on income distribution using different methods and different sources. A 2018 paper shows that the growth estimates of median real incomes of Americans between 1979 and 2014 of six different studies ranged from minus 8 percent to plus 51 percent. The low finding was based on the original Piketty and Saez analyses, while the high finding comes from the Congressional Budget Office. The big surprise is that the study that shows that real median income grew by 33 percent is from Piketty, Saez, and Gabriel Zucman. When queried by a *Washington Post* journalist, Saez said that they only stood behind the 33 percent growth figure. The same 2018 paper explains why different studies get different results and makes a meta-analysis estimate of just under 40 percent median income growth over these years.

Finally, a 2015 paper reported that male compensation grew by 38 percent from 1979 to 2013. There are two reasons why this number is 20 percentage points higher than reported elsewhere: a different price deflator (see the author's discussion of price deflators) and the inclusion of benefits.

In sum, this section addresses the criticism that international trade leads to large job losses. Most Democrats voted against the North American Free Trade Agreement (NAFTA) and became more anti-trade as time went on. They argued that they wanted "fair trade" and not free trade. By this, they meant better pay and working conditions plus more environmental protections in the importing countries. In other words, they wanted low-income countries to have working conditions similar to high-income countries—which is impossible.

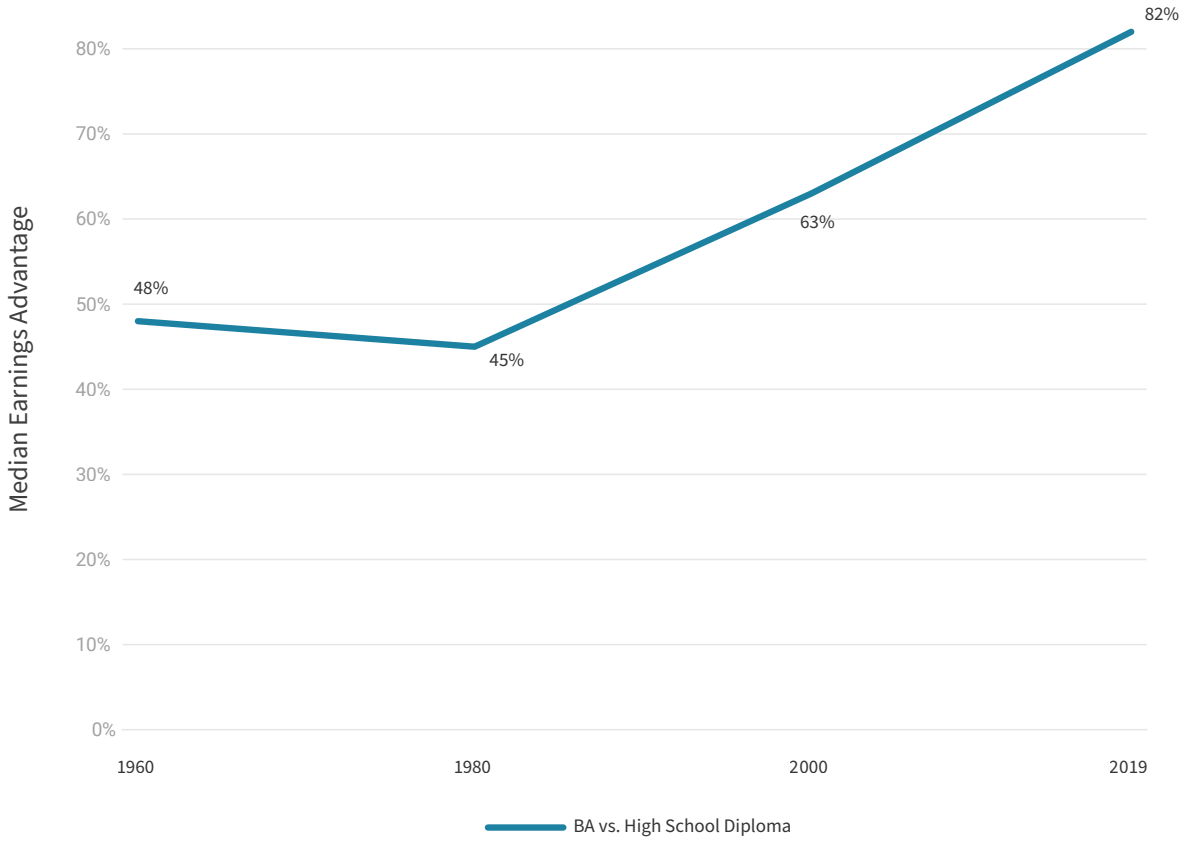
Trump claimed that the United States could do better and grow by at least 4 percent per year. He thought that access to the U.S. market would allow him to reduce imports with high tariffs. He was wrong because

he underestimated the retaliatory actions that other countries applied to U.S. exports. Consequently, employment growth under Trump continued at the rate seen under Obama. Ever the salesman, he took credit for the best economy in history.

The Effects of Trade and Other Factors on Earnings Inequality

While it seems intuitive that having foreign workers with very low wages should translate into downward pressures on low-earning U.S. workers, there are many reasons why this effect is small. This section explores eight of those factors.

Figure 3: Rising Educational Premiums



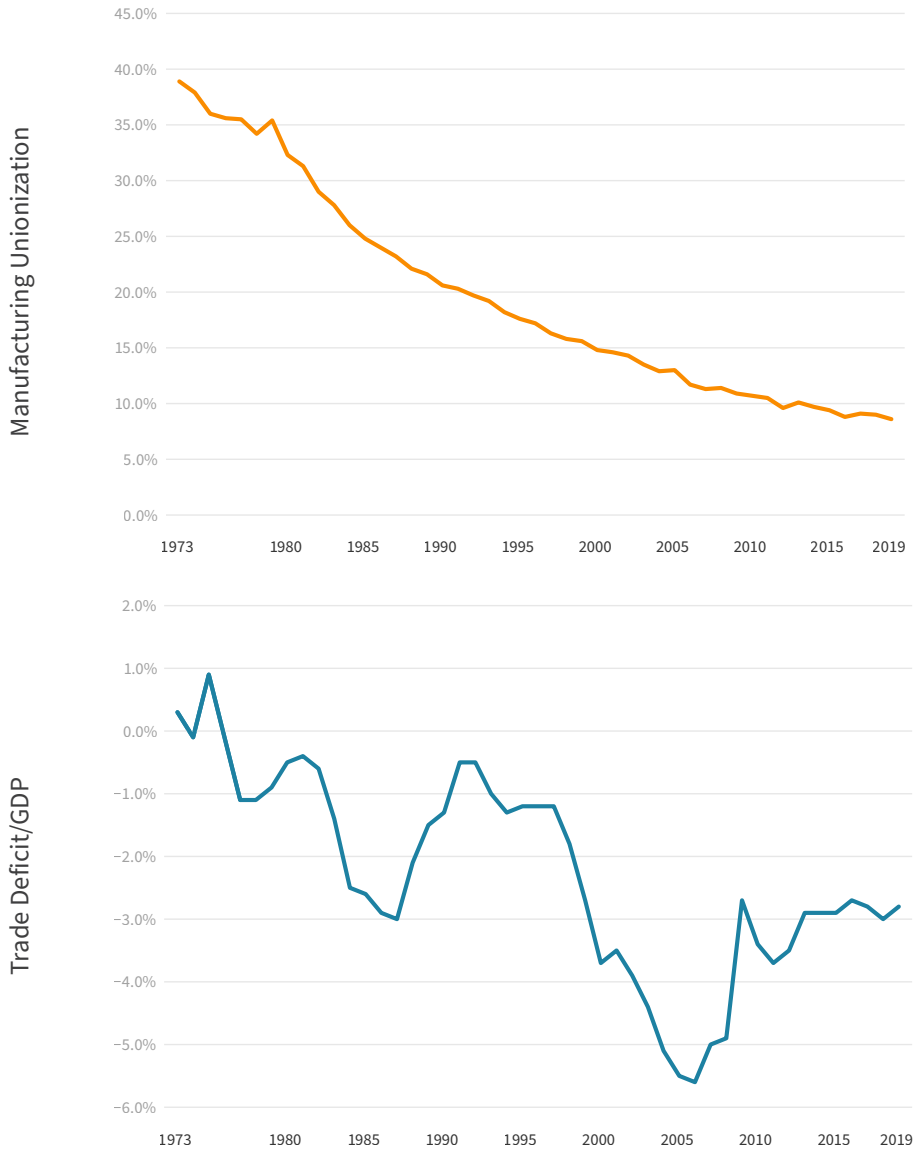
Source: Data calculated by author from Annual Socioeconomic Supplements of the March Current Population Survey available at: https://cps.ipums.org/cps/.

First, the number of workers affected is small in comparison to the size of the labor force and the number of workers losing jobs because of decisions made by domestic companies. Second, less than half of all imports come from low-income countries. Trade with high-income countries (e.g., Canada and Western Europe) does not affect U.S. earnings inequality because of their similar earnings.

Third, there is a significant amount of literature showing the rising earnings advantage of graduates of four-year schools—often called "skill-biased technological change." As Figure 3 shows, the median earnings of those with a four-year degree versus the median earnings of those with just a high school diploma and no post-secondary education grew from 45 percent in 1960 to 82 percent in 2019 (sometimes called the "BA premium").

Fourth, declining unionization certainly had a negative effect on manufacturing wages. While the threat of moving facilities overseas has been used as an effective tactic to keep wages low, companies' attacks on unions predate the jump in international trade. As Figure 4 shows, half of the decline in manufacturing unionization occurred from 1973 to 1985, when trade deficits were small. From 1986 through 2019, unionization rates declined steadily while the trade deficit experienced big swings.

Figure 4: Trade Deficit and Manufacturing Union Coverage Rate



Source: Bureau of Economic Analysis National Income and Product Accounts for Trade Deficit Data available at: https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=2&isuri=1&1921=survey and Manufacturing Unionization Data provided by Barry T. Hirsch and David A. Macpherson.

Fifth, many legal and undocumented immigrants increase the supply of low-skill workers. In many people's mind, this is another case of foreign actors hurting American workers. However, a major study from the National Academy of Sciences in 2017 found no evidence that immigrant workers decrease the pay of any group of U.S. workers.

Sixth, as will be shown in the next section, the shift to more imports led to more highly paid front office and business service workers. A 2016 paper argues that the anger of the lower-middle class is not directed mainly at the plutocrats but at technocrats and university professors.

Seventh, the real value of the minimum wage kept up with inflation from the time it was enacted in 1938 through 1968, when it was a bit higher than $10 per hour in 2019 dollars. However, since 1968, the minimum wage has not kept up with inflation and has been stuck at $7.25 per hour since 2009. Oddly, legislators resisted tying the minimum wage to inflation because they wanted to take credit for raising the minimum wage. The Congressional Budget Office estimated that 17 million workers would have higher earnings if the minimum wage was set at $15; another 10 million with hourly wages just above the current level would also benefit.

Finally, there is the issue of making it into the middle class. The lower level of inequality in the earlier years after World War II has been presented as manual workers receiving a "family wage"—enough money to live comfortably with a non-working wife and a couple of children. The argument is that the middle class in the early years lived better than the middle class today.

This is nonsensical. Real GDP per capita in 1960 was one-third the value in 2019; life expectancy was eight years less; houses were smaller; and amenities such as air conditioning were rare. In terms of pay, median-income blue-collar workers in manufacturing in 2019 were paid nearly 50 percent more than their inflation-adjusted median in 1960. While some unionized industries had high earnings, manufacturing workers in textiles, food, clothing, leather, and furniture-making did not.

A previous paper defined a relative standard of good pay as yearly earnings greater than the 40th percentile level of all male workers ($45,000 in 2019). In 1960, 56 percent of non-college-educated blue-collar manufacturing workers met this standard. By 2019, this share dropped to 42 percent. This is an indicator of some loss in relative standing. But a much bigger economic pie means that a smaller slice leads to a substantial gain in blue-collar living conditions even though workers higher up on the earnings ladder had bigger gains. The gain is larger if the increase in benefits is included. The gain here is mostly the higher cost of health insurance, but the United States has gotten a payoff for this extra spending in that life expectancy increased 4.7 years from 1979 to 2018 (the last year of available data). Of course, some of these gains have been wiped out because of the Covid-19 pandemic.

The Change in the Economy as Manufacturing Plays a Smaller Role

Manufacturing employment declining from 32 to 8 percent means that nearly a quarter of the workforce is working in other sectors. The simple three-way division of agriculture, goods production, and services means that over 80 percent of workers are employed in service industries. Many people think that most service work is low paid and requires few skills, derisively called "hamburger-flipping" jobs.

This is untrue—most of the highest-paid jobs are classified as "service jobs." A 2010 book written by the author of this paper presents a new "functional" approach that divides work based on what workers do. The five functions are:

- Agriculture, including fishing;
- Manual labor in manufacturing, construction, and mining;
- Low-skill services and retail workers;

- Non-administrative workers in healthcare, education, and communication; and
- Office work, including front office workers in manufacturing and other industries.

The first two functions consist of manual workers producing goods. This leaves three service functions—one low-skilled and two high-skilled. The high-skilled service functions dominate the current U.S. economy, with 67 percent of employment and 75 percent of cash earnings (they have high pay, 81 percent have a four-year degree, and 91 percent have a graduate degree, based on March 2020 data). The employment share of these five functions changed dramatically from 1980 to 2019.

- The agriculture function declined from 6 percent to 1 percent;
- The manual labor function declined even more, going from 30 percent to 16 percent;
- Surprisingly, the low-skill service function fell from 20 percent to 16 percent;
- The healthcare-education function more than doubled its share from 10 percent to 21 percent; and
- The office function gained 11 percentage points, going from 34 percent to 45 percent.

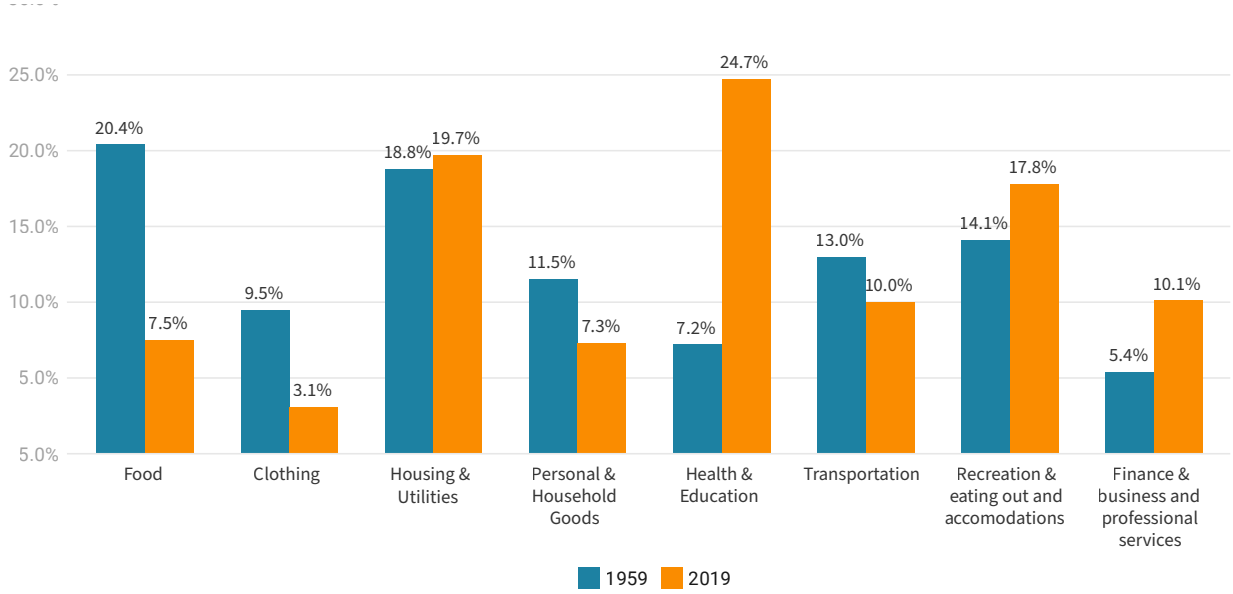
The large share of the office function should not surprise anyone, given the large office buildings that dominate central cities and even suburbs. This group consists of three activities:

- The front offices of manufacturing and other industries that do administration, strategic planning, and sales promotion;
- Government administration, planning, and services (including legislatures, courts, prisons, law enforcement, sanitation, and firefighters); and
- Financial and professional services to government, companies, and individuals.

More than half of these workers have at least a four-year degree. Some do intellectual and analytical work; others do not. Some skills require very specific training; others require general literacy, communication, and simple analytical skills. And there is a cadre of supporting clerical and other workers that does not require a college degree.

A second consequence of the advancement in productivity involves what Americans consume (Figure 5). Productivity gains are highest in the production of goods. Consequently, the categories with the largest declines are food (down 13 percentage points), clothing (down 6 points), personal and household goods (down 4 points), and transportation (down 3 points). The biggest areas of gain were health and education (up 16.5 percentage points), recreation, and finance and personal business services (up 5 points). The decline in goods consumption shows that manufacturing productivity is high enough to meet the demand for goods of consumers with 8 percent of the labor force. In 1960, nonmanufacturing industries required 20 percent of the labor force to meet consumer needs. Consequently, the net loss of 3.5 million jobs due to trade represents a small share of the additional 18 million manufacturing jobs that would have existed if the manufacturing employment share of the labor force remained at its 1960 level. The data on employment and consumption changes are important because the trends shown here are likely to continue in the years ahead.

Figure 5: Share of Consumption by Type



Source: Data calculated by author using the Bureau of Economic Analysis' National Income and Product Accounts available at: https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=2&isuri=1&1921=survey.

Conclusion

The import problem is that anti-trader perspectives have focused on the several million jobs lost by manufacturing firms. As shown above, this is a small number, and the involuntary separations of American-based companies dwarf the negative effect of trade. The bottom line is that almost the entire decline from 32 percent of the labor force in 1955 to 8 percent in 2019 was not caused by imports but by higher productivity. This is a worldwide phenomenon, as even Germany and other countries with positive trade balances also had their shares of manufacturing employment suffer comparable declines. Job losses in Europe have been less contentious because European governments generally provide greater income and training support for displaced workers.

Public support for manufacturing and agriculture is visceral. The manufacturing sector is much larger and consists of many large firms that are anchors of their communities. The people who supported trade deals such as NAFTA oversold the benefits—which undermined support when the added manufacturing jobs did not appear. And it does not seem to matter that neither Obama, nor Trump, using very different approaches, created the large number of manufacturing jobs that they promised.

The bottom line is that manufacturing produces more with fewer workers. It is fulfilling its mandate, and moving to a trade balance would only increase manufacturing employment by a few million workers at most. This paper shows that the shift away from manufacturing changes what Americans consume and creates high-paying professional and managerial jobs. The problem of low-paying jobs will not be solved by increasing manufacturing employment through changes in trade.

Furthermore, the easiest way to help low-paid workers is to increase the minimum wage. A paper from the Eurofund shows the minimum wage in U.S. dollars for all European countries. For most of the larger economies in 2018, the range was from $10.50 to $12.47. The United States has become comfortable with low-cost services and has the earned income tax credit to add to low-paid workers' incomes, but the Unites States still should do more. ■

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