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Tax Reforms to Strengthen America's Industrial Base

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In the long term, tax reform for businesses could further improve incentives to work and invest, leading to even more opportunities for American workers and companies.

Pro-growth tax policies will unshackle American manufacturing and should be prioritized by policymakers working to strengthen American industrial capacity.

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Club for Growth Foundation is a 501(c)(3) non-profit organization focused on educating the public about the value of free markets, pro-growth policies, and economic prosperity.

KEY FINDINGS

- Economic policy has recently shifted away from neutral, broad-based provisions for encouraging capital investment toward targeted tax subsidies and tariff protections for specific industries to achieve governmental policy goals.

- The result of this shift is a conflicting tax code that thwarts investment in general but also provides offsetting subsidies or protections for favored industries and technologies. Understanding the drawbacks of this industrial policy approach, as well as better alternatives to boost domestic investment, will help lawmakers better navigate upcoming policy decisions, such as the expiration of the 2017 Tax Cuts and Jobs Act (TCJA) at the end of 2025.

- While the goal of growing American businesses and jobs is worthy, the bottom line is that industrial policy is an inefficient and even counterproductive means to do so. Industrial policy most often fails to achieve its intended goals, and it distorts the economy by shifting resources toward politically favored sectors at the expense of overall growth and welfare. It is not merely economically costly; it wastes significant taxpayer dollars too.

- In the short term, a more promising path would be for lawmakers to eschew industry-specific tax credits and protections, instead providing full cost recovery to all business investment. In the long term, lawmakers can build on full cost recovery by adopting a distributed profits tax system to improve work and investment incentives significantly and reduce the resources wasted on tax compliance and administration.

- Such reforms would boost economic output by 1.8 percent while growing the size of the aggregated US capital stock, lifting wages, increasing employment, and reducing the complexity of the tax system. Plus, higher economic output would drive improvements in the nation's fiscal health by reducing the long-term debt-to-GDP ratio.

INTRODUCTION

A disturbing shift is taking place within US economic policymaking: the increasing use of industrial policy, or narrowly targeted government subsidies and protections intended to achieve specific outcomes. One arena in which the industrial policy trend is highly evident is the tax code. Tax breaks for businesses have shifted markedly away from deductions for broad categories of capital investment toward subsidies for specific industries or technologies. Import tariffs to shield domestic businesses from competition have also been on the rise.

This trend raises serious concerns about economic efficiency, competitiveness, and long-term welfare. The record of accomplishment of industrial policy, both in the United States and abroad, should give lawmakers significant pause—subsidies tend to be inefficient and even counterproductive. Meanwhile, tariffs redistribute income from domestic consumers and downstream industries to politically favored businesses and the government, while reducing overall output and welfare. At a time of mounting fiscal deficits, fierce international competition, and rising geopolitical concerns, tax dollars should be put to their most efficient use. By relying on inefficient subsidies and output-reducing tariffs, policymakers are forfeiting the opportunity to revise a tax code that could better promote growth and opportunity.

Lawmakers will soon have a chance to correct course when legislative deadlines set by the TCJA of 2017 arrive in 2025. In contrast to the recent trend of narrowly targeted provisions, the TCJA broadly improved the tax treatment of some types of investment temporarily but worsened the tax treatment of research and development (R&D). The legislative deadlines of the TCJA could function as a forcing mechanism for Congress to enact comprehensive and permanent reforms. If lawmakers heed the principles of sound tax policy—simplicity, neutrality, transparency, and efficiency—they could substantially reduce compliance costs and economic burdens that hinder the US economy.

The following section reviews the tax treatment of business investment and explains how the current tax code's cost recovery schedules are biased against business: they disallow companies from fully deducting the costs of their R&D and capital expenditures. The subsequent section examines examples of industrial policy, including recent green energy and semiconductor manufacturing subsidies. It also reviews import tariffs for steel, aluminum, and a broad category of goods from China. Finally, this paper concludes by outlining a more promising path forward: in the short term, full cost recovery to business investment, and in the long term, comprehensive reform of the tax system so that it no longer serves as a barrier to American economic success.

How the Tax Code Treats Business Investment Costs

The corporate income tax is defined as a tax on business profits; business profits are calculated by subtracting a company's expenses from its revenues for a given period. The corporate tax system comprehends this basic business definition for most business costs, such as utilities and wages, allowing immediate deductions when those expenses are incurred. However, business costs for physical capital (business investment) and R&D are not immediately deducted when the expense is incurred. Instead, each company must follow government-directed cost recovery periods for its various business investment activities.

By delaying deductions for investment, the tax code partially denies deductions for those investments. Inflation and the time value of money combine to eat away at the value of those deductions, reducing them to some value less than the company's real-time expense. Waiting to deduct the cost of an investment, whether it be new equipment, new real property, or salaries paid to scientists engaging in R&D, is a government-inflicted cost. According to Internal Revenue Service (IRS) figures, corporations invested $1.1 trillion in 2020 but deducted only $620 billion from their aggregated 2020 tax returns, leaving $480 billion to deduct in future years.[1] While they wait, the real value of the deductions falls. The result: in 2020, firms could deduct only an estimated 81 cents on the dollar in real terms.

The longer the delay for taking a deduction, plus the higher the inflation rate and the firm's discount rate, the worse the tax penalty on investment. Table 1 illustrates the effect of a $100 investment that must be depreciated over different recovery schedules and under different inflationary environments. In real terms, delayed depreciation deductions overstate a firm's taxable income, resulting in a higher tax burden. The effect is a higher cost of capital, which discourages capital accumulation across the economy and hits capital-intensive sectors like manufacturing particularly hard. In contrast, allowing a full and immediate deduction ("full expensing") recognizes the real costs firms incur and does not result in a bias against investment.

TABLE 1. How Delays Reduce the Value of Deductions for Investment

	5-year asset	15-year asset	20-year asset
Expensing	$100.00	$100.00	$100.00
MACRS at 0% inflation	$92.97	$78.64	$75.50
MACRS at 2% inflation	$88.75	$69.32	$63.87
MACRS at 3% inflation	$86.77	$66.69	$59.07

Source: Author calculations assuming straight line depreciation, half-year convention, and 3 percent real discount rate plus inflation.

1 "SOI Tax Stats—Corporation Income Tax Returns Complete Report (Publication 16)," Table 13, Internal Revenue Service, accessed February 20, 2024, https://www.irs.gov/statistics/soi-tax-stats-corporation-income-tax-returns-complete-report-publication-16.

A tax system that falls short of full and immediate deductions discourages business investment, while a tax system that uses expensing is neutral toward investment. The evidence speaks for itself: a host of empirical work demonstrates the historical success of bonus depreciation (allowing firms to deduct a greater portion of their capital investment expenses immediately) increasing capital investment and employment levels among affected firms.[2] Put simply, the US tax code penalizes capital investment, putting capital-intensive industries such as manufacturing at a competitive disadvantage relative to the service sector and other countries that offer favorable treatment. They would not face these disadvantages under neutral tax treatment.[3]

The Shortcomings of Industrial Policy

Within tax policy, lawmakers have taken varied approaches to encourage additional investment. For instance, the tax code features accelerated depreciation schedules for specific types of assets, tax credits for various industries and technologies, as well as exemptions, exclusions, and deductions. And recently, the United States has seen an uptick in industry-specific tax policies.

A typical justification for the embrace of industrial policy stems from observations that the US manufacturing sector has, over the past several decades, seen a decline in employment and output as a share of the entire US economy. The argument then follows that more government support is needed to stem that decline.

The observation, however, lacks crucial context. Declines in manufacturing employment have occurred across the globe in countries with varying degrees of industrial policy, manufacturing trade balances, and even different baselines of employment size.[4] Rather than reflect a US-specific issue that demands government intervention, the declines reveal secular trends, like significantly higher shares of consumer spending on services.[5] As such, the declines are not indicative of broad problems with overall manufacturing capacity or policy.

Another motivating factor for policies aimed at specific industries is to ensure the United States remains competitive with other countries, particularly China. As China has continued to develop over the past few decades, its government has increasingly pursued large-scale investments through subsidies and state-owned enterprises. China's market interventions have raised concerns from US policymakers that America may be losing ground and has led to calls for increased government intervention of our own.

Policymakers should recognize that while it remains important to address legitimate concerns regarding China's practices, the notion that China will inevitably surpass the United States economically does not reflect the full picture—either now or in the future.[6] For example, economic output per person, adjusted

2 Eric Zwick and James Mahon, "Tax Policy and Heterogeneous Investment Behavior," *American Economic Review* 107 no. 1 (January 2017): 217–48, https://www.aeaweb.org/articles?id=10.1257/aer.20140855; Daniel G. Garrett, Eric Ohrn, and Juan Carlos Suárez Serrato, "Tax Policy and Local Labor Market Behavior," *American Economic Review: Insights 2, no. 1* (March 2020): 83–100, https://pubs.aeaweb.org/doi/pdfplus/10.1257/aeri.20190041; E. Mark Curtis, Daniel G. Garrett, Eric C. Ohrn, et al., "Capital Investment and Labor Demand," National Bureau of Economic Research, Working Paper No. 29485, February 2022, https://www.nber.org/system/files/working_papers/w29485/revisions/w29485.rev1.pdf.

3 See estimates of marginal effective tax rates in the United States versus China and the OECD in Erica York, Alex Durante, and Alex Muresianu, "Comparing the Corporate Tax Systems in the United States and China," Tax Foundation, May 3, 2022, https://taxfoundation.org/research/all/federal/us-china-competition-corporate-tax/ and in Kyle Pomerleau, "The Tax Burden on Corporations: A Comparison of Organisation for Economic Co-operation and Development Countries and Proposals to Reform the US Tax System," American Enterprise Institute, October 13, 2021, https://www.aei.org/research-products/report/the-tax-burden-on-corporations-a-comparison-of-organisation-for-economic-co-operation-and-development-countries-and-proposals-to-reform-the-us-tax-system/.

4 Robert Z. Lawrence, "Trade Surplus or Deficit? Neither Matters for Changes in Manufacturing Employment Shares," Peterson Institute for International Economics, Working Paper No. 20-15, September 22, 2020, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3697393.

5 Scott Lincicome, "Manufactured Crisis: 'Deindustrialization,' Free Markets, and National Security," CATO Institute, January 27, 2021, https://www.cato.org/publications/policy-analysis/manufactured-crisis-deindustrialization-free-markets-national-security#.

6 Scott Lincicome, "The China Threat Meets the China Reality," CATO Institute, June 2, 2021, https://www.cato.org/commentary/china-threat-meets-china-reality.

for purchasing power parity, was three and a half times higher in the United States ($76,329.60) than in China ($21,482.60) in 2022.[7] R&D intensity, measured by taking R&D expenditures as a share of the economy, is more than 40 percent higher in the United States (3.46 percent) than in China (2.43 percent).[8] And comparing labor productivity in both countries (value added per worker) again shows the strength of the US economy and its workers—the metric is more than four times higher in the United States ($114,920) than in China ($27,436).[9]

Accordingly, policymakers should be skeptical of emulating China's interventionist industrial policy. Funneling government money toward industrial activity is not a guarantee of achieving innovative or productive outcomes and, in fact, is likely to undermine growth in the long run. A recent empirical review of China's "Made in 2025" initiative finds "little statistical evidence of productivity improvement or increases in R&D expenditure, patenting, and profitability."[10] The researchers acknowledge they face some data limitations but nevertheless conclude that their results "cast doubt on the view that this controversial Chinese government policy has yet achieved its key objectives." They also note that their conclusions are consistent with other work that has found China's subsidies to *suppress* the country's total factor productivity growth rate.

China's infamous ghost cities paint a stark picture of government policies leading to capital misallocation. The government's push to develop land rapidly and rely on that development for growth fueled a boom of wasteful, debt-financed development that significantly outpaced demand. Sprawling ghost towns appeared; megadevelopments now sit uncompleted or unoccupied. This real estate bubble burst and is now dragging down overall growth.[11] The combination of the real estate downturn and other challenges of unemployment and local government financial stress are creating economic headwinds for the country.[12] The short-term headwinds are compounded by longer-term challenges, including demographic factors, that further cast doubt on China's economic prospects.[13]

The failure of China's industrial policy to produce lasting growth is not the only dangerous example for lawmakers to heed. Japan also provides an instructive example, recently detailed in *The Wall Street Journal:*

> *Both Japan and China's fondness for industrial policy, and Washington's increasing inclination to follow suit, should be another red flag for U.S. stock bulls. . .it is far from clear that subsidies can boost growth over the long run. And it often turns out poorly for investors because, by industrial policy's very nature, it tends to create overcapacity and depress companies' pricing power. At the same time, efforts to build "supply security" usually raise costs.*[14]

7 "GDP per Capita, PPP (Current International $)—China, United States," The World Bank, accessed February 20, 2024, https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?locations=CN-US.
8 "Gross Domestic Spending on R&D," OECD Data, The Organisation for Economic Co-operation and Development, accessed February 6, 2024, https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm.
9 "Industry (Including Construction), Value Added per Worker (Constant 2015 US$)," The World Bank, accessed February 20, 2024, https://data.worldbank.org/indicator/NV.IND.EMPL.KD. Data is as of 2019 and in constant 2015 US dollars.
10 Lee G. Branstetter and Guangwei Li, "Does 'Made in China 2025' Work for China? Evidence from Chinese Listed Firms," National Bureau of Economic Research, Working Paper No. 30676, November 2022, https://www.nber.org/papers/w30676.
11 Yoko Kubota and Liyan Qi, "Empty Buildings in China's Provincial Cities Testify to Evergrande Debacle," *The Wall Street Journal*, October 4, 2021, https://www.wsj.com/articles/evergrande-china-real-estate-debt-debacle-empty-buildings-cities-beijing-11633374710; Jason Douglas and Stella Yifan Xie, "Evergrande Is Finished. China's Property Woes Aren't," *The Wall Street Journal*, January 30, 2024, https://www.wsj.com/world/china/evergrande-is-finished-chinas-property-woes-arent-ea1be00f.
12 Laura He and Simone McCarthy, "Xi Jinping rings in 2024 with rare admission that China's economy is in trouble," January 1, 2024, CNN, https://www.cnn.com/2024/01/01/economy/xi-jinping-new-year-address-economy-intl-hnk/index.html.
13 Michael E. O'Hanlon, "China's shrinking population and constraints on its future power," April 24, 2023, The Brookings Institution, https://www.brookings.edu/articles/chinas-shrinking-population-and-constraints-on-its-future-power/.
14 Jacky Wong and Nathaniel Taplin, "Stocks for the Looong Run: Could Japan's Lost Decades Happen in America?" *The Wall Street Journal*, February 2, 2024, https://www.wsj.com/finance/investing/stocks-for-the-looong-run-could-japans-lost-decades-happen-in-america-71d9e17c.

The United States is susceptible to these same problems. The Congressional Budget Office estimates that productive federal investment exhibits an average rate of return of five percent—half the average rate the agency estimates for productive private investment.[15] The difference in returns between federal and private investment is illustrative of the gains forfeited when government policy diverts capital away from its most productive use toward a less productive use. A major review of US industrial policy from 1970 through 2020, conducted by international tax and trade experts Gary Clyde Hufbauer and Euijin Jung, finds mixed results at best. It also offers warnings against the failures of import protection, the high costs of attempting to save or create jobs in specific industries, and similar perils in firm-specific support.[16]

Despite jarring warnings against the industrial policy approach,[17] lawmakers' concerns over the US manufacturing sector and China's industrial policies reached a crescendo amidst the coronavirus pandemic and resulting supply chain disruptions. This culminated in the enactment of new industrial policy efforts. Enacted in 2022, the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Act provides $52 billion in grants and $24 billion in tax credits for onshore semiconductor production.[18] Similarly, the Inflation Reduction Act (IRA) established and expanded tax credits now expected to cost anywhere from $780 billion[19] to $1.2 trillion.[20] The hundreds of billions of dollars in new subsidies come on top of existing policies, including tariffs against China and other tax preferences, designed to benefit specific industries, geographies, and constituencies. Meanwhile, unfathomably, the underlying biased treatment of business investment within the tax code remains intact.

IRA Electric Vehicle Tax Credits

The main motivation behind the green energy tax credits enacted in the IRA was to accelerate the transition to greener energy sources through IRS-administered tax subsidies, with a secondary motivation to incentivize domestic investment, production, and employment. The IRA aims to accomplish these goals for electric vehicles (EVs) in two ways; by subsidizing the purchase of EVs that meet domestic content and assembly requirements, and by subsidizing a charging infrastructure that meets prevailing wage, apprenticeship, and geographical requirements. Thus far, the results highlight how this attempt at government planning, like most other attempts, is marred by inefficiencies, unintended economic consequences, and incongruence among policy objectives and outcomes.

When it comes to addressing the externalities of carbon emissions, most evidence suggests subsidies are not an effective approach. The inherent inefficiency of the subsidy approach is compounded by the specific design of the IRA credits. Requirements for domestic content and prevailing wages have been shown to slow the speed[21] and raise the costs[22] of other types of investment; these same factors are at play with the green energy credits.

15 *The Macroeconomic and Budgetary Effects of Federal Investment*, Congressional Budget Office (June 16, 2016), https://www.cbo.gov/publication/51628#:~:text=CBO%20further%20estimates%20that%20productive,of%20return%20on%20private%20investment.
16 Gary Clyde Hufbauer and Euijin Jung, *Scoring 50 Years of US Industrial Policy, 1970–2020*, Peterson Institute for International Economics (November 2021), https://www.piie.com/sites/default/files/documents/piieb21-5.pdf.
17 Erica York, "Tax Policy Improvements Needed to Help Industries through the Semiconductor Shortage," *Tax Foundation* (blog), March 16, 2021, https://taxfoundation.org/blog/semiconductor-shortage-tax-policy/.
18 *The CHIPS and Science Act: Here's what's in it*, McKinsey and Company (October 4, 2022), https://www.mckinsey.com/industries/public-sector/our-insights/the-chips-and-science-act-heres-whats-in-it.
19 John Bistline, Neil R. Mehrotra, and Catherine Wolfram, *Economic implications of the climate provisions of the Inflation Reduction Act*, Brookings Institution (March 29, 2023), https://www.brookings.edu/articles/economic-implications-of-the-climate-provisions-of-the-inflation-reduction-act/.
20 *Update: Budgetary Cost of Climate and energy provisions in the Inflation Reduction Ac*t, Penn Wharton Budget Model (April 27, 2023), https://budgetmodel.wharton.upenn.edu/estimates/2023/4/27/update-cost-climate-and-energy-inflation-reduction-act.
21 *Project Selection and Starts Are Influenced by Certain Federal Requirements and Other Factors*, US Government Accountability Office (February 2010), https://www.gao.gov/assets/gao-10-383.pdf.
22 Michael Thom, "What Do We Know about the Impact of Prevailing Wage Laws?," Mackinac Center for Public Policy, June 4, 2021, https://www.mackinac.org/what-do-we-know-about-the-impact-of-prevailing-wage-laws#:~:text=Many%20of%20them%20conclude%20that,to%20pay%20higher%20pension%20contributions.

For instance, the IRA's clean vehicle credit provides a nonrefundable tax credit of up to $7,500 for vehicles assembled in North America if the vehicles use specific types and amounts of components sourced from the United States or friendly countries. Additionally, taxpayers must meet income and price thresholds to take advantage of the credit.

These sourcing requirements reduce the number of vehicles that qualify for the credit while also creating associated cost pressures. Both of these misallocation outcomes undermine the goal of the credit to increase EV adoption. However, the Department of the Treasury ruled that leased vehicles do not have to meet the content, income, or pricing requirements to qualify for the tax credits. Leasing has since increased dramatically, and the costs of the EV credits have unsurprisingly grown in tandem from $11 billion to $69 billion in the 2023–2031 estimate.[23]

A complementary effort was the IRA's credit to cover 30 percent of the installation costs for EV chargers. However, the credit amount depends on whether businesses meet prevailing wage and apprenticeship requirements, and since 2023, charging property is eligible for the credit only if it is placed in low-income or rural areas. In other words, the legislation forces the installation of charging stations in locations not otherwise profitable to install and operate. Here too, however, the Department of the Treasury quickly stepped in with guidance that broadened subsidy eligibility such that nearly two-thirds of the population would qualify.[24]

The gross misalignment of EV policy objectives—increasing their adoption by subsidizing purchases and increasing domestic production at the cost of pricing pressures—is not the only IRA concern. Another is the relative newness of the technology the credits are intended to subsidize, locking in billions of government investment dollars for products consumers may not be ready to embrace. For example, the Biden administration "backdoored" a public EV mandate in April 2023 with proposed tailpipe emissions standards that "would effectively require that electric vehicles make up two-thirds of car sales in 2032."[25]

Whether via subsidies or mandates, government planning is not an effective means to stimulate innovation. Citing data on the falling momentum of EV sales, the American Enterprise Institute's James Pethokoukis notes that formulating a plan to design the future of the American auto industry through tough rules on tailpipe emissions to force automakers to sell more EVs "isn't the same as successfully executing" such a plan.[26] As is often the case, the government does not have the information necessary to choose the right technology and is not nimble enough to respond to changes in the market.

Indeed, recent data shows auto companies taking heavy losses on EVs and, in turn, reducing production significantly—as much as 50 percent in the case of some models—despite the extensive subsidies.[27] The Biden administration finalized its tailpipe emissions rules in March 2024. Though the requirements are somewhat relaxed in the early years, in an apparent

23 William McBride and Daniel Bunn, "Repealing Inflation Reduction Act's Energy Credits Would Raise $663 Billion, JCT Projects," *Tax Foundation* (blog), June 7, 2023, https://taxfoundation.org/blog/inflation-reduction-act-green-energy-tax-credits-analysis/.
24 The Editorial Board, "An EV Charger for Everyone—Courtesy of Taxpayers," *The Wall Street Journal*, January 28, 2024, https://www.wsj.com/articles/electric-vehicle-chargers-subsidies-treasury-department-joe-manchin-5a7c1512.
25 The Editorial Board, "Congress Takes On the EV Mandate," *The Wall Street Journal*, December 4, 2023, https://www.wsj.com/articles/congress-electric-vehicle-mandate-biden-administration-house-republicans-31329e8c.
26 James Pethokoukis, "Biden's EV Rules 'Demonstrate to Men How Little They Really Know about What They Imagine They Can Design,'" American Enterprise Institute, February 26, 2024, https://www.aei.org/economics/bidens-ev-rules-demonstrate-to-men-how-little-they-really-know-about-what-they-imagine-they-can-design/.
27 David Shepardson and Nathan Gomes, "Ford Cuts F-150 Lightning Production as EV Demand Softens," Reuters, January 19, 2024, https://www.reuters.com/business/autos-transportation/ford-reduce-f-150-lightning-production-2024-01-19/; "Ford+ Again Attracts New Customers, Drives Growth in Q3; Company Changing How It Works to Improve Quality, Costs," Ford Motor Company, accessed February 20, 2024, https://s201.q4cdn.com/693218008/files/doc_financials/2023/q3/Ford-Again-Attracts-New-Customers-Drives-Growth-in-Q3-Company-Changing-How-it-Works-to-Improve-Quality-Costs.pdf.

admission that they would not be economically feasible, they nevertheless aim for nearly the same ultimate emissions reduction targets that were originally envisioned.[28]

Meanwhile, EV sales growth is cooling amid consumer concerns over reliability and availability of charging stations,[29] as consumers are demonstrating a preference for hybrid models that do not qualify for the Biden administration's subsidies. Yet the subsidies have proven themselves true budget busters, thanks to changes in guidance and regulations; contradictory goals (e.g., increasing costs via sourcing and union requirements vs. encouraging consumer adoption through lower prices); and wasteful spending on EV-related industry lobbying and gamesmanship.[30] The latest estimates from the Congressional Budget Office indicate the totality of the IRA energy credits will aggregate to $786 billion over the next decade—enough to completely offset any deficit-reducing effect the IRA could muster.[31]

Interfering in consumer and business choices by distorting relative prices, micromanaging supply chain and sourcing decisions, and consuming billions of taxpayer dollars does not add up to an efficient approach to encourage investment in new technologies. That is especially true if consumers are undecided about the viability and convenience of the technology.[32]

CHIPS Semiconductor Investment Tax Credits

The CHIPS Act provided $24 billion in semiconductor tax credits and another $52.7 billion of direct subsidies for the industry.[33] These credits and subsidies were motivated in part by the chip shortage amid the pandemic and concerns about China's own industrial policy toward semiconductors.

Semiconductor manufacturing facilities, or foundries, and their related manufacturing equipment are extremely expensive and cannot be built quickly. When finally up and running, the manufacturing process is time-consuming; semiconductor output does not always scale with volume and can be subject to high waste rates compared to less difficult production efforts. Complex tax credits and subsidies will not work to relieve temporary chip shortages, nor are they the right tools to encourage long-term investment.

Under current law, investment in industrial factories, such as a semiconductor foundry, cannot be deducted immediately but instead must be deducted over a 39-year period. Tax treatment of short-lived assets, such as much of the machinery and equipment required to populate a foundry, also prohibits immediate deduction. R&D expenses, obviously crucial to the semiconductor industry, must be amortized over five years. The tax code seems to go out of its way to fabricate arduous barriers to semiconductor manufacturing investment.

To qualify for the new semiconductor subsidies, as detailed in a 75-page notice, applicants must meet a

28 Matthew Daly and Tom Krisher, "EPA issues new auto rules aimed at cutting carbon emissions, boosting electric vehicles and hybrids," Associated Press, March 20, 2024, https://apnews.com/article/epa-electric-vehicles-emissions-limits-climate-biden-e6d581324af51294048df24269b5d20a.
29 Camila Domonoske, "The Journey toward Electric Vehicles Has Hit a Rough Patch. Sales Are Cooling Off," National Public Radio, January 31, 2024, https://www.npr.org/2024/01/31/1228067622/the-journey-toward-electric-vehicles-has-hit-a-rough-patch-sales-are-cooling-off.
30 Phred Dvorak, "What Does 'Made in America' Mean? In Green Energy, Billions Hinge on the Answer," *The Wall Street Journal*, March 23, 2023, https://www.wsj.com/articles/what-does-made-in-america-mean-in-green-energy-billions-hinge-on-the-answer-6e2471c5.
31 Alex Muresianu and William McBride, "Major Takeaways from CBO's Updated Long-Term Outlook," *Tax Foundation* (blog), February 13, 2024, https://taxfoundation.org/blog/us-deficit-cbo-budget-economic-outlook/.
32 Dan Neil, "You've Formed Your Opinion on EVs. Now Let Me Change It," *The Wall Street Journal*, January 19, 2024, https://www.wsj.com/lifestyle/cars/youve-formed-your-opinion-on-evs-now-let-me-change-it-6c6fd1c1?mod=lifestyle_lead_story.
33 *The CHIPS and Science Act: Here's what's in it*, McKinsey and Company (October 4, 2022), https://www.mckinsey.com/industries/public-sector/our-insights/the-chips-and-science-act-heres-whats-in-it.

host of criteria unrelated to increasing semiconductor investment and output.[34] The requirements include, but are not limited to, a detailed explanation of a firm's expected benefits from the investment tax credit, plans for workforce needs, descriptions of "whether and how they plan to utilize iron, steel, and construction materials produced in the United States as part of their projects," and "an equity strategy, in concert with their partners, to create equitable workforce pathways for economically disadvantaged individuals in their region."[35] Applications are to be judged on a firm's commitment to "refrain from stock buybacks." If applicants are requesting more than $150 million in funding, the Department of Commerce will require plans for workers to access childcare as well as "Upside Sharing" of a portion of "excess profits" with the federal government.[36]

As of April 2024, more than $23 billion in grants have been awarded to semiconductor firms, including three large multibillion dollar awards.[37] Though significant sums of government subsidies are going out the door, other barriers remain in place. For instance, a shortage of skilled workers is already delaying US semiconductor plant openings, providing an early warning that CHIPS funding may indeed be a waste of taxpayer money.[38] Finally, despite the recent announcements of significant funding, many U.S. Chips manufacturers are delaying and/or scaling back planned investments due to bureaucratic hurdles put in place by the Biden Administration—including Intel, the Taiwan Semiconductor Manufacturing Company (TSMC), and Samsung.[39]

A final foundational concern regarding both the green energy credits and the semiconductor subsidies and credits remains: rather than promote innovation and competitiveness, they risk insulating firms from the competitive forces that drive innovation, thereby fostering endless dependence on government assistance. That is precisely the opposite of what America's industries need to do to create value and employ workers.[40]

Tariffs on Steel, Aluminum, and Goods from China

In another ill-advised effort to boost specific industries, the Trump administration increased import taxes on washing machines and solar panels, steel and aluminum, and a wide range of goods from China. These actions totaled $80 billion in new taxes annually, based on 2018 import levels.[41] According to the Trump administration, the tariffs would revive the manufacturing sector and create jobs in the United States.[42] However, a wide range of analyses indicates those misguided promises have not been met.[43]

There is little reason to believe that tariffs can boost domestic output overall. Instead, they redistribute income from consumers and downstream industries to government coffers and to the industries lucky enough (or connected enough) to receive government protection. Indeed, the economic literature indicates this is the case in the trade war the US has been in since early 2018.[44]

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34 National Institute of Standards and Technology, "Notice of Funding Opportunity (NOFO) CHIPS Incentives Program—Commercial Fabrication Facilities," US Department of Commerce, accessed February 20, 2024, https://www.nist.gov/system/files/documents/2024/04/19/Amended%20CHIPS-Commercial%20Fabrication%20Facilities%20NOFO%20Amendment.pdf.
35 National Institute of Standards and Technology.
36 National Institute of Standards and Technology.
37 Semiconductor Industry Association, "Commerce Department Announces First CHIPS Grant Recipients," accessed April 24, 2024, https://www.semiconductors.org/chips-incentives-awards/.
38 Henry Kressel, "The Challenge of Reviving US Chip Industry," *Asia Times*, January 31, 2024, https://asiatimes.com/2024/01/the-challenge-of-reviving-us-chip-industry/.
39 Matt Cole and Chris Nicholson, "DEI Killed the CHIPS Act," The Hill, March 7, 2024, https://thehill.com/opinion/4517470-dei-killed-the-chips-act/#:~:text=The%20law%20contains%2019%20sections,Inclusion%E2%80%9D%20instructs%20the%20Department%20of.
40 Scott Lincicome, "Should the U.S. Government Subsidize Domestic Chip Production?," CATO Institute, February 27, 2022, https://www.cato.org/commentary/should-us-government-subsidize-domestic-chip-production.
41 Erica York, "Tracking the Economic Impact of U.S. Tariffs and Retaliatory Actions," *Tax Foundation*, July 7, 2023, https://taxfoundation.org/research/all/federal/tariffs-trump-trade-war/.
42 Ana Swanson, "Trump to Impose Sweeping Steel and Aluminum Tariffs," *New York Times*, March 1, 2018, https://www.nytimes.com/2018/03/01/business/trump-tariffs.html.
43 Erica York, "Trump-Biden Tariffs Hurt Domestic Manufacturing," *Tax Foundation*, December 1, 2021, https://taxfoundation.org/blog/trump-biden-tariffs-manufacturing/.
44 Max Zahn, "Donald Trump wants to escalate a US trade war. Did it work the first time?" ABC News, February 25, 2024, https://abcnews.go.com/US/donald-trump-escalate-us-trade-war-work-time/story?id=107448832.

No reputable study has found that tariffs lead to job creation or higher production overall. For example, a recent study from David Autor and others concludes, "The trade war has not to date provided economic help to the US heartland," import tariffs had "neither a sizable nor significant effect on US employment in regions with newly protected sectors," and foreign retaliation "by contrast had clear negative employment impacts, particularly in agriculture."[45]

In fact, most studies find net losses in employment and output. Accounting for benefits to protected companies and costs to companies that faced higher input prices and retaliatory tariffs, a Federal Reserve study found a decrease in manufacturing employment due to the tariffs.[46] The positive contribution from protected industries was significantly outweighed by the effects of rising input costs and retaliatory tariffs.[47] The Federal Reserve concluded, "We find the impact from the traditional import protection channel is completely offset in the short run by reduced competitiveness from retaliation and higher costs in downstream industries."[48]

Finally, a report from the US International Trade Commission (USITC) regarding tariffs on steel, aluminum, and Chinese goods found a "nearly one-to-one increase in prices of U.S. imports following the tariffs."[49] Echoing the Federal Reserve study, the USITC found that while steel and aluminum tariffs boosted domestic steel production by about 1.9 percent, or $1.5 billion per year on average, and domestic aluminum production by about 3.6 percent, or $1.3 billion per year on average, domestic production in downstream industries decreased 21 percent more than any purported benefit, or $3.4 billion per year on average.[50] Notably, the USITC review was not comprehensive, as it considered only a subset of downstream industries most likely to be negatively affected by the tariffs. The aggregate impact across all affected industries may well have been worse.

The economic studies leave no doubt that tariffs have, overall, a negative impact on the US economy—including manufacturing especially—by reducing output, employment, and incomes.

A Better Solution

Our tax system maintains broad penalties for capital-intensive industries through long depreciation schedules but provides, for certain investments and industries, special subsidies to compensate for those penalties. If the tax code would treat capital investment neutrally, the need for short-term or industry-specific tax breaks could be almost zeroed. The need for a better solution is both clear and simple: rather than actively harming the manufacturing sector with punitive cost recovery rules, policymakers should immediately prioritize improved cost recovery rules.

Machinery, Equipment, and Software Investment

Over the years, Congress has offset some of the bias against manufacturing by temporarily allowing immediate deductions for short-lived assets (such as equipment) through bonus depreciation. The TCJA of 2017 provided 100 percent bonus depreciation through 2022 but scheduled it to phase out at the end

45 David Autor, Anne Beck, David Dorn, et al., "Help for the Heartland? The Employment and Electoral Effects of the Trump Tariffs in the United States," National Bureau of Economic Research, Working Paper No. 32082, January 2024, https://www.nber.org/system/files/working_papers/w32082/w32082.pdf.
46 Aaron Flaaen and Justin Pierce, "Disentangling the Effects of the 2018–2019 Tariffs on a Globally Connected U.S. Manufacturing Sector," Finance and Economics Discussion Series (FEDS), Board of Governors of the Federal Reserve System, May 26, 2020, https://doi.org/10.17016/FEDS.2019.086.
47 Flaaen and Pierce.
48 Flaaen and Pierce.
49 "Economic Impact of Section 232 and 301 Tariffs on U.S. Industries," The US International Trade Commission, Investigation No. 332–591, USITC Publication No. 5405, May 2023, https://www.usitc.gov/publications/332/pub5405.pdf?source=govdelivery&utm_medium=email&utm_source=govdelivery.
50 U.S. International Trade Commission.

of 2026.[51] To improve investment incentives, Congress should restore 100 percent full expensing for short-lived assets on a permanent basis.

Research and Development Investment

Since the beginning of 2022, a TCJA directive requires companies to deduct their R&D costs over five years for domestic efforts and 15 years for offshore efforts.[52] Prior to this change, companies could deduct the full cost of the expense immediately, a feature of the tax code dating back to at least 1954.[53]

As we have seen, the requirement to amortize raises the cost of R&D investments while increasing the tax burden on those firms looking to invest and grow long term. To improve investment incentives, Congress should restore R&D expensing permanently for all varieties of R&D expenses.

Structures Investment

Structures investment faces some of the longest depreciation schedules: commercial buildings such as factories must be depreciated over 39 years, while residential structures must be depreciated over 27.5 years. Full expensing for structures investments presents unique policy challenges. Investments in structures are large and lumpy; if a business does not have adequate revenue to absorb the full deduction, it generates a net operating loss that must be carried forward, resulting in a tax treatment similar to taking depreciation deductions over time.[54]

The extent of the deductions also presents a challenge for the federal budget. Businesses with legacy investments would continue to take their deductions over time, while new investments would be immediately deducted. This would create a significant up-front increase in deductions and decrease in federal revenue. As legacy deductions fall, the cost of the policy falls too, but the high up-front cost within the budget window would drive a temporary although significant hit to the federal deficit.

A solution exists: a policy of neutral cost recovery, which adjusts depreciation deductions for inflation and the time value of money, provides an economically equivalent alternative to full expensing. Businesses would still wait to take their deductions for structures investment over time, but they would be made whole for the delay by the use of neutral cost-recovery adjustments.

Interest Limitation

Prior to the enactment of the TCJA, businesses were generally allowed to deduct their total amount of interest paid, subject to a few minor limitations. The TCJA established a new limit on the deduction for business interest paid to reduce the tax code's preference for debt over equity.[55] Beginning in 2018, the limit generally disallowed companies from deducting net interest above 30 percent of their "adjusted taxable income," defined as earnings before interest, taxes, depreciation, and amortization (EBITDA).[56] In 2022, the limit was tightened significantly by abandoning EBITDA for earnings before interest and taxes (EBIT).[57]

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51 Erica York, Huaqun Li, Daniel Bunn, Garrett Watson, Cody Kallen, "The Economic, Revenue, and Distributional Effects of Permanent 100 Percent Bonus Depreciation," *Tax Foundation*, August 30, 2022, https://files.taxfoundation.org/20220830121826/The-Economic-Revenue-and-Distributional-Effects-of-Permanent-100-Percent-Bonus-Depreciation-v2.pdf
52 Kyle Pomerleau, "R&D and the TCJA: The Basics," *American Enterprise Institute*, January 9, 2024, https://www.aei.org/economics/rd-and-the-tcja-the-basics/.
53 "Tax Treatment of Research Expenses: Current Law and Policy Issues," *Congressional Research Service*, December 19, 2022, https://crsreports.congress.gov/product/pdf/IN/IN11887.
54 See discussion in Stephen J. Entin, "Tax Treatment of Structures Under Expensing," *Tax Foundation* (blog), May 24, 2017, https://taxfoundation.org/blog/tax-treatment-structures-expensing/.
55 Kyle Pomerleau, "The Treatment of Business Interest Expense in the TCJA," *American Enterprise Institute*, May 10, 2021, https://www.aei.org/articles/the-treatment-of-business-interest-expense-in-the-tcja/.
56 Pomerleau.
57 Pomerleau.

Basing the limitation on EBIT rather than EBITDA makes the United States an outlier with respect to international norms—no other country in the Organization for Economic Co-operation and Development uses EBIT to limit interest deductions.[58] Rather, the most common international limit is 30 percent of EBITDA, which is what the United States used prior to 2022.[59] This modification has disproportionately harmed capital-intensive industries such as manufacturing.[60] Returning to EBITDA would realign the US tax system with other nations and would modestly improve investment incentives, especially in light of today's higher interest rates.

Economic and Revenue Effects of Four Business Tax Reforms

In Table 2, we see that these four improvements to the tax code—100 percent full expensing, R&D expensing, neutral cost recovery for structures, and an EBITDA-based interest limitation—would increase long-run Gross Domestic Product (GDP) by 1.8 percent, capital stock by 3.4 percent, wages by 1.5 percent, and hours worked by 347,000 full-time equivalent jobs, according to Tax Foundation estimates.

Within the 10-year budget window, revenue would fall by $697 billion on a conventional basis. Factoring in the positive impact on the economy and the additional tax revenues the larger economy would generate, the cost of the reforms would drop by more than 75 percent—reducing revenue by only $170 billion on a dynamic basis.

By year 11, the numbers turn the corner—dynamic revenues start increasing above the baseline. The long-run debt-to-GDP ratio would decrease 6.3 percentage points because of the boost to output. Repealing the IRA (now estimated to cost upward of $786 billion over the decade) and CHIPS tax credits would improve fiscal sustainability further by raising enough revenue to offset the conventional revenue of broad cost recovery improvements.[61]

TABLE 2. Economic and Revenue Effects of Better Cost Recovery Policies

Long-Run GDP	1.80%
Capital Stock	3.40%
Wages	1.50%
Full-Time Equivalent Jobs	347,000
Conventional Revenue, 2024–2033	-$697 billion
Dynamic Revenue, 2024–2033	-$170 billion
Dynamic Change in Long-Run Debt-to-GDP	-6.3 percentage points

Source: Tax Foundation General Equilibrium Model, February 2024.

58 Garrett Watson and William McBride, "U.S. Businesses Face Growing Impact from Tightened Interest Deductions and Higher Interest Rates," *Tax Foundation* (blog), September 12, 2023, https://taxfoundation.org/blog/ebitda-us-business-interest-expense-limitation/.
59 Garrett Watson, "Tighter Limits on U.S. Interest Deductibility Make U.S. an Outlier and Increase Pain of Rising Interest Rates," *Tax Foundation*, December 5, 2022, https://taxfoundation.org/blog/business-interest-deduction-limitation/.
60 NAM News Room, "Manufacturers Push for Tax Deduction Extension," National Association of Manufacturers, December 15, 2020, https://nam.org/manufacturers-push-for-tax-deduction-extension-11365/.
61 Muresianu and McBride, "Major Takeaways from CBO's Updated Long-Term Outlook."

A Comprehensive Tax Reform Plan

Full expensing for all capital investment would markedly improve the US tax system. But in the longer term, lawmakers should consider an even more substantial overhaul of business taxes, perhaps modeled after successful international examples. Forward-looking action like this would provide growth and opportunity for workers and businesses in the United States, significantly reduce business tax compliance costs, and put all types of businesses on a level playing field.

One such approach proposed by the Tax Foundation, based on the Estonian tax system, would transform the current taxation of corporate and noncorporate business income with a flat tax of 20 percent on distributed profits from businesses.

Under this approach to tax reform, the entire business tax system would be replaced with a 20 percent entity-level tax on distributed profits, including dividends and net share repurchases. By taxing profits only when they are distributed, the business tax reform places no tax on retained earnings, creating a powerful incentive for growth and investment, not to mention massively simplifying our US business tax structure.

As seen in Table 3, the Tax Foundation estimates this reform would increase long-term GDP by 1.8 percent, increase capital investment by 3.4 percent, raise wages by 1.4 percent, and add 429,000 full-time equivalent jobs.

TABLE 3. Economic and Revenue Effects of a Distributed Profits Tax Reform

Long-Run GDP	+1.8%
Capital Stock	+3.4%
Wages	+1.4%
Full-Time Equivalent Jobs	+429,000

Source: Tax Foundation General Equilibrium Model, June 2023.

Conclusion

US economic policy has veered toward inefficient subsidies for politically favored industries while burdening unpreferred industries with a tax system that deters investment. It is not too late for lawmakers to correct course and adopt better policies to encourage investment and jobs across all of America's industries. Full and immediate deductions for R&D and machinery, combined with neutral cost-recovery adjustments for structures, is a far more efficient and fiscally responsible alternative to the budget-busting industrial policies Congress recently enacted. Rather than shift resources around through distorting subsidies and tariffs, lawmakers should reduce the cost of capital across the entire economy by means of reasonable and unbiased business tax policies.

In the long term, tax reform for businesses could further improve incentives to work and invest, leading to even more opportunities for American workers and companies. Pro-growth tax policies will unshackle American manufacturing and should be prioritized by policymakers working to strengthen American industrial capacity.

About the Author

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