

WEEKLY ECONOMIC COMMENTARY

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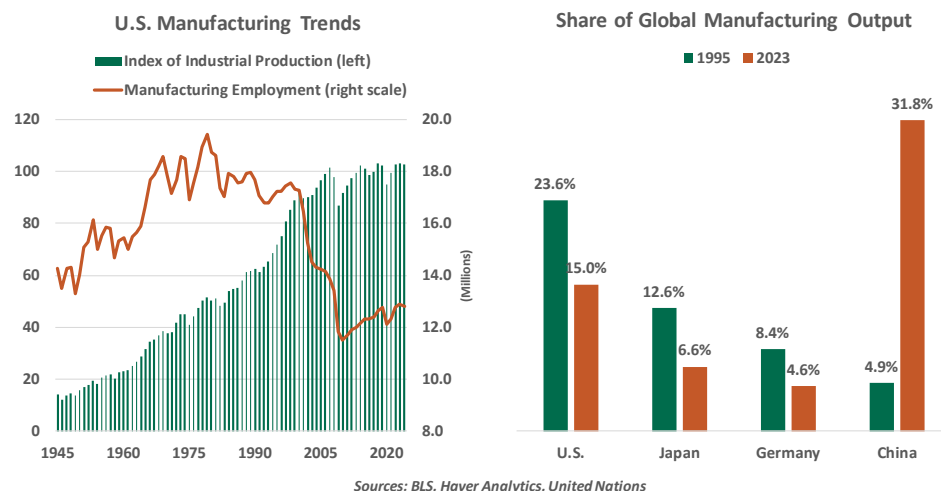
- **America's Manufacturing Conundrum**
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As a child of the American Midwest whose father worked in the steel industry, I have witnessed the decline of U.S. factories at close range. I remember visiting mills on the Southeast side of Chicago that were teeming with activity. Today, they are ruins that have been overtaken by native vegetation. The communities surrounding them have endured comparable decline and decay.

American leaders are now engaged in an effort to reverse the loss of manufacturing. The hope is to restore a path to prosperity for struggling regions and their residents. Tariffs are being employed liberally as a means to this end.

The endeavor seems noble. But success is far from certain, and the costs of achieving it could be substantial. A look at how we got to this point provides important perspective as we set a course for the future.

Not everyone agrees that American manufacturing is in decline. U.S. industrial output is near a record level, and has grown significantly during the past forty years. Shocks such as the 2008 financial crisis and the pandemic interrupted the upward trend.



Employment in manufacturing, however, began to stagnate in the mid-1960s. The United States was still a relatively closed economy then, and China was many years from becoming a global economic power. The advancing application of technology was the root cause of diminished labor demand at the time, and remains an important force today.

The newer the facility, the more likely it is to be heavily automated. Jobs created by new plant construction will require elevated skill levels, and may not be that plentiful. Reshoring may not provide the boost to factory employment that some are hoping for.

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The decline in manufacturing jobs became much more pronounced as globalization advanced. Trust between nations steadily improved as memories of the Second World War receded, allowing the opening of markets and the establishment of global supply chains. Thanks to a series of major trade treaties, merchandise exports as a percentage of global gross domestic product (GDP) tripled between 1960 and 2008.

Proponents of free trade contend that globalization lowered prices, increased product quality, sharpened efficiency and raised standards of living. It has also been credited for contributing to the unprecedented gains in global asset markets seen over the past forty years.

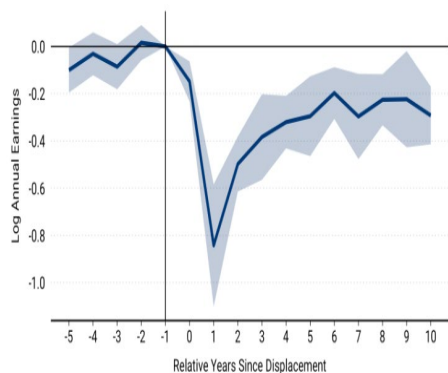
But while populations prospered overall, some regressed. Exposed to keen international competition, many domestic industries struggled. As a prominent example, American mills produced over 20% of the world's steel in 1970; today, imported steel has driven that fraction down to less than 3%.

Many workers in sectors disrupted by trade struggle to find new opportunities. When they do, they often have to accept lower wages. Economic dislocation resulting from industrial change is among the contributors to advancing income inequality and declining economic well-being for many households. It has also led to elevated levels of drug addiction, alcoholism and suicide in the affected communities. These developments are well-documented in Case and Deaton's "Deaths of Despair," which is based on work that earned the Nobel Prize in Economics.

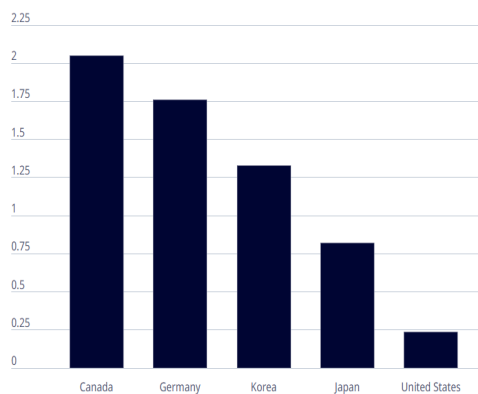
Free trade has upsides...and downsides.

Effect of Job Displacement on Log Annual Earnings

All workers, ages 25 to 55



Public spending on labour markets
Total, % of GDP, 2021



Sources: BLS, Brookings, OECD

In an attempt to cushion the blow, the U.S. government began offering Trade Adjustment Assistance (TAA) in the 1960s. TAA featured prominently when the first North American Free Trade Agreement was constructed in the 1990s, and again when China was granted entry to the World Trade Organization in late 2001. TAA encompassed programs that retrained workers and helped to find them new opportunities, as well as programs that offered direct financial support to ease in the transition. The annual budget for the effort peaked at about \$800 million.

The broad design sounds sensible, but the results of TAA were disappointing. The amounts appropriated were modest, and the program was cumbersome. Studies showed that the red tape discouraged prospective TAA candidates, many of whom opted to simply collect unemployment or disability payments instead.

Even when applied, TAA's effectiveness was limited. Retraining was supposed to be central to the effort, but the requirement was often waived. While younger workers generally took advantage of

the opportunity to update their skills, older workers often did not. In the end, TAA did a poor job of getting workers back on track. Unpopular with both parties, Congress allowed TAA to close in 2022. Some fresh thinking is sorely needed.

The inexorable evolution of economies requires adaptation. Trying to control these transitions is difficult and expensive, and may limit growth. Allowing them to proceed unfettered can leave some families and communities behind. To address the challenge of industrial change, many countries make substantial investments in labor force transition programs. As shown in the chart, however, the United States is not among the world leaders on this front.

Failure to manage the tradeoffs associated with economic change almost inevitably results in calls to turn back the clock, as is happening in the United States. Unfortunately, going back to the past will be a very expensive proposition. Consumers will pay for the regression in the form of higher prices; the current tariff trajectory is equivalent to one of the largest tax increases in American history. It will take years and billions of dollars to construct new facilities and supply chains. And there may still be a permanent underclass that is left behind.

There isn't much left of the South Works mill. The entry gate is still standing, and long-abandoned rail lines still crisscross the property. The question of what to do after the factory is gone lingers over the surrounding neighborhoods, and our country.

Scorched Earth

As a student, I was taught that monopolies are bad for an economy. Too much market power leads to inefficiency, higher prices and less innovation.

At a national level, monopoly can be wielded as a weapon for furthering strategic interests. We are living through an example of this. After the U.S. imposed substantial tariffs on China, Beijing responded with tariffs of its own and with restrictions on exports of seven rare earth minerals. The latter action will be a particular hindrance to American manufacturers.

Rare earths are a group of 17 chemically-similar elements, which are not extremely scarce but which are difficult to separate from each other. These minerals are used in a number of products including smartphones and automobiles. They are also important ingredients for aerospace and defense technologies. The global demand for rare earth metals has intensified amid the green transition and the rise of artificial intelligence algorithms. Over the past 30 years, global production has grown almost fivefold to more than 350,000 metric tons.

Beijing dominates the global supply of these substances. It is the world's largest producer of rare earth elements, accounting for more than two-thirds of global extraction and over 90% of refining, processing and manufacturing. Asia's largest economy has 44 million tons of rare earth reserves, equivalent to over one-third of the global total.

Between 2020 and 2023, China supplied 70% of U.S. rare earth imports. These commodities are therefore a significant source of leverage in trade negotiations. Beijing has used its dominance in this space in the past, halting exports to Japan in 2010 amid rising tensions.

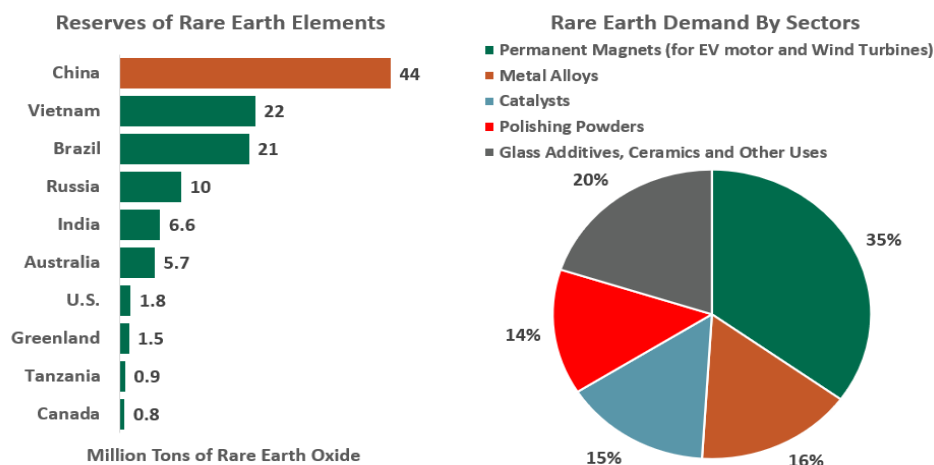
Rare earth elements are neither easily replaceable nor readily available in adequate quantities outside of China. Nations like Myanmar, the U.S., Vietnam, India and Russia hold some reserves, but lack production and processing capacity. Greenland and Canada have largely untapped deposits of rare earths, making them strategic hotspots for the U.S. administration. But their reserves are even smaller than those of the United States.

Turning back the clock on trade is not the solution.

The U.S. has only one operational rare earth mine and lacks the capacity to separate heavy rare earth elements. Three American companies are in the process of expanding production capacity and sourcing minerals from U.S. allies. That's a start, but America will struggle to meet ever-increasing demand.

Rare earth materials make up a minimal fraction (about 0.01%) of China's global exports. Curbs on shipments will therefore have only limited economic implications for China. Given the heavy usage of minerals across a spectrum of industries in the United States, a prolonged suspension of supply will hit America hard.

China has a leverage over the United States in the market for rare earths.



A lasting disruption could force shutdowns of U.S. auto plants, as the stockpile of essential components is likely run out within a matter of months. These metals are critical ingredients for capacitors, which supply power to computer servers and smartphones. Heavy rare earths are also critical to defense, featuring in fighter jets, unmanned aerial vehicles, missiles and radar.

Across administrations, the U.S. has been trying to restrict technology transfers and access to chip-manufacturing equipment. These moves are aimed at impairing China's ability to capitalize on its cache of rare earth minerals. America and its allies have the facilities to make high-end components, but lack the necessary raw materials. In a world hungry for high-tech products, this is an especially costly impasse.

Shocks In Store

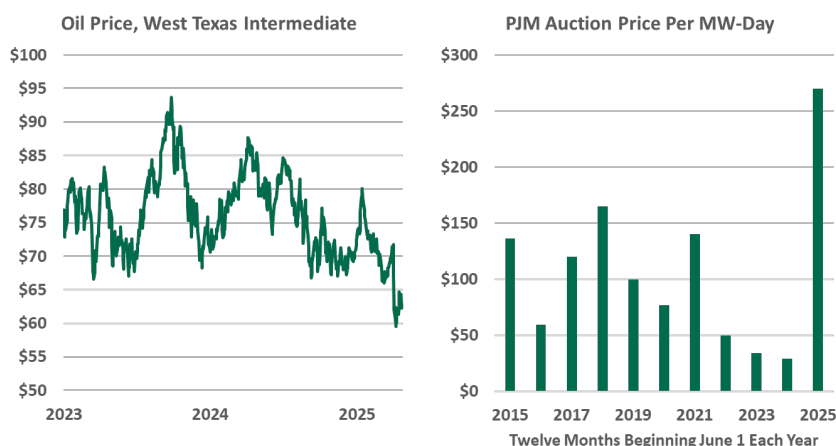
Many American consumers recently endured their first inflationary cycle, and recent trade headlines have elevated fears of another bout with higher costs. While not impacted by tariffs, energy markets may play a critical role in driving the price level during the balance of this year.

First, the good news, at least for household budgets: Oil prices have stepped down, limiting the cost of gasoline. However, lower prices are not great for the energy sector. The Administration's strategy to keep oil prices low was to expand domestic output. Oil below \$60 per barrel is not profitable for most U.S. producers and certainly not sufficient to fund exploration and extraction from new fields. Hopes for significantly lower gasoline prices in the long term may not be met.

We are also following trends in electricity prices, where the fundamentals of supply and demand may soon give many consumers a shock. Electricity generation is undergoing a change: older coal-burning plants are retiring as they cease to be cost-competitive with cheaper natural gas. However, replacement sources of supply are not coming online at a pace sufficient to replace them.

Advancements in nuclear technology are promising, but mass deployment remains many years in the future.

The existing fleet of power plants will offer all they can, but demand will be tremendous. Artificial intelligence, along with every internet-enabled platform, depends on power-hungry data centers. Shifts away from fossil fuels for transportation and heating means a shift toward more electricity consumption. The push to restore domestic manufacturing of goods will only add to electricity demand from industrial facilities. Analysts forecast up to 80 new gas-fired plants will be built in the nation through 2030, a 20% gain in capacity. That won't help in the short-term.



Sources: EIA/CME, Haver Analytics, PJM, Power Magazine

Electricity bills may be the next place we experience an inflationary cycle.

The disconnect between supply and demand for electricity became clear in last year's power capacity auction for PJM Interconnect, a regional electricity transmission organization covering 13 states in the country's northeast quadrant. The auction sets a wholesale price for electricity generated within the network, priced to accommodate intervals of peak demand. The clearing price jumped an astounding 833% from the prior year; it is set to take effect this coming June and be effective for a year thereafter. While final bills may not increase by this magnitude, all electricity buyers should be braced for higher prices. And the PJM experience may be a cautionary tale for the nation's seven other regional interconnections.

So while we have been expecting a jolt to prices from tariffed products, one of the biggest may come from a domestic source. And there is no way for consumers to insulate themselves.

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