

Policy vs. Practicality & Career Pathways

By John Benson

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1. Introduction

Sometimes I go crazy, but in a good way. I find many rich veins of information for future articles. As much as I disagree with the current executive of the US Federal Government, I believe Don is mainly responsible for most of the chaos that is leading to these interesting subjects. Well, I just found two new veins, and they are really rich.

President Donald Trump has claimed that the blooming trade war the White House launched this year will spur companies to forgo foreign goods and return manufacturing to American shores. But data suggests that the U.S. economy is not ready for a wholesale shift to manufacturing and that it would take years to ramp up production capabilities.¹

2. The Data

Data shows a fraction of people in the United States are employed by farms and factories compared with decades past, according to data from the Bureau of Labor Statistics, with most now in service jobs like software, finance and health care. And experts say focusing on domestic goods production could cost consumers while undermining America's growing advantage in the knowledge economy.

Author's comment: In the above paragraph, the words "...service jobs like software, finance..." is not exactly correct. Software is changing our perception of what the economic sectors are. *"The production of information has been long regarded as a service, but some economists now attribute it to a fourth sector, called the quaternary sector..."*² Since writing software can either be for producing a product or maintaining / repairing a product. In many cases that product is composed of both hardware and software, and in other cases it can be an application that is, mostly, pure software (like the Microsoft Word application I am writing this text with). Go through the reference 2 link for a good discussion of this subject.

Back to reference 1.

In the 1970s, 1 in 5 U.S. workers worked in manufacturing. Today, it's closer to 1 in 12.

Even with unlimited funding and political will, it takes years to reskill a labor force and rebuild infrastructure. Formal trade apprenticeships typically require four years, according to the Bureau of Labor Statistics. And Intel estimates building semiconductor fabrication plants takes three to four years to complete.

¹ Jasmine Cui, NBC News via MSN, "The White House is using tariffs to bring manufacturing back to America. Data suggests that could take a while.", March 11, 2025, <https://www.msn.com/en-us/money/markets/the-white-house-is-using-tariffs-to-bring-manufacturing-back-to-america-data-suggests-that-could-take-a-while/ar-AA1AGzZn?ocid=BingNewsBrowse>

² Wikipedia article on "Tertiary sector of the economy," https://en.wikipedia.org/wiki/Tertiary_sector_of_the_economy

Policy uncertainty is another major barrier. Companies hesitate to make long-term investments when trade policies could change within months or less.

Companies “won’t even start trying to hire and train people until they are convinced that there are permanent tariffs,” said Richard Mansfield, an economist at the University of Colorado Boulder. Instead of boosting domestic production, he said, it is likelier that companies will raise prices, find alternative suppliers — Vietnam, Chile — or both.

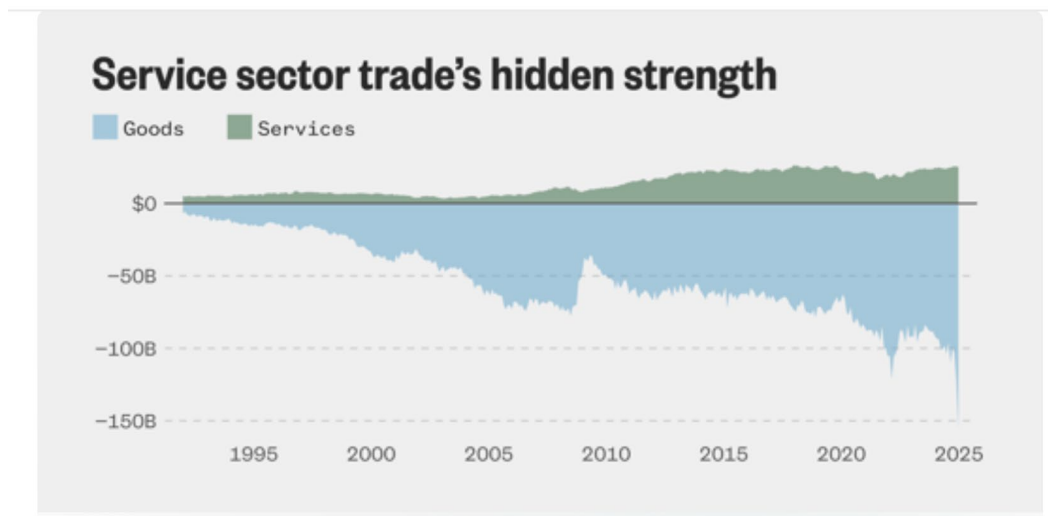
That played out during Trump’s first term, when, under the threat of tariffs, companies moved production from China to Mexico.

Dennis Hoffman, an economist at Arizona State University, framed the tariff impact more bluntly: “You end up hurting consumers across the entire United States.”

Author’s comment: You know, there is another role for consumers, as voters. It seems like Don it hell-bent on making sure the Democrats take control of both houses of congress in the election next year. I bet that will settle-down the chaos.

Meanwhile, a focus on producing goods overlooks another reality: America holds a global advantage in exports of services driven by business, travel and intellectual property.

The United States’ \$25.2 billion services surplus is often hidden by its \$156.7 billion goods deficit. See chart below.



Tariffs ignore that economic reality, leaving consumers with higher prices for basic goods and less to spend in the areas in which our economy excels, Hoffman said: Cheap goods mean “more money to save, to invest, to allocate elsewhere — we’re far better off because of access to international trade.”

Deficits are not necessarily negative. “If you run a trade deficit, you’re not a loser,” Hoffman said. “We run trade deficits because we consume — our appetite for consumption is greater than our capacity to produce.”

3. Path of progress

As countries progress and grow wealthier, manufacturing tends to represent less of their economies, Hoffman said.

Data from “Our World in Data”³ shows that while the manufacturing output of lower-income nations around the world increased from 2004 to 2020, higher-income countries went in the opposite direction.

From cutting-edge software development to innovative financial products, knowledge economy work often offers better wages and working conditions than traditional manufacturing.

Hoffman, who grew up in Michigan and witnessed manufacturing’s 1970s heyday, said that while such factory jobs were good for “their time,” they were dirty, dangerous and physically demanding.

Today’s service economy, he said, creates different but superior opportunities: “It’s less wear and tear on the body, you’re able to work longer, you’re able to earn a good living.”

Author’s comments: and since I worked as an engineer for my whole 50-year career (a service-sector job), when I retired (in 2013), I was relatively healthy. Now, 12-years later, I’m still healthy, writing twice-weekly posts for Energy Central, responding to readers, and otherwise staying very active.

One other note regarding onshoring manufacturing jobs: many manufacturing facilities in the US have closed in the past few years⁴. Existing manufacturing facilities are currently operating near peak capacity, so major expansion would require opening (or reopening) facilities. See <https://fred.stlouisfed.org/series/CAPGMFS>

4. Why Tariffs are Mostly Bad

Most countries are limited by their natural resources and ability to produce certain goods and services. They trade with other countries to get what their population needs and demands. However, trade isn’t always conducted in an amenable manner between trading partners. Policies, geopolitics, competition, and many other factors can make trading partners unhappy.⁵

³ <https://ourworldindata.org/>

⁴ Over 45,000 U.S. manufacturing establishments have closed since 20021. According to the Census Bureau’s Business Dynamics Statistics series, the U.S. lost 73,757 manufacturing establishments from 2001 to 2014, resulting in a decline of about 20 percent, see <https://checkyourfact.com/2018/04/12/fact-check-did-the-us-lose-70000-factories-under-bush-and-obama/>

⁵ Scott Nevil, Investopedia, “What Is a Tariff and Why Are They Important?” February 13, 2025, <https://www.investopedia.com/terms/t/tariff.asp#:~:text=A%20tariff%20is%20a%20tax%20imposed%20by%20one,industries%2C%20or%20exert%20political%20leverage%20over%20another%20country>

4.1. Understanding Tariffs

Tariffs are used to restrict imports. Simply put, they increase the price of goods and services purchased from another country, making them less attractive to domestic consumers.

A key point to understand is that a tariff affects the exporting country because consumers in the country that imposed the tariff might shy away from imports due to the price increase. However, if the consumer still chooses the imported product, then the tariff has essentially raised the cost to the consumer in the importing country.

4.2. Why Governments Impose Tariffs

Governments may impose tariffs for several reasons:

- *To raise revenues*
- *To protect domestic industries*
- *To protect domestic consumers*
- *To protect national interests*

4.2.1. Raising Revenue

Tariffs can be used to raise revenues for governments. This kind of tariff is called a revenue tariff and is not designed to restrict imports. For instance, in 2018 and 2019, President Donald Trump's administration imposed tariffs on many items to rebalance the trade deficit. In the fiscal year 2018, customs duties received were \$41.6 billion. In fiscal year 2019, duties received were \$71.9 billion.

4.2.2. Protecting Domestic Industries

Governments can use tariffs to benefit particular industries, often doing so to protect companies and jobs. For example, in April 2018, President Donald Trump imposed a 25% ad valorem tariff on steel articles from all countries except Canada and Mexico.

In March 2022, President Joe Biden replaced the tariff on steel products from the United Kingdom with a tariff-rate quota of 500,000 metric tons, and reached quota deals with several other countries.

This proclamation reopened the trade of specific items with the U.K. while taking measures to protect domestic U.S. steel manufacturing and production jobs.

4.2.3. Protecting Domestic Consumers

By making foreign-produced goods more expensive, tariffs can make domestically produced alternatives seem more attractive. Some products made in countries with fewer regulations can harm consumers, such as a product coated in lead-based paint. Tariffs can make these products so expensive that consumers won't buy them.

Effective Feb. 1, 2025, President Donald Trump placed 25% tariffs on imports from Canada and Mexico and 10% tariffs on imports from China. The rationale behind these tariffs was to force these countries to cooperate with the U.S. to stem the flow of illegal immigrants and drugs like fentanyl from entering the U.S., as well as to boost domestic manufacturing and raise revenues.

4.2.4. Protecting National Interests

Tariffs can also be used as an extension of foreign policy as their imposition on a trading partner's main exports may be used to exert economic leverage. For example, when Russia invaded Ukraine, much of the world protested by boycotting Russian goods or imposing sanctions. In April 2022, President Joe Biden suspended normal trade with Russia. In June, he raised the tariff on Russian imports not prohibited by the April suspension to 35%.

4.3. Unintended Side Effects of Tariffs

Tariffs can have unintended side effects:

- They can make domestic industries less efficient and innovative by reducing competition.*
- They can hurt domestic consumers since a lack of competition tends to push up prices.*
- They can generate tensions by favoring specific industries or geographic regions over others. For example, tariffs designed to help manufacturers in cities may hurt consumers in rural areas who do not benefit from the policy and are likely to pay more for manufactured goods.*
- Finally, an attempt to pressure a rival country by using tariffs can devolve into an unproductive cycle of retaliation, commonly known as a trade war.*

Author's comment: Your author believes that the primary unintended consequence of tariffs is they greatly reduce economic efficiency. Some countries have intrinsic advantages over others and can produce specific products at a lower cost, even if you include non-tariff export costs. In an international economy unrestricted by tariffs, each country can produce products they are best at, and the buyers in most countries win.

5. Better Paying Jobs

Your author was able to find general information on apprenticeships for the U.S. in general from the Reference 6 Federal Agency. I also wanted to find the same regarding job training in community colleges, and couldn't find any general information for the U.S., so looked to my home state (California) and found plenty (Subsection 5.2 below).

5.1. Apprenticeships

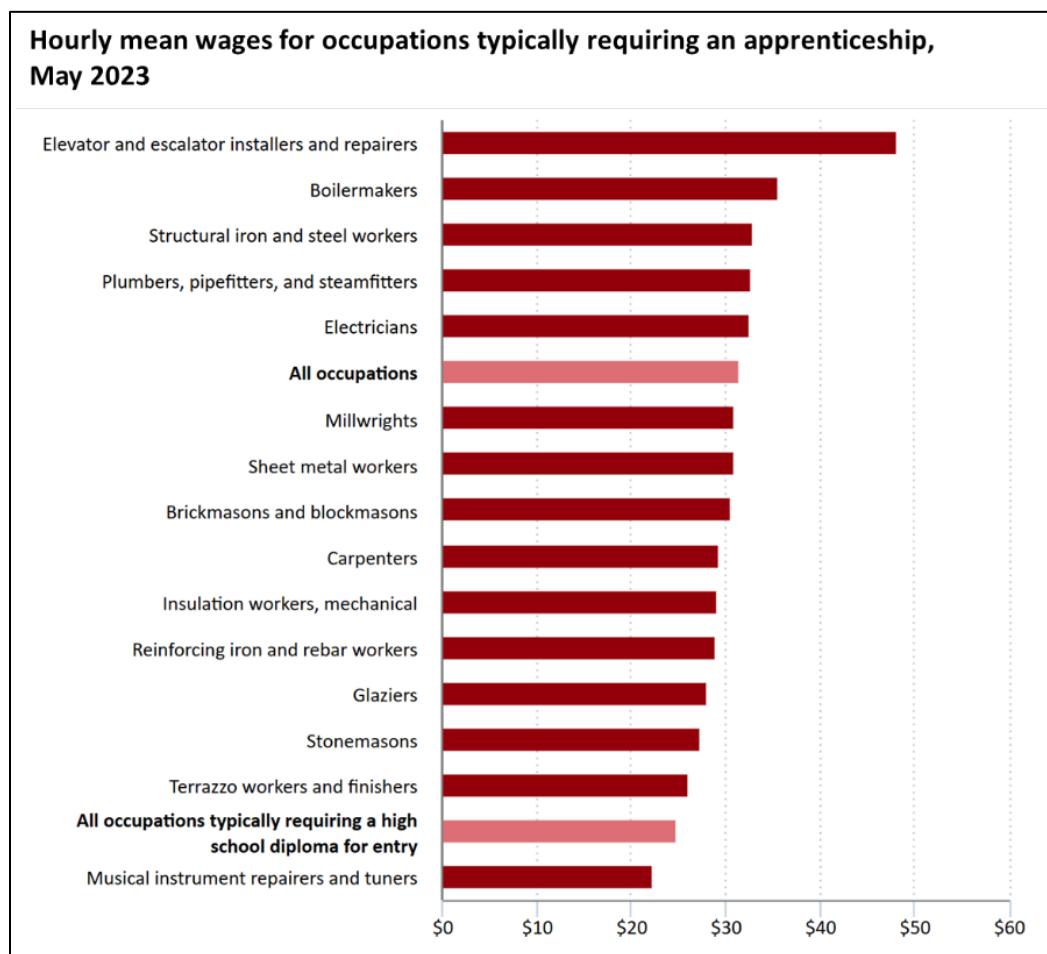
Want to earn a paycheck while learning about an occupation? Consider an apprenticeship! Apprenticeships are formal relationships between workers and sponsors, such as individual employers, employer-and-labor organizations, or employer associations. Apprenticeship programs usually last three to five years and allow workers to earn money while receiving on-the-job training and technical instruction in an occupation. Occupations in which apprenticeships are the typical route for attaining competency are called "apprenticeship occupations" hereafter. These are all construction or installation, maintenance, and repair occupations. They typically require a high school diploma or the equivalent, such as a General Educational Development (GED) credential, for entry.⁶

⁶ U.S. Bureau of Labor Statistics, TED: The Economics Daily, "Five apprenticeship occupations had hourly mean wages above the U.S. all-occupations average in 2023," December 11, 2024,

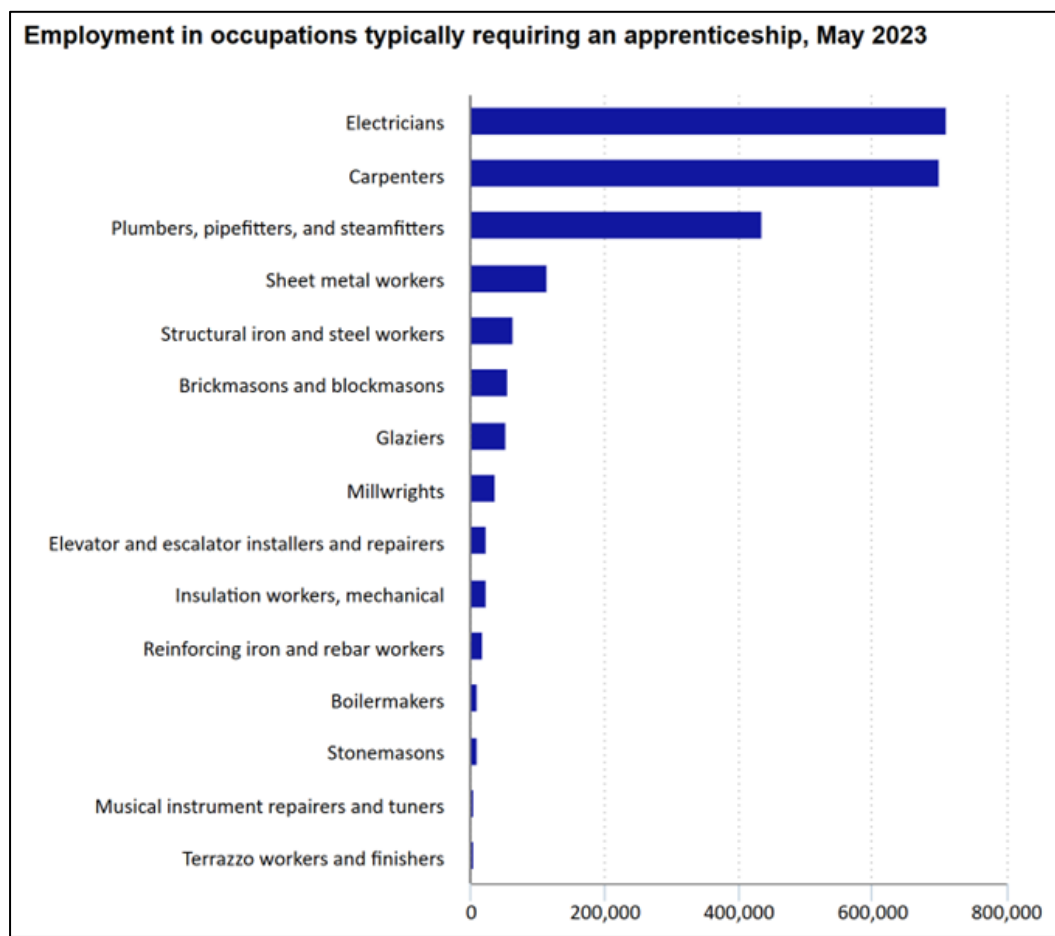
In May 2023, the highest paying occupation typically requiring an apprenticeship was elevator and escalator installers and repairers with an hourly mean of \$48.11. The highest paying apprenticeship occupations also included boilermakers (\$35.50); structural iron and steel workers (\$32.80); plumbers, pipefitters, and steamfitters (\$32.62); and electricians (\$32.60). All five of these occupations had hourly mean wages above the U.S. all-occupations average (\$31.48).

The lowest paying apprenticeship occupation was musical instrument repairers and tuners (\$22.24). This was the only apprenticeship occupation with an hourly mean wage below the average of \$24.87 for all occupations typically requiring a high school diploma or the equivalent for entry. The lowest paying apprenticeship occupations also included terrazzo workers and finishers (\$26.07) and stonemasons (\$27.37).

The data for the above text above and the charts below are from the Occupational Employment and Wage Statistics (OEWS) program. OEWS employment and wage estimates represent all wage and salary jobs in the occupation, including both apprentices and fully trained workers.



<https://www.bls.gov/opub/ted/2024/five-apprenticeship-occupations-had-hourly-mean-wages-above-the-u-s-all-occupations-average-in-2023.htm>



5.2. California Community Colleges

For readers that are not residents of my home state (and don't want to attend a community college here), I would suggest the following search-string in your preferred search engine / browser. I tried this for my home state (substituting "California" for the text in *in italics*) and it worked really well.

Your-Home-State community colleges job skills training programs

Career education is all about preparing you for a livelihood that can support you and your family while doing something you love.⁷

California's community colleges are the largest provider of workforce training in the world with more than 200 programs – crafted in collaboration with business and labor and taught by industry professionals – ranging from craft brewing to engineering to automotive technology. Many of our life-changing programs can be completed in less than a year, and – at just \$46 per unit – you can't beat the price.

⁷ California Community Colleges, Career Education, <https://www.cccco.edu/Students/Career-Education>

Learn about the career opportunities available at a community college near you, no matter where you live (in California).

Our Vision 2030 calls for significantly and equitably boosting the number of students completing career education programs who find a job in their field while also increasing the number of students annually who earn associate degrees, credentials, certificates or acquire the skill sets needed for an in-demand job. So don't delay.

Final author's comment: The link below will take to an excellent web page that allows viewers to quickly find their local California Community College via a very slick interactive map, and then view all of the jobs at that community college, as well as the colleges contact information.

<https://www.communitycollegecareerconnect.com/>

The following link is to a very good frequently asked questions site.

<https://www.cccco.edu/Students/student-faq>