



# Economic Impact of US Trade and Industrial Strategy

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Coalition for a Prosperous America  
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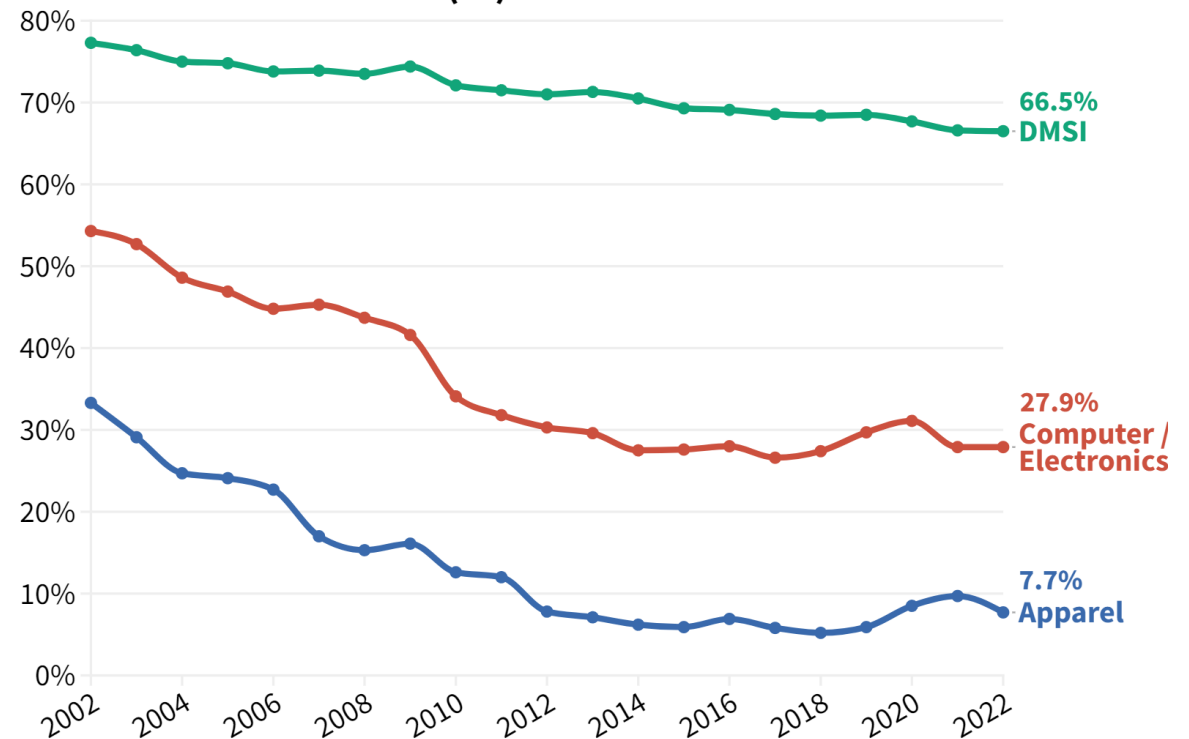
# Agenda

- + Recent U.S. trade trends and CPA economic analysis
- + US Industrial policies 2018-2023
- + Conclusion

# DMSI Shows US Manufacturing Still Losing Share to Imports

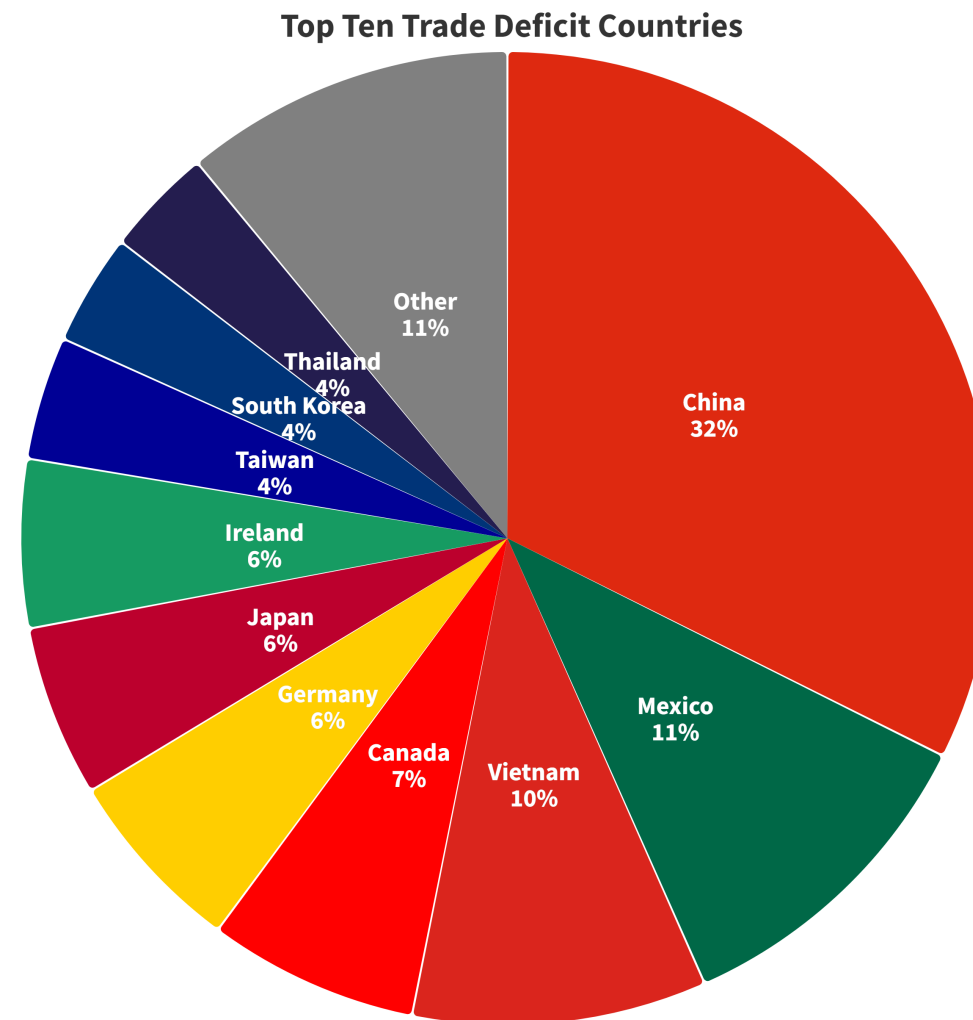
- + CPA's Domestic Market Share Index measures US producers' share of US mkt for mfd goods.
- + DMSI fallen consistently since 2002
- + Now at 66% domestic/34% import share.
- + Computer/elex: DMSI 28%/ imports 72%
- + Apparel & leather: DMSI 7.7%/ imports 92.3%

**Domestic Market Share (%)**



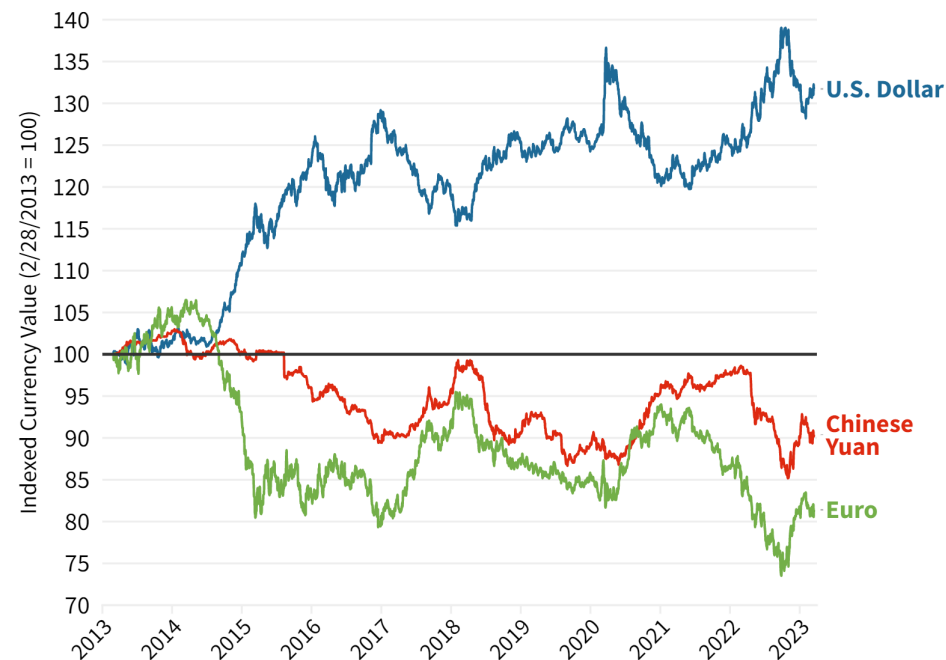
# Trade Deficit Hits All-Time Highs in 2022

- + US goods trade deficit 2022: \$1.19T
- + Total trade deficit: \$948B
- + China share of US deficit falls to 32% due to 301 tariffs
- + Vietnam deficit skyrockets
- + Ireland grows due to pharma



# Dollar Overvaluation: A Persistent Problem

- + In last 10 years:
  - + Chinese yuan -9.3%
  - + Euro -18.5%
  - + USD +30.9%
- + Dollar rose despite repeated trade deficits
- + Capital flows distort global economic system
- + Overvalued dollar benefits importers, hurts domestic producers.
- + New CPA Currency Misalignment Monitor charts over/undervaluation
- + Today: yuan 18% undervalued
  - + Yen 27% undervalued





# Economic Modeling: GTAP

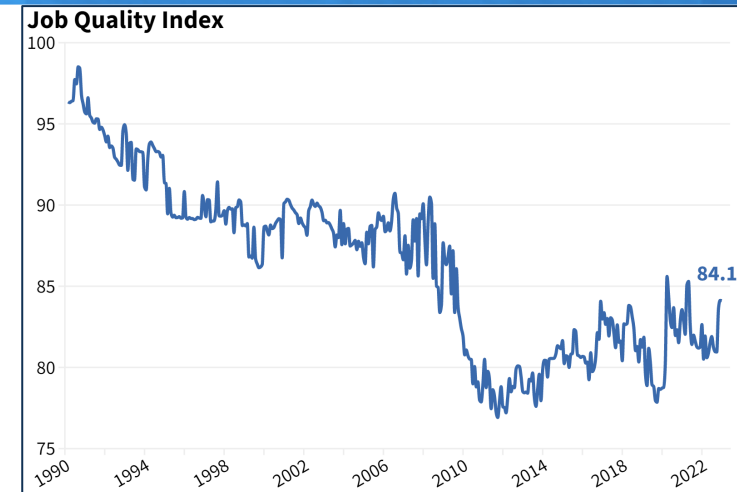
- + Modeling outcomes required by law for every free trade agreement
- + GTAP dominant model
- + Contains inbuilt biases to favor free trade
- + Pioneering work by CPA to make GTAP more objective:
  - + Showing that tariffs can increase domestic production (add 1M jobs in 5 years)
  - + China paper showing 25% China tariff would create 721,000 US jobs won NABE Mennis Award 2019
  - + US-UK study showed that FTA would add 3,000 to US unemployment
  - + Current "Model Tariff" project looks at growth from across-the-board tariffs on manufacturing imports



# CPA's Job Quality Index Shows Low-Quality Jobs Far Outpace High-Quality



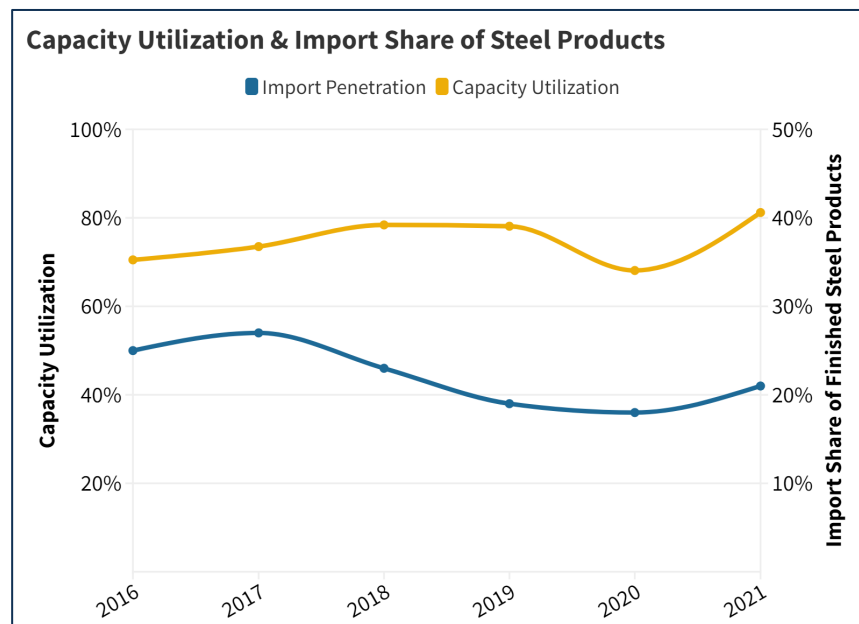
- + JQI declined from 96.4 in 1990 to 84.1 in 2023
- + Decline of high-quality jobs linked to decline of manufacturing sector
- + Growth in low-quality jobs linked to growth of retail, restaurant, hospitality, health care, education sectors
- + Real weekly earnings for P&NS workers down 9% from 1973 peak
- + Result of competition from low-wage nations
- + Follow JQI at:
  - + <https://ubwp.buffalo.edu/job-quality-index-jqi/>



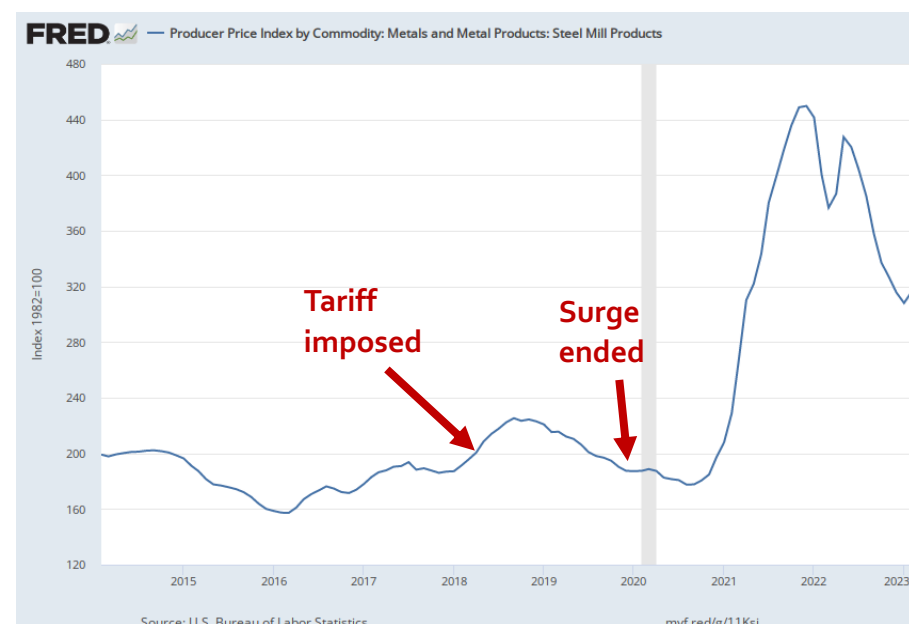
# Steel Tariffs Cut Imports, Raised Utilization

## Transitory Impact on Prices

- + Steel tariffs cut imports by 24% per new USITC study
- + Raised capacity utilization to 80%
- + Enabled return on capital to justify further investment



- + Only 2.4% impact on steel prices, per ITC study
- + Actual steel prices show price mini-surge over by Dec. 2019
- + Effect of supply chain issues much greater than tariff impact





# New Steel Investment, Thousands of Well-Paid Jobs

- + Tariffs triggered > 15 new steel facilities
- + Accelerating the transition to clean EAF technology

## New Iron/Steelmaking Capacity Since 2018

In million metric tons (mmt).

| Projected starting year | Firm                       | Location           | Additional capacity (mmt) |
|-------------------------|----------------------------|--------------------|---------------------------|
| 2018                    | Commercial Metals          | Durant, OK         | 0.4                       |
| 2020                    | Nucor                      | Sedalia, MO        | 0.4                       |
| 2020                    | Big River Steel            | Osceola, AR        | 1.5                       |
| 2020                    | Nucor                      | Frostproof, FL     | 0.4                       |
| 2020                    | U. S. Steel                | Fairfield, AL      | 1.6                       |
| 2021                    | JSW                        | Mingo Junction, OH | 1.5                       |
| 2022                    | Steel Dynamics             | Sinton, TX         | 3.0                       |
| 2022                    | Nucor                      | Ghent, KY          | 1.4                       |
| 2022                    | North Star BlueScope       | Delta, OH          | 0.9                       |
| 2022                    | Nucor                      | Brandenburg, KY    | 1.2                       |
| 2023                    | ArcelorMittal/Nippon Steel | Calvert, AL        | 1.7                       |
| 2023                    | Commercial Metals          | Mesa, AZ           | 0.5                       |
| 2024                    | Nucor                      | Weirton, WV        | 3.0                       |
| 2024                    | Nucor                      | TBA                | 0.6                       |
| 2024                    | U. S. Steel                | Osceola, AR        | 3.0                       |
| TBA                     | Nucor                      | Lexington, NC      | 0.4                       |

Source: American Iron and Steel Institute, prehearing brief, July 8, 2022, 7.

- + Steel jobs pay well
- + Average 2021 pay: \$126k
- + Leading-edge company benefits include bonuses, profit-sharing

## Median Employee Pay, Top 4 Steelmakers

| Company          | No. employees | Median pay 2021   |
|------------------|---------------|-------------------|
| Nucor            | 26,120        | \$ 142,635        |
| Steel Dynamics   | 10,729        | \$ 126,721        |
| US Steel         | 23,141        | \$ 109,369        |
| Cleveland-Cliffs | 25,535        | \$ 125,396        |
| <b>Industry</b>  | <b>85,525</b> | <b>\$ 126,491</b> |

Source: SEC company filings

# Washing Machine Tariffs Led to New Large Plants in TN, SC

- + Feb. 2018: Trump puts 20% tariff on washing machines, rising to 50% above 1.2M units.
- + 2018: LG opens “smart” 1M sq. ft. factory in Clarksville, TN, \$360M investment.
- + 2018: Samsung opens \$380M plant in Newberry, SC., employs 800.
- + August 2020: LG produces 1 millionth washing machine at Clarksville
- + April 2021: LG expands Clarksville (TN) to 1,000 jobs
- + July 2022: SC economist says Samsung’s 1,074 employees create additional 1300 jobs in South Carolina and bring millions of dollars to the state.



*Left: Samsung facility  
Above: Gov. McMaster  
celebrates 5 yrs of Samsung in  
Newberry*

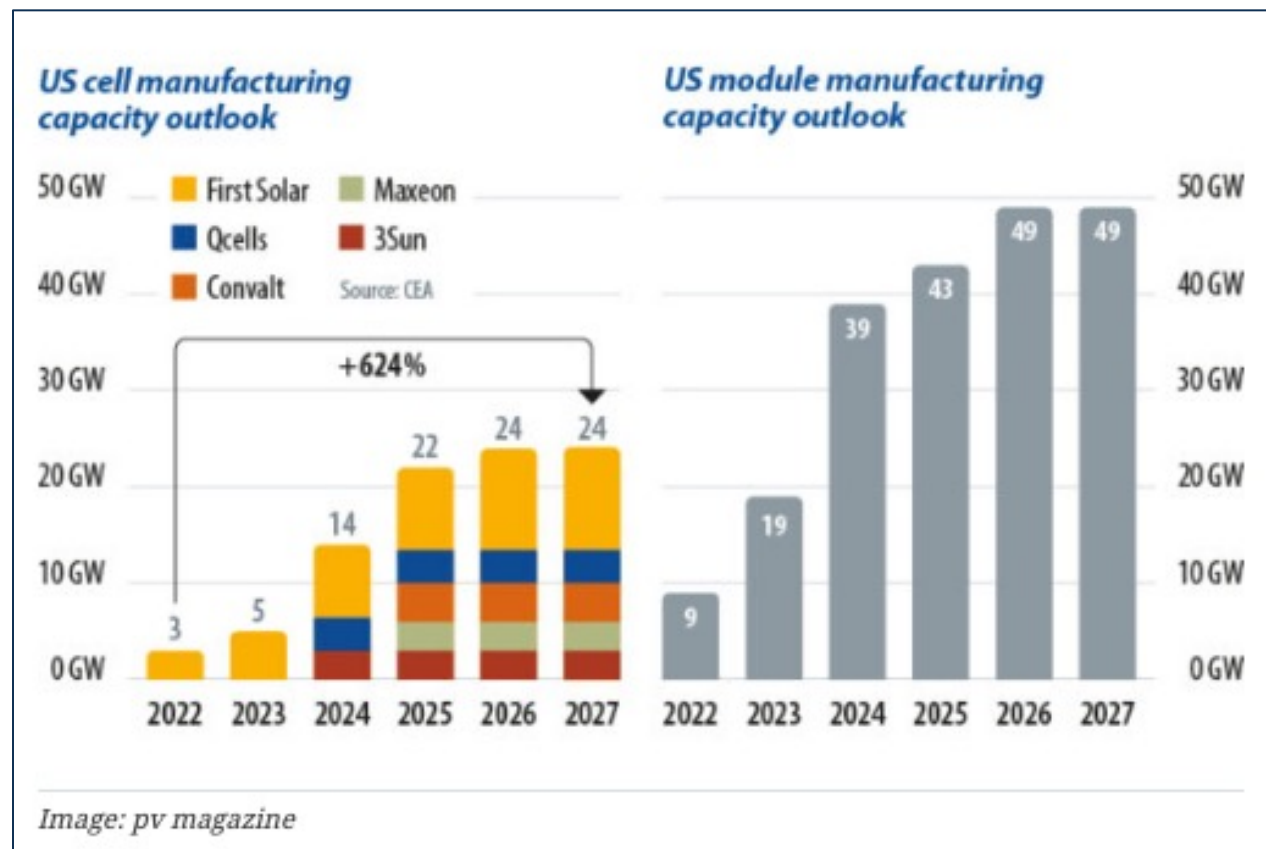
# CHIPS Act: \$150B of Investments in US Manufacturing

- + \$39B in tax credits for new fabs
- + Generating \$150B in investment 2023-2030
- + TSMC 4,500 direct jobs, 13,000 at suppliers
- + Micron: 9,000 jobs (NY) + 2,000 (Idaho)
- + Intel: 3,000 jobs (OH)
- + Samsung 1,800 jobs (TX)
- + TI: 800 jobs (Utah)

| Company           | Investment    | Location          | Product                  | Application     |
|-------------------|---------------|-------------------|--------------------------|-----------------|
| Micron            | \$20B->\$100B | Clay, NY          | Memory                   | Phones, Laptops |
| Micron            | \$15B         | Boise, Idaho      | Memory                   | Phones, Laptops |
| Intel             | \$20B->\$100B | New Albany, Ohio  | Processors               | Servers         |
| TSMC              | \$40B         | Phoenix, Arizona  | Processors               | Phones, servers |
| Samsung           | \$17B->\$192B | Austin, Texas     | Processors               |                 |
| Texas Instruments | \$11B         | Lehi, Utah        | Analog, RF               | Autos, motors   |
| Global Foundries  | \$4.2B        | NY state          | Analog, RF, Si photonics | Autos, phones   |
| Wolfspeed         | \$6.5B        | NC                | SiC crystals             | EVs             |
| Wolfspeed         |               | Mohawk Valley, NY | SiC chips                | EVs             |

# IRA Tax Credits Unleashing Solar Boom

- + Tax credits increase profit of solar mfg, upstream & downstream
- + Q Cells investing \$3.3B for 2<sup>nd</sup> GA factory, complete supply chain in US, 2500 jobs
- + Q Cells targets 4X increase to 8 Gigawatts/year by 2024
- + First Solar invests \$1.1B in production in Ohio & Alabama to reach 10 GW, 700 jobs, with 2023 IRA tax credit of \$685M
- + Cubic PV plans 10 GW of wafer capacity, 1500 jobs
- + Forecasts for 2027: 24GW of US cell capacity, 49GW of module mfg capacity.
- + Would mean imports only 20%-30% of US consumption
- + Boost to technological innovation
- + Will require IRA + solar tariffs on China & SE Asia





# IRA Generates Large Investment in EV's, Batteries

- + Massive multi-layer cake of tax credits
- + Batteries:
  - + 10% of cost of electrode active materials
  - + \$35/kWh credit for battery cell capacity made in NA
  - + \$10/kWh credit for battery assembly made in NA
  - + 10% of cost of producing battery minerals
- + Vehicles
  - + \$3750 consumer credit if >40% critical minerals mined in NA
  - + \$3750 consumer credit if >50% of battery components made in NA
  - + Qualifications rise by ~10% a year from 2023 to 2035
- + Conditions, Possible Walking Back
  - + IRS may water down the US focus
  - + Lack of mining permits will slow down process
  - + Consumer credits limited to EVs priced under \$55k (sedans)/\$80k (SUVs)
- + Large cost to US Treasury
  - + Battery credits total estimate range from \$30B to \$196B for 10 years



One 2030 forecast: 65% of MVs will be EVs->8M units, subsidies at \$9k/EV, total annual USG cost=\$72B



# Policy Choices: Tariffs vs. Subsidies

## + Single –country tariffs (Section 301 China tariffs)

### + Benefits:

- + Geostrategic. Reduce US dependence on China.
- + Weakens Chinese economy
- + Generates US govt revenue paid by foreign exporters

### + Drawbacks:

- + Does not stimulate US production or reduce total imports

## + Global Tariffs (Section 232, 201. Steel, washing machines)

### + Benefits:

- + Increase domestic production
- + Generate good, high-paid mfg jobs

### + Drawbacks:

- + Can hurt downstream users of tariffed products if not applied throughout the supply chain

## + Tax credits aka Subsidies (CHIPS Act, IRA)

### + Benefits:

- + No uncertainty about benefit
- + Stimulate immediate investment by US producers.

### + Drawbacks:

- + US taxpayer pays the bill.
- + Favor large companies w/lobbying clout.

**All these policies are boosting US production and jobs.  
None caused any significant inflation, based on 2018-2023 experience.**

## Conclusion: Economics at CPA

- + Tracking impact of trade policy on US manufacturing, incomes, growth, and equality.
- + Working for better trade policies for the broad US economy
- + ...and for specific industries, including steel, pharmaceuticals, solar equipment, bicycles, quartz tabletops
- + Objectively evaluating economic impact of trade policies including tariffs and tax credits
- + Improving economic modeling of the international economy
- + Working to move economics profession off “free trade religion”

# Thank You

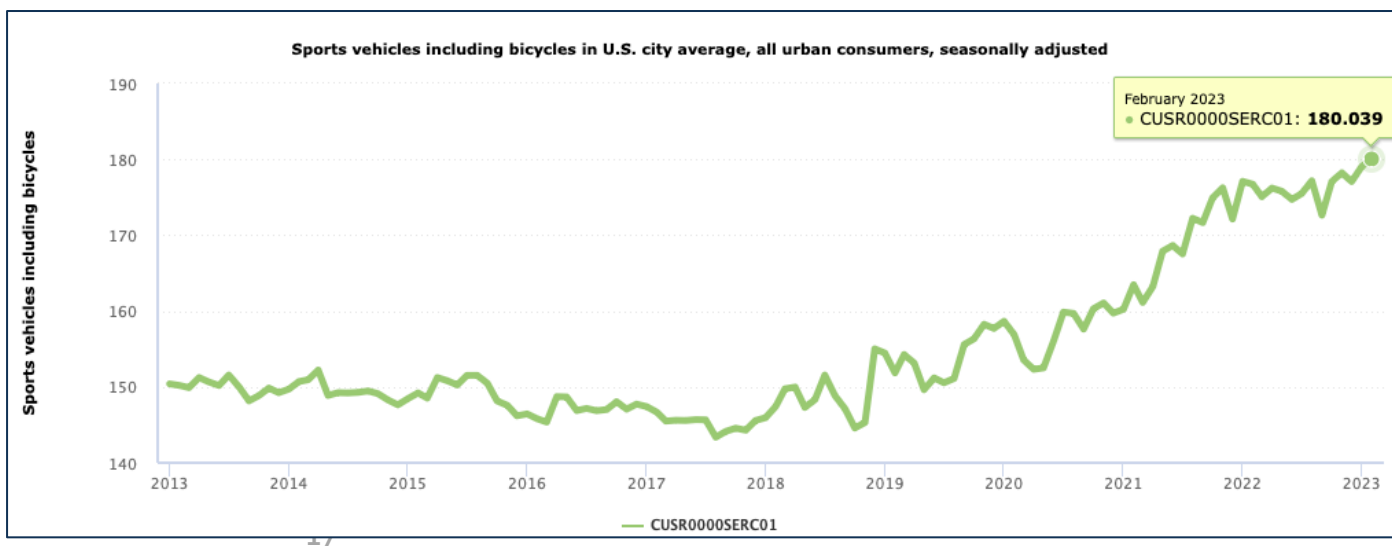
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# Inflation Impact of Bicycle Tariffs (2018-2019) Was Less Than Supply Chain Snafu Impact (2021-2022)



- + Bicycle inflation was lower in Trump years than in COVID and post-COVID years
- + Tariffs have LESS impact on inflation than shortages due to long supply lines

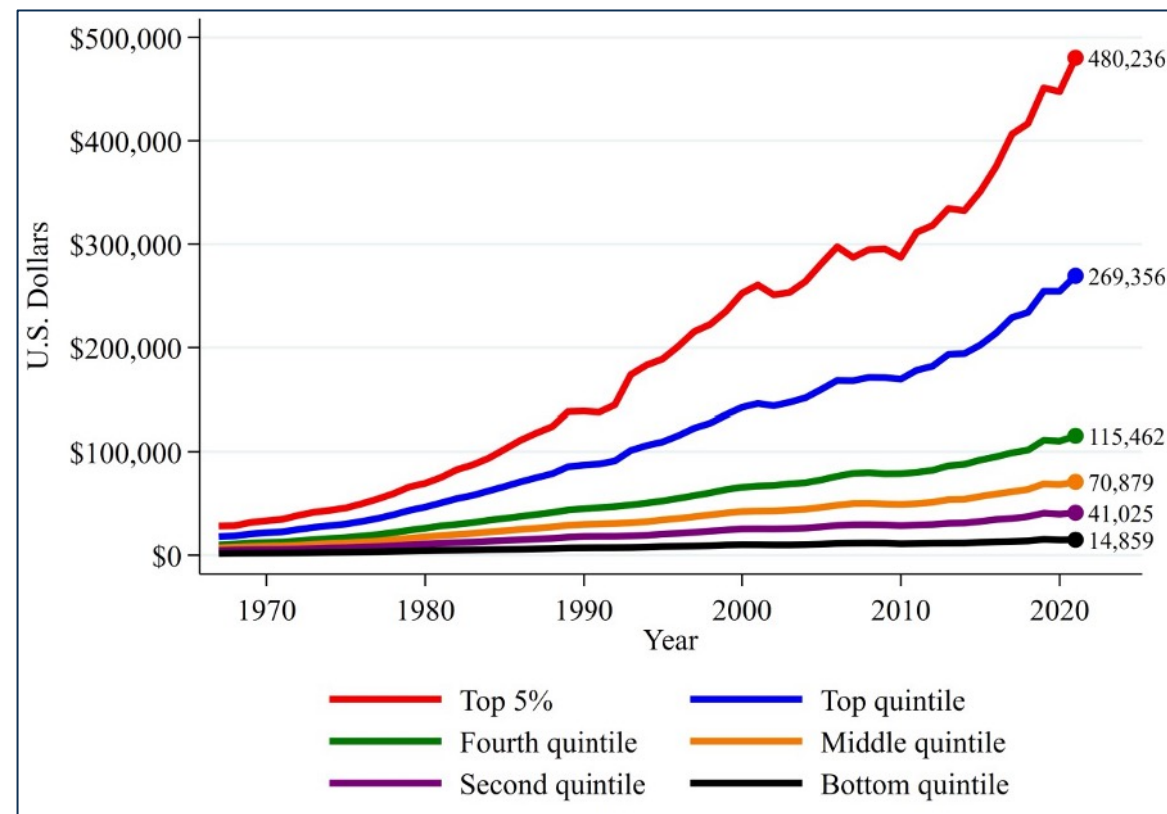
|          | Bicycles price index | % Change | Avg Annual % Change |
|----------|----------------------|----------|---------------------|
| Dec 2016 | 147.732              |          |                     |
| Dec 2019 | 157.706              | 6.75%    | 2.25%               |
| Dec 2022 | 177.070              | 12.3%    | 4.1%                |



# Globalization is a Disaster for the US

- + Regression to a global mean
- + Deadly for high-wage nations
- + Erodes US manufacturing industry
  - + Domestic share down 77%→66% in 20 yrs
- + Breaks up the supply chain
- + Creates opportunity for surplus nations to exploit deficit nations
- + Increases inequality
  - + Top 5% real income up 21% since 2000
  - + Median income up just 6.4%
  - + Bottom quintile income down 7.3%

**Real Median Household Income 1967-2021**  
*Constant 2021 US Dollars*





# Income Inequality: Evolution since 2000

## + Real income change 2000-2021

| Income Group    | 2000 Real Median HH Income (2021 dollars) | 2021 Real Median HH Income (2021 dollars) | Percent Change |
|-----------------|---|---|----------------|
| Bottom quintile | \$16,025                                  | \$14,859                                  | -7.3%          |
| Second Quintile | \$40,012                                  | \$41,025                                  | +2.5%          |
| Middle Quintile | \$66,631                                  | \$70,879                                  | +6.4%          |
| Fourth Quintile | \$103,581                                 | \$115,462                                 | +11.5%         |
| Top Quintile    | \$224,458                                 | \$269,356                                 | +20.0%         |
| Top 5%          | \$398,211                                 | \$480,236                                 | +20.6%         |