

# INDUSTRIAL POLICY AND PLANNING:

What It Is and How to Do It Better

REPORT BY **TODD TUCKER**  
JULY 2019





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## ACKNOWLEDGMENTS

The author thanks Heather Boushey (Equitable Growth), Billy Fleming (University of Pennsylvania), Geoff Gertz (Brookings Institution), and the Roosevelt Institute's Nell Abernathy, Jennifer M. Harris, and Mark Paul for their comments and insight on an earlier draft of this paper. I also thank my mentor Ha-Joon Chang of the University of Cambridge and his many other students, who are contributing cutting-edge research and policy advice on industrial policy around the world. Roosevelt staff Kendra Bozarth, Jess Forden, Debarati Ghosh, Matt Hughes, Mike Konzcal, Rakeen Mabud, Steph Sterling, Victoria Streker, and Ariela Weinberger all contributed to the project.

*We thank the Open Society Foundations for their support of this project.*

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# Executive Summary

This report offers an introduction to the concept of industrial policy and planning. We will define what it is, where it has worked, and how to do it better—proposing five criteria to evaluate any plans in this space. Unlike generic fiscal and monetary policy, industrial policy is not neutral. Instead, it influences the allocation of labor and capital *among* the over 1,000 industries in the economy—encouraging some activities and discouraging others. While it is possible to have an industrial policy without an economy-wide planning process (i.e., on an ad hoc basis for one industry at a time), it is preferable to have both, with a strong national mission at their center. This is why we use the phrase “industrial policy *and* planning.”

Our report is divided into several sections:

First, we define industrial policy and planning as a *horizontal* lever of state power that influences the distribution of income among industries. We describe some of its major tools and the way they impact industry’s inputs, outputs, governance, and coordination.

Second, we briefly examine some of the non-US cases where industrial policy and planning has worked. In just decades, South Korea—an iconic model of industrial policy—has skyrocketed from African development levels to rich-country status; China, too, has made historic income gains with intentional industrial planning—most famously, the Made in China 2025 agenda and the Belt and Road Initiative.

Third, we examine how racism, courts, and neoliberalism got in the way of a comprehensive industrial plan in the US—though not in the way of ad hoc individual industrial policies. Indeed, US industrial policy was at its height during World War II, when the federal government managed the entire economy. This period saw the highest growth rates in recorded US history—a clear demonstration that strategic government intervention is an economic boon rather than bane.

Fourth, we outline a series of five design decisions that policymakers should take into account when implementing more thoughtful, democratic, and inclusive industrial policy and planning here at home. A Green New Deal, with its focus on supporting jobs for the working class, women, and people of color, could be one such opportunity.

Fifth, we address some of the key criticisms of industrial policy and planning and explore how an alternative approach might address these.



# Introduction

After a few decades' absence, industrial policy is back in the national conversation, with support from leading academics, grassroots movements, a bipartisan cross-section of politicians including Elizabeth Warren (D-MA) and Marco Rubio (R-FL), and even the once-skeptical International Monetary Fund (IMF). In July 2019, newly elected Senator Josh Hawley (R-MO) gave a speech that was the latest indication of this trend, calling for the government to shrink finance and grow manufacturing (Hawley 2019). Nonetheless, there is little agreement on how to define industrial policy and how it might be implemented effectively, sustainably, and inclusively in the United States.

One of the biggest myths in American politics is that—unlike our allies and competitors—the US does not practice industrial policy and instead operates on purely neoliberal or free-market principles. Yet our country does have ad hoc measures that amount to an inadvertent industrial policy favoring the wealthy and connected. It funds biomedical and telecommunications research that it gifts to pharmaceutical and technology companies, who profit from these innovations through intellectual property protections. It procures fighter jets and nuclear weapons from defense contractors. It underwrites and backstops the private mortgage market and financial industry, both of which occupy an outsized share of economic activity and rents relative to the number of people they employ. Finally, it gives privileged access to all these industries to shape public policies on matters ranging from international trade agreements to the domestic tax code.

For the last few years, the Trump administration has deployed a subset of industrial policy: trade policy. The president began his campaign launch speech in June 2015 with a tirade about the “China shock”—the rapid growth in Chinese exports to the United States. But rather than emulate or draw from their experience (which required considerable industrial policies and government investment in the economy), President Trump's signature policy achievements have been cutting government revenue and imposing tariffs on Chinese products. Rather than helping American workers and companies compete in a global economy with pervasive state capitalist influence, Trump's blunt tariffs and threats (often rescinded for cheap concessions) amount to a floundering nostalgia for a past economy that (at its best, performance-wise) excluded too many Americans.

There is an alternative to neoliberalism and Trumpism that we outline in this report: democratic industrial policy and planning.



## SECTION ONE

# Defining Industrial Policy and Planning

We define **industrial policy** as any government policy that encourages resources to shift from one industry or sector into another, by changing input costs, output prices, or other regulatory treatment. We define **industrial planning** as an intentional economy-wide aggregation of and coordination among individual industrial policies. In this section, we define how industrial policy and planning is different from and interacts with other types of policy, explore some of the specific policy tools involved, and analyze how our definition compares to those used by other scholars.

## HOW IS INDUSTRIAL POLICY DIFFERENT FROM OTHER POLICIES?

Industrial policy and planning is distinct from generic fiscal and monetary policies, and each can be thought of as different levers that policymakers have at their disposal to affect economic outcomes.

**Industrial policy and planning:** a **horizontal** lever that distributes resources among industries

**Fiscal policy:** a **vertical** lever that redistributes income among classes and income brackets

**Monetary policy:** a **temporal** lever that redistributes income among time periods and generations

Industrial policy and planning is not the only horizontal policy. It bears close resemblance to and intersects with other non-class, non-generational means of domestic redistribution. Transfers from richer to poorer *geographic* regions are also horizontal; indeed, industrial plans almost always have a spatial logic that seeks to cultivate or tap into industry clusters in certain states or provinces and not others. Similarly, industrial policies in rhetoric or effect often have differential implications for different *races* and *genders* (another type of horizontal social relationship). Examples of the interactions between different types of industrial policy include the World War II wartime mobilization, which converted auto factories to arms production and brought more women onto assembly lines, and Donald



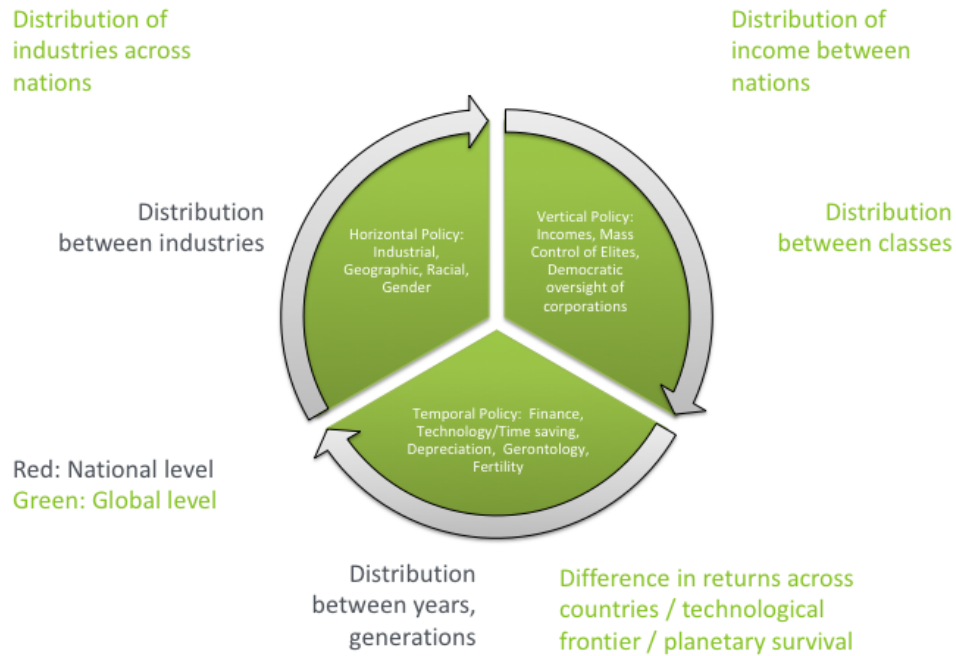
Trump's championing of the steel and coal industries, which are seen (rightly or wrongly) as the job turfs of white men. As we argue below, historically, industrial policy has failed to take off in the US due to racial and gender cleavages.

In practice, all three levers—horizontal, vertical, and temporal—interact. For example, horizontal industrial policies that allow more cheap imports affect how much of an industry's gains workers can capture for themselves. If workers do not bring home enough in pre-tax income, then the state may have to step in to redistribute post-tax income from owners to workers (a vertical lever). To take another example, the mortgage interest deduction is a horizontal industrial policy that favors housing at the expense of other industries, but it is also a temporal policy that affects intertemporal savings behavior. Indeed, good industrial policy often involves considerable time lags; a high-speed rail from Dallas to Houston, for instance, could take a decade to construct. Patient investment in government capital with long time horizons is essential.

Finally, all three levers (horizontal, vertical, and temporal) have **international** dimensions that also interact. On a horizontal level, just as there is a geographic spread of industries *within* nations, industries cluster across nations as well. This distribution can be a result of comparative advantage in trade or of industrial policy. Some nations have cultivated a higher share of the finance and mortgage markets than others, which can generate crises that spread across borders—as happened during the 2008 financial crisis (Tooze 2018). Likewise, there is a vertical international distribution of riches. The top 1 percent of wealth-holders internationally (those with a net worth of greater than \$871,320) have 47 times more wealth than the bottom half (Elkins 2018). Finally, life on the planet as a whole faces temporal limits that can be influenced by policy—climate change being the prime example. If government decides to give greater weight to future generations, it can adopt policies to incur costs now in order to gain benefits in the future. Our conceptual scheme is depicted in Figure 1.



**FIGURE 1: DISTINGUISHING INDUSTRIAL POLICY AND PLANNING FROM OTHER POLICY LEVERS**



## WHAT TOOLS ARE INVOLVED IN INDUSTRIAL POLICY?

To many observers, industrial policy is a euphemism for imposing tariffs; in reality, the industrial policy toolkit is expansive and multipronged. Such tools include measures that aim to make **inputs** to a given industrial process (labor, capital, and other **supplies**) more expensive, less expensive, unavailable, or of different quality; make the **outputs** of an industry easier, harder, or impossible to sell on the **market**; alter industrial **governance and ownership** structures; and **coordinate** between the previous measures. In practice, many tools affect inputs, outputs, ownership, and coordination simultaneously. Table 1 provides examples of each type of tool.



**TABLE 1: INDUSTRIAL POLICY TOOLKIT**

Industrial Policy Aimed at...	Tools Include
Inputs / Supplies	<p><b>government spending</b>, such as when the Department of Transportation makes choices about whether to give grants to roads, ports, or railroads that make it easier for firms to get supplies—or gives formula funding to states to make these decisions</p> <p><b>labor retraining</b> and <b>adjustment assistance</b> provided by the Department of Labor to help workers move from sunseting industries to growing industries</p> <p><b>immigration policy</b>, such as when the Department of Homeland Security administers an H-2A visa to encourage the entry of temporary agricultural workers, but various licensing restrictions discourage the entry of lawyers and doctors</p> <p><b>education policy</b>, to the extent it encourages workers to go into fields like engineering instead of Latinx studies</p> <p><b>product-specific research and development</b> by the Defense Advanced Research Projects Agency</p> <p><b>prizes and bounties</b>, whereby the government announces an objective (say, curing cancer or designing voice-recognition software) and the first company or researcher to deliver receives a substantial check</p> <p><b>subsidies</b>, such as those provided by the Department of Agriculture to farmers who grow certain kinds of crops but not others (e.g., those who grow corn but not asparagus), or concessional loans by the Export-Import Bank to certain overseas projects but not others</p> <p><b>tariffs</b>, which the government collects and which raise the costs of inputs to supply chains</p>
Outputs / Market	<p><b>procurement</b>, where the government guarantees that a certain share of output will actually be sold. This includes the Department of Defense’s purchases of nuclear weapons components made by private companies</p> <p><b>product standards</b> set by agencies like the Consumer Product Safety Commission, which regulates industries like toy-making. By giving a federal blessing to the quality of a firm’s products, the government makes it more likely that an industry can sell its products on the open market</p> <p><b>bans or maximum quotas</b>, which limit or—in more extreme cases—prohibit an industry’s output. The Food and Drug Administration, for instance, bans flavored tobacco products. This means that there can be no market for outputs of, say, cola-flavored cigarettes</p> <p><b>market creation and underwriting</b>, where the government actually makes possible economic output that would not have been otherwise possible. This includes the Federal Housing Administration’s backstopping of the mortgage industry</p> <p><b>consumer subsidies</b>, which give families and firms an incentive to purchase certain industry products and not others. An example would include the Department of Transportation’s 2009 Car Allowance Rebate System, known as “cash for clunkers.” This gave federal rebates to consumers who traded in less fuel-efficient for more fuel-efficient cars</p>
Governance / Ownership	<p><b>bailouts</b> of the kind the Bush and Obama administrations undertook for Wall Street and the auto industry but not for other sectors. Unlike other countries, the US rarely takes ownership stakes when it makes bailouts</p> <p><b>nationalization</b>, such as when the National Railroad Passenger Corporation (also known as Amtrak) nationalized several railroads. While changing ownership alone doesn’t shift the railroad industry into the two-digit industry code for public administration, greater state involvement (or a ban on any private investment) affects inter-industry capital allocations</p> <p><b>antitrust enforcement</b> by the Federal Trade Commission and Department of Justice, which affects how concentrated ownership of corporations is allowed to be</p>
Coordination	<p><b>sectoral regulation</b> by agencies like the Federal Communications Commission, founded in 1934 to regulate radio, television, wire, satellite, and cable</p> <p><b>development banking</b>, where the government administers loans to some sectors and not others. Unplanned varieties in the US include the Export-Import Bank and the binational North American Development Bank capitalized by the US and Mexico; planned varieties include the development banks of China and Brazil</p> <p><b>non-regulation</b>, which influences which firm and industry returns are exempted from certain penalties. For instance, the Department of Justice is not currently enforcing anti-cartel rules against the National Association of Realtors. This has allowed broker fees to remain at up to 6 percent of the transaction value, even though the time brokers put into each sale has fallen (due in part to internet searches). In contrast, Canadian fees are half that and Australian fees one third (Ryan and Friedland 2019)</p>



## HOW OUR DEFINITION COMPARES TO OTHERS

Our definition of industrial policy and planning is different from that of other scholars. Political scientist Aaron Wildavsky defined it very broadly:

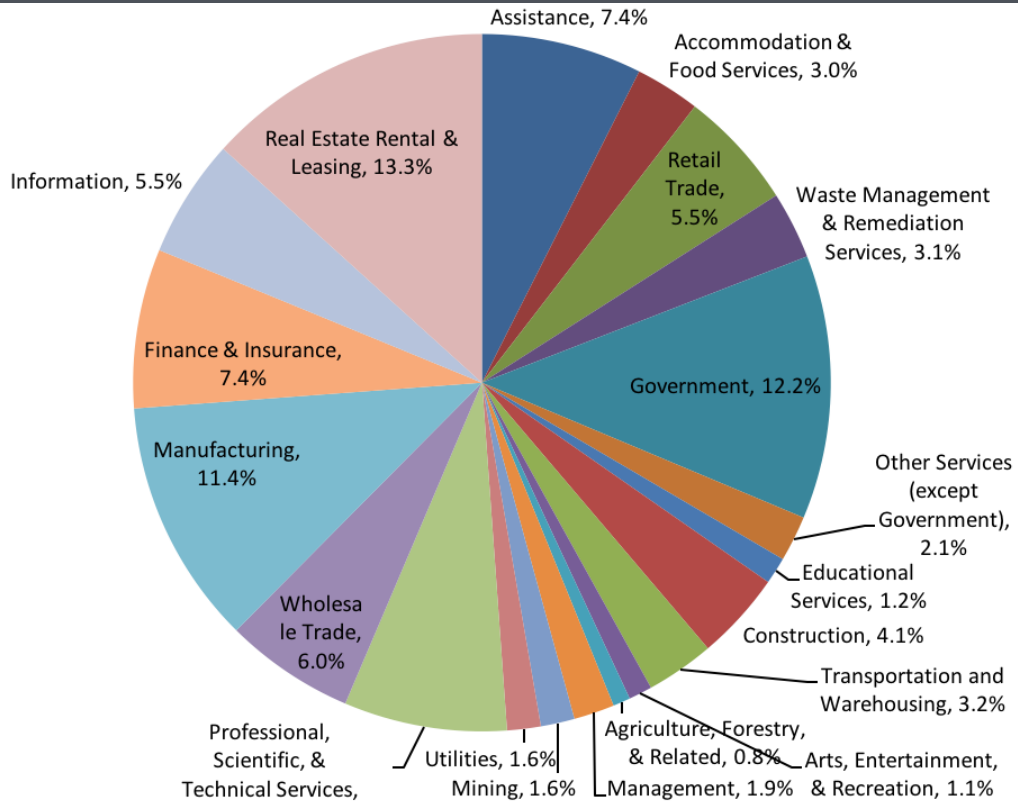
*Industrial policy is economic policy; its purpose is prosperity. It is more than that, however, for economic relationships vitally affect the distribution of political power. Broadly viewed, therefore, every country has an industrial policy roughly equivalent to its political economy. The price system is the industrial policy of capitalism, state planning of socialism, and some of each of the mixed economy. Not having an industrial policy is not possible. The absence of state direction merely means reliance on markets. Both the pattern of regulation and its absence constitute industrial policy. End of discussion. What is left? Only the details (Wildavsky 1986).*

This is exceptionally expansive, and not terribly useful. To quote Wildavsky himself, “If planning is everything, maybe it’s nothing” (Wildavsky 1973). Industrial policy can be distinguished from vertical and temporal policies, as well as from other horizontal policies, as we argue above.

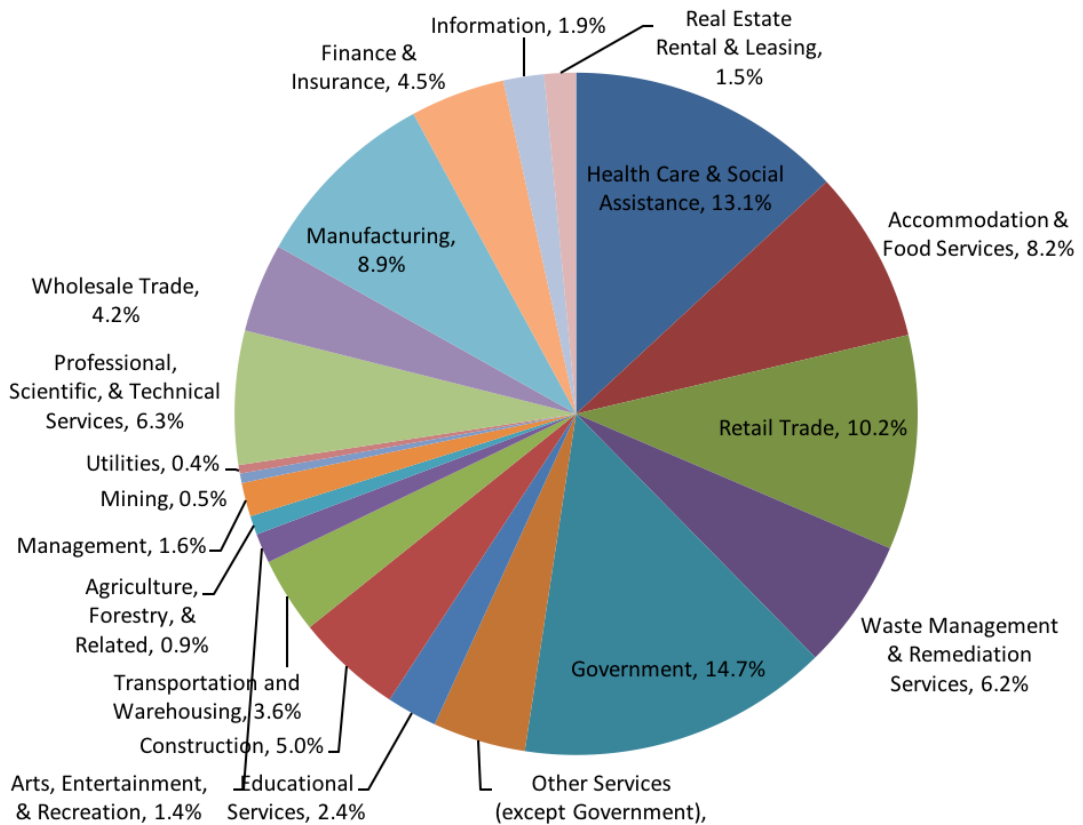
Scholars of economic development often use the term “industrial policy” much more narrowly than we do, pointing to policies that promote “industry” (defined as manufacturing rather than agriculture or services), which can help a country “industrialize” (meaning having a higher share of national economic activity tied up with manufacturing). Economist Ajit Singh, for instance, has written about the industrialization of developing nations. In this context, the ability to export takes on an outsized role because developing countries by definition import manufactured goods (Singh 1989, 111). While manufacturing is an important industrial sector, it is not the only or most important one, as we show in the figures below. Judging by contribution to GDP, both real estate and government are more central. By share of employed workers, government, health care, and retail are more dominant.



**FIGURE 2: CONTRIBUTION TO GDP BY INDUSTRY**



**FIGURE 3: CONTRIBUTION TO EMPLOYMENT BY INDUSTRY**



Our definition is closer to that of economists Mario Cimoli, Giovanni Dosi, and Joseph Stiglitz, who argue that industrial policies “come together with processes of ‘institutional engineering’ shaping the very nature of the economic actors, the market mechanisms and rules under which they operate, and the boundaries between what is governed by market interactions, and what is not” (Cimoli, Dosi, and Stiglitz 2009, 7-8). Or as Ha-Joon Chang puts it, an industrial policy is “a policy aimed at particular industries (and firms as their components) to achieve outcomes that are perceived by the state to be efficient for the economy as a whole” (Chang 2003,112). This notion of intentionality is important: As economist Mariana Mazzucato writes, it is up to the public sector to pick the *direction* of change (Mazzucato 2013). And far from being limited to developing countries, industrial policy and planning is highly relevant to efforts to transform developed economies into green ones, as noted by economists Tilman Altenburg and Dani Rodrik (Altenburg and Rodrik 2017).



## SECTION TWO

# Industrial Policy and Planning Has Worked

Does industrial policy and planning work? It has for many developing and now-developed countries. This section briefly highlights some of the major success stories, such as South Korea and China (which have emphasized how policies targeted at one industry can benefit others at different parts of the value chain), as well as the Netherlands (which has put sustainability and community participation at its center). Section III looks specifically at the American experience, and Section IV looks at some of the major criticisms of this toolkit.

## DEVELOPING COUNTRY EXPERIENCE

Industrial policy and planning is most often associated with developing countries. Among the classic case studies, political scientist Chalmers Johnson studied Japan's Ministry of International Trade and Industry, finding that government engineers eschewed markets (and economists' advice) and instead made state plans indicating which industries would be developed and when (Johnson 1982). Combatting mainstream perspectives that South Korea developed by liberalizing tariff rates, interest rates, and currency rates in the 1960s (essentially "getting the prices right" by removing government distortions and letting private actors make their own decisions), economist Alice Amsden documented the extensive and deliberate efforts of the government to get the "prices wrong"—so that steel and shipbuilding could be protected—and subsidize industries until they became globally competitive (Amsden 1989). Development scholar Robert Wade identified similar strategies in Taiwan (Wade 1990). Sociologist Peter Evans studied how South Korea, India, and Brazil jumpstarted information-technology industries through close but autonomous collaboration with private capitalists (Evans 1995). And more recently, Boston University economist Kevin Gallagher has documented how China's development model involved extensive state coordination of the industrial and financial sectors (Gallagher 2016). Even poorer countries like Vietnam, Uzbekistan, Ethiopia, and Rwanda have invested in recent years in their government's industrial policy capacity, thereby cultivating some globally competitive higher value-added industries (Chang, Hauge, and Irfan 2016).

A central insight of industrial policy research is that **policies directed at one industry can have spillover benefits for other industries**. Economist Albert Hirschman argued



that a dollar invested in a given project (say, a steel plant) would also increase demand for industries that supply inputs to steel factories. The latter are called “upstream” industries, and the overall relationship dynamic is called a “backward linkage.” Likewise, that dollar—if it is invested in making the steel plant more productive and its steel products cheaper—will supply a benefit to industries that use steel. Here, the latter are called “downstream” industries, and the relationship a “forward linkage” (Hirschman 1958). These relationships are modeled using input-output matrices that show how much given industries use of the outputs of other industries.

The South Korean development experience highlights this logic of interconnection. The country’s Heavy-Chemical Industry Drive was a six-year mobilization from 1973 to 1979 that subsidized six “strategic” sectors: steel, non-ferrous metals, shipbuilding, machinery, electronics, and petrochemicals. In a recent study, economist Nathan Lane compares downstream industries (users of the strategic sectors’ products) and finds that those with tighter links to their upstream providers grew relatively more in terms of business and job creation. However, policymakers sacrificed upstream sectors (the domestic makers of raw material and light manufacturing inputs used by the strategic sectors) by subsidizing imports of raw materials. Combined, the effect of the drive was an 80 percent output expansion in favored manufacturing industries compared to unfavored ones, leading to a lasting transformation of the Korean economy (Lane 2017).

China’s development trajectory has similar interconnected premises, though with even more direct state involvement. The country’s government has several levers at its disposal, including control over banks, interest rates, tax incentives, and state-owned enterprises that accumulate debt they may not pay back. Economist Ernest Liu’s granular study of the policy regime shows that these levers are applied differentially to different sectors of the economy. He identifies the industrial network’s key upstream nodes, which have what he calls high distortion centrality—meaning they sell disproportionate shares of their output to other sectors. Though this concept can be applied to any economy, in China the industries with the highest distortion centrality include iron, steel, and basic chemicals. The Chinese government favors those sectors with higher distortion centrality through lower interest rates, more debt relative to their capital, more tax incentives, and lower corporate income taxes. These practices have not only benefited the sectors themselves, but have added anywhere from 2.02 to 4.81 percent to China’s gross national income (Liu 2018). To put this in perspective, even the lower bound is higher than the US’s average growth rate since the year 2000. China’s overall growth rate, in contrast, was 9.3 percent on average over the period.

In sum, the US’s main rising competitors internationally have benefited from extensive state planning and ownership.



## DEVELOPED COUNTRY EXPERIENCE

While industrial policy is often associated with Asian economies, every now-developed country has also relied on industrial policy at some point in its history. Economist Ha-Joon Chang has described how English monarchs as far back as the 1300s used measures like tariffs on imports, tariff reimbursements, bans on the export of raw materials, poaching of foreign workers, movement of trade promotion missions abroad, and the personal example-setting of wearing only home-grown goods. As a result, England was able to transition from exporting raw wool to exporting finished wool products, displacing the Netherlands (the historic leader in that industry). Only once they achieved supremacy in this and other industries in the 1800s did England began significantly liberalizing trade flows. Germany, for its part, relied less on tariff protection and even more on direct state involvement—including granting corporate monopolies, promoting corporate cartels, and opening “model factories” to showcase new technologies to the private sector. Chang tells similar stories for France, Sweden, and other now-developed economies (Chang 2002). Indeed, *The Great Transformation*, the classic work by Karl Polanyi, shows how Western European states created the national markets on which prosperity rested (Polanyi 1944).

Industrial planning has also been a more recent practice of developed countries. From 1946 to 2006, France had an office called the Commissariat Général du Plan that engaged in so-called “indicative planning.” Every five years, the Commissariat would make a plan outlining the country’s goals and projections over the time period to come. While no industry was compelled to participate in it, many found the exercises valuable and saw them as a semiformal way for the government to communicate which investments it planned to make (Nielsen 2017) (Brunet 2018). While since abandoned, the French state continues to play a major role in private companies through direct ownership stakes. For example, the French government is carmaker Renault’s largest shareholder, accounting for 15 percent of the shares. When ex-chairman and CEO Carlos Ghosn engaged in financial misconduct but tried to maneuver to stay in command, the government officials who manage the state’s investments pressed Renault to replace him. They later installed their favored management and kept a careful eye on corporate expansion (Inagaki, Keohane, and Lewis 2019). **France thus uses public power to structure and guide private behavior**—one of the key motives for industrial policy explored in Table 1.

While France is the classic contemporary example, there are others; we list just a few here. For over 50 years, the Netherlands has made national plans to make the country more internationally competitive and its cities more livable. In recent years, its parliament has adopted a National Policy Strategy for Infrastructure and Spatial Planning for 2040, which aims to coordinate different policies with an eye toward challenges the country



will face in the coming decades. This is supplemented by the International Architecture Biennale Rotterdam (IABR), which brings together urban planners, architects, community organizers, and others to generate the best ideas on, for instance, the implementation of the Netherlands' Paris Agreement commitments. A "Room for the River" initiative facilitated the relocation of citizens away from floodplains (Zevenbergen et al. 2013) (Dubbeling 2016). Elsewhere, nearly 10 percent of Norwegians work in state-owned enterprises—above and beyond employees in more "traditional" public administration. This includes public ownership over the electricity market, which is 90 percent government-owned.<sup>1</sup> This structure enables the government to implement green policies more effectively, without having to buy off private actors. Finally, from 1988 to 2000, the German state of North Rhine-Westphalia invested 2.5 billion euros in helping transition the region from steel and coal employment to newer sectors. Over 120 interconnected projects rehabilitated unused factories and converted them into parks and cultural centers (Seltmann 2007).

As these experiences indicate, America's rich-country competitors use industrial policy and planning to rebuild after wars, mitigate the effects of climate change, and deal with de-industrialization. And—at their best—they do so in a democratic and participatory manner, not through Chinese-style, top-down authoritarianism.

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<sup>1</sup> See <https://energifaktanorge.no/en/om-energisektoren/eierskap-i-kraftsektoren/>.





## How Racism, Courts, and Neoliberalism Got in the Way of a Comprehensive American Industrial Plan (but Not Ad Hoc Industrial Policy)

There is a widespread perception that the US does not practice industrial policy. President Barack Obama’s economic advisor Larry Summers, for instance, criticized President-elect Donald Trump’s use of the bully pulpit to criticize companies that offshore jobs, saying American capitalism was based on a restrained state and a dominant market (Summers 2016). Similarly, critics of Marco Rubio’s industrial policy proposals claim they would undermine “America’s free enterprise system” (Rugy 2019).

In fact, the US is no different from any other country in its widespread use of horizontal levers like *industrial policy*. What makes it different is the absence of significant or sustained *industrial planning*—which has been frustrated by particularities of the US’s political and economic structure.

This section reviews the US industrial policy and planning record in four eras: the Hamiltonian (1790–1828), the Long Nineteenth Century (1829–1932), the New Deal/Golden Age (1933–1972), and the Neoliberal (1973–present). We will examine these in turn. Several key points are in order. First, **racism, sexism, the courts, federalism, and the lack of public investment in cultivating public industrial expertise were major obstacles to actually implementing industrial policy and planning**. Second, **planning worked best when paired with a national mobilization around an emergency like war**. Finally, it is only in the recent neoliberal era that industrial policy and planning has not been a prominent part of the US policy conversation. That conversation goes well beyond promoting a narrow sense of efficiency, and includes social, security, and even moral concerns. Readers not wishing for the level of detail provided here can skip ahead to the next section.

## RACISM BLOCKS PROGRESS IN THE HAMILTONIAN ERA (1790–1828)

Economists Stephen Cohen and Brad DeLong argue that the economic dominance of the US can be traced to a stream of visionary market-distorting state interventions—all the way back to four reports written by Alexander Hamilton and sent to Congress in 1790 and 1791 (Cohen and DeLong 2016). These included a Report on Public Credit (January 1790), a Report on a National Bank (December 1790), and a Report on the Constitutionality of the Bank of the United States (February 1791). The final installment was nearly twice as long as the longest of the previous three, his Report on the Subject of Manufactures. Small-scale agriculture was dominant in the young nation, and many of Hamilton’s political opponents wanted to keep it that way. Despite the agrarian reality surrounding him, Hamilton saw clearly that America’s future lay with manufacturing and the creation of new comparative advantages. Thus, **from the earliest days of the republic, industrial policy was seen as holding promise for America.**

Were the nation to follow a course of unfettered trade (like that in Adam Smith’s *The Wealth of Nations*, published in 1776—three months before the Declaration of Independence), it would forever remain an agricultural economy, at the mercy of its stronger competitors. Were it to move up the value chain and promote 17 sectors of manufacturing identified as important by Hamilton, the US would see seven benefits:

1. more division of labor and better use of people’s scarce time;
2. more extensive use of machines, which in turn induces craftsmen to learn to make them;
3. machines that, in turn, allow women and less skilled workers to find gainful employment;
4. increased immigration of foreign workers trained in manufacturing to help settle the nation;
5. greater life fulfillment and community enrichment;
6. diversification of activity that promotes the wealth of the nation as a whole, and can help bolster demand for the service sector (e.g., merchants);
7. the stable purchase of agricultural and fisheries products (“For the purpose of this vent, a domestic market is greatly to be preferred to a foreign one; because it is in the nature of things, far more to be relied upon.” In short, more manufacturing would actually bring benefits to farmers, who otherwise might be pushed in and out of work based on



global market fluctuations) (Hamilton 1791)<sup>2</sup>.

This type of holistic approach to the economy—emphasizing equality, quality of life, sustainability, and security—has much in common with modern proposals like the Green New Deal.

The toolkit Hamilton envisioned is similar to that of Section I. It included tariffs, which would generate revenue to reinvest in transportation infrastructure and a national financial system. He also considered “pecuniary bounties,” or what we would now call direct government investment in R&D. Though he worried the public looked down on bounties, he saw them as superior to tariffs in that they do not increase the price (or lower the quantity) of products available on the market, and can be more tailored to take advantage of backward linkages to the agriculture sector.

Hamilton also discusses

- import bans
- bans on the export of raw materials
- procurement
- tariff exemption for inputs
- drawback of tariffs
- intellectual property protections to encourage innovation
- government inspection and regulation to ensure the high quality of products
- increased financial liquidity and means of payment
- transportation infrastructure investments
- the avoidance of poll taxes and discretionary taxes.

He singled out iron, copper, lead, coal, wood, skins, grain, hemp, cotton, wool, silk, glass, gun powder, paper, book-printing, and refined sugar and chocolate. In each case, Hamilton offers a theory of government and of markets—what the incentives of individual officials are, how the public and private sectors can best interface, and what tools are most appropriate for which industries in light of their state of development and their relationship to other

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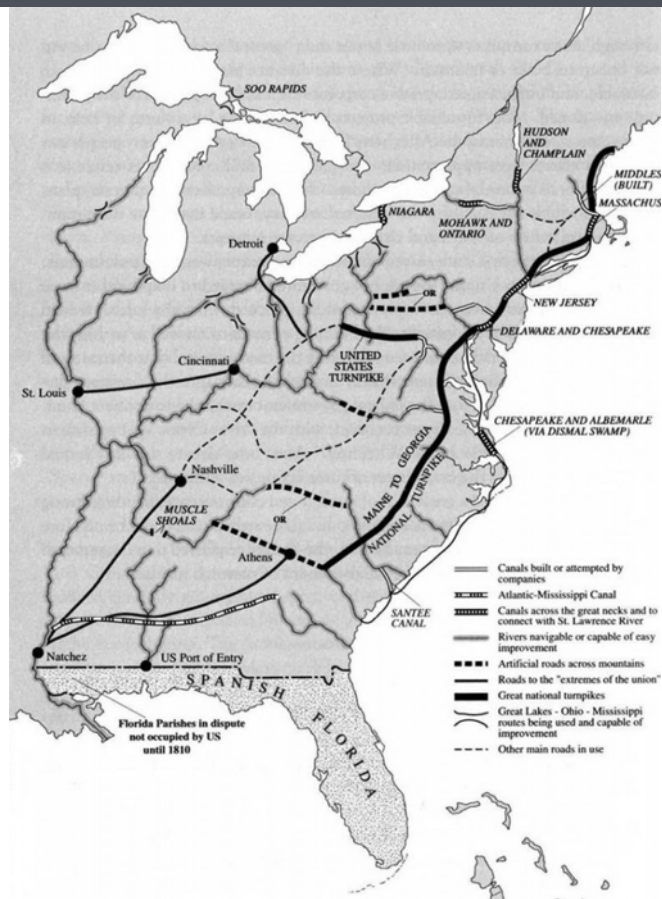
<sup>2</sup> This constitutes a remarkable economic plan, with many of the desirable elements we discuss as needed for an industrial policy for the 21st century. First, it centers on the importance of human flourishing. Second, it gives something to all the actors of the economy; not only manufacturing, but also agriculture, services, working-class men, and women. Though it is not a comprehensive plan in the sense we discuss below, the plan in Hamilton’s 1791 report shows a keen sensitivity to the interconnections and dependencies across regions, industries, and people. Finally, it connects the domestic vision to a global one, and analyzes how what we now call globalization can best serve people back home.



industries. In short, Hamilton’s was a fully baked political economic vision, with a clear vision of what government could and could not do well.

Hamilton would never have an opportunity to fully realize his vision, resigning in 1795 for family reasons. His eventual successor, Albert Gallatin, took up his agenda again in 1801. Gallatin fleshed out the Hamiltonian System with the Gallatin Plan of 1808—a comprehensive infrastructure plan to connect the most populated parts of the US to the growing hinterlands. As Michael Lacey describes it, the plan “provided an inventory—the first and only inventory until well into the twentieth century—of all the projects underway or planned within the states, together with a recommended plan for selecting among and complementing them so as to fuse together a national transport and communications infrastructure.” Like Hamilton, Gallatin sold his plans not only on narrow economic grounds but as a way to secure “external independence, domestic peace, and internal liberty” (Lacey 2000,101–04). The plan is shown in Figure 4.

**FIGURE 4: THE GALLATIN PLAN, 1808**



Source: (Lacey 2000)



Yet racism blocked the Hamiltonian vision.<sup>3</sup> Decades later, President John Quincy Adams railed against the lack of progress on planning, chiding libertarian agrarians and favoring a results-oriented approach focused on “the improvement of the condition of those who are parties to the social compact.” Yet his efforts to revive Hamilton’s plans were ultimately frustrated by his opponent Andrew Jackson, who once in office dismantled what was left of the nation’s financial, trade, infrastructure, and land-planning expertise. This amounted to a decentralization and privatization of US planning capacity—which would not be significantly revived until the New Deal. Citing comments made by Adams upon his post-presidency return to Congress, Lacey calls our attention to the central role played by institutional racism in the Jacksonian counteroffensive. Had national industrial policy been allowed to work, “the blessings unceasingly showered upon the people by this process would so grapple the affections of the people that it would, in process of time, overshadow that of state governments” and erode the slave power. “Slavery stands aghast at the prospective promotion of the general welfare,” Adams concluded (Lacey 2000, 107–111). **Thus, from the earliest days, racism got in the way of effective industrial policy.**<sup>4</sup>

## THE AD HOC NINETEENTH CENTURY (1829–1932)

After the failure of Hamiltonianism, industrial policy and planning over the next century would be defined by several features: 1) **peacetime decentralization to the states;** 2) **periodic wartime national mobilizations;** and 3) **government prioritization of private interests.**

After the Hamiltonian Era, states tried to pick up the slack left by the void of federal power. States competed with one another as to who could attract investment, leading to some successes like New York’s Erie Canal, but also numerous failed loans, credit bubbles, and uneven development across the United States. In response, states began outsourcing management of their planning efforts to private corporations in the rail and utility industries—who were not publicly accountable but who nonetheless required massive

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<sup>3</sup> Legalism also posed obstacles. Hamilton saw a national industrial policy as inhering in the Constitution’s mandate that Congress “provide for the Common defense and general welfare.” Yet Gallatin and his successive bosses Presidents Thomas Jefferson, James Madison, and James Monroe muddied the waters by suggesting that an internal improvements amendment to the Constitution might be needed in order to undertake national planning. Indeed, Monroe went so far as to veto a bill in 1822 that would have erected tolls to fund improvements of the Cumberland Road, which connected Indiana to the coasts. He maintained that he agreed with planning, but that it would require such a coordinated buildup of competent institutions and staff that it was imperative that the states agree to restrain their own power via formal constitutional amendment. While Monroe was doubtless correct that a sustained state capacity was needed, it was politically myopic not to seize the opportunity to set a precedent early in the republic’s history.

<sup>4</sup> One component of the Hamiltonian system (tariffs) would persist at fairly high levels until the Progressive Era and New Deal (Irwin 2017). As we will see, by that time, America had a new social contract and less trade-distorting ways of funding government. And, crucially, American firms by that time were globally competitive—just as Hamilton hoped they might be.



subsidies like land grants alongside railroad lines. **The combination of privatization and devolution to the sub-federal level created the opportunity for substantial graft and corruption—co-opting state and city government to the causes favored by private capitalists** (Fishman 2000) (Lamoreaux and Novak 2017). There has been substantial variation in how effective these local planning experiments have been. In a study of 139 city and county plans, planning expert Philip Berke finds that those that were more effective benefited from detailed mandates from their state capitals (Berke 1996).

Federal industrial policy would be summoned into being during wartime. During the War of 1812, the Mexican–American War, the Civil War, the Spanish–American War, and World War I, policymakers would scramble to divert production from consumer needs to military ones. Because lawmakers had intentionally sabotaged any governmental capacity to manage such a process, the government relied heavily on corporate leaders. As historian Paul A.C. Koistinen writes in his magisterial five-volume study of American military political economy, CEOs would sometimes simultaneously operate their businesses and temporary federal authorities. Despite the lack of planning, the North had better infrastructure and manufacturing capacity—which contributed to its Civil War victory over the less-developed South. Because military technology was still somewhat primitive until the 20th century, private factories did not need to be converted wholesale to making different kinds of products. Rather, corporate titans just needed to steer many of the products the factories would have made anyway toward government procurement (Koistinen 2004).

As military technology became more complicated, greater government intervention was needed to direct the process. For the year-and-a-half between July 1917 and January 1919, corporate leaders like Bernard Baruch and Hugh Johnson helped lead a War Industries Board. It tried to use persuasion to get companies to standardize and adopt better technologies to help supply the war effort. It set production quotas that suppliers to the government would have to meet and controlled the supply of raw materials to industry. Separately, the government took over private railways and much of the shipping industry. While the effort was more ambitious than the federal government had attempted to date, the board was not allowed to set prices, it allowed corporations to earn windfall in the form of so-called “war profits,” and it was ineffective at handling labor disputes. Moreover, there was no defense department to organize the military, but rather an army and navy with no overarching command and coordination structure. After the war, the apparatus was dismantled, and its leadership went back into the private sector (Cuff 1973) (Graham 1976).

There were a few prominent exceptions to the general dearth of peacetime federal planning.

First, under the Lincoln presidency, the government led the creation of transcontinental rail, reshaping the economy by opening up vast regions to farming and settlement. It also



catalyzed feeder upstream industries like steel, and complementary industries like retail catalogues (e.g., Sears, Roebuck and Company) and the telegraph. The government's dominant industrial policy tool was not the tariff, but land; it gave away millions of acres of land to rail companies and, under the Homestead Act, to individual families willing to live on the plots.

Second, emancipation and post-Civil War Reconstruction (1863–1877) should be read as a regional development policy, whereby Northern military and civilian authorities sought to remake the Southern economy and create capitalist labor markets and democratic institutions that could give jobs and representation to freed Blacks (Foner 2011). Yet, here again, racism derailed industrial policy when the policy of Reconstruction was abandoned.

Finally, President Theodore Roosevelt's 1904 book *A Square Deal for Every Man* outlined policy objectives in 75 distinct policy areas, many of which could be read as industrial policy.<sup>5</sup> His Republican successor largely dropped all of these efforts, showing yet again that government could not define and maintain a specific industrial policy approach.

## NEW DEAL AND GOLDEN AGE REVOLUTION (1933–1972)

The Franklin D. Roosevelt administration is the most successful example of peacetime national industrial planning. But even here, **FDR faced steep hurdles brought on by lawyers, judges, corporations, racism, and other opponents of his New Deal.** Much of what survived political assaults and court review, however, has lasted to the present.

The most famous example of industrial policy from the period was the National Industrial Recovery Act (NIRA). Under the stewardship of World War I planner Hugh Johnson, the National Recovery Administration (NRA) sought to establish codes of “fair competition” for over 500 industries. Industry codes governed matters such as minimum wages, child labor, and relaxation of antitrust enforcement so that companies could agree to production limits (to raise depressed prices). Though these codes were voluntary, the government

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<sup>5</sup> His agenda fell into three priority areas: conservation of natural resources (moving from land use being determined by private actors to land ownership where the government exercised active control), corporate regulation (by instituting a federal chartering process that imposed social standards on companies), and consumer protection (or the “Three C’s”). It also included a “Square Deal for the Negro,” which sought greater voting rights for Blacks. His greatest success was on the first front, which he began early in his first term (1901–1904). He postponed action on many initiatives until his second term (1905–1909). It was not until his final year in office that he launched his major planning initiatives: the Inland Waterways Commission (which sought regional planning organized around rivers and lakes—a preview of the Tennessee River Valley Authority), the White House Conference of Governors (which brought together not only state officials but also judges and private citizens to serve as a pro-planning backdoor constitutional convention), and the Commission on Country Life (which sought to make rural life more tolerable by reining in agricultural monopolies and bringing urban cultural amenities to them) (Lacey 2000).





sent out community organizers to pressure companies to join and licensed companies that cooperated with a “Blue Eagle” seal of approval. While formally tripartite—with representation by government, industry, and labor/consumers—the NRA in practice was tilted toward the interests of industry (Ohl 1985). This experiment was brief; the government lacked capacity to manage the codification process, and the NIRA was overturned by the Supreme Court less than two years after passage. The unanimous decision by both liberal and conservative justices found that “the discretion of the President in approving or prescribing codes, and thus enacting laws for the government of trade and industry throughout the country, is virtually unfettered.” Thus, on constitutional separation-of-power grounds, the court overturned the NIRA (Hughes 1935).<sup>6</sup>

Other parts of the New Deal agenda had more lasting impacts, particularly in those cases where government skill matched up with a constituency demand. For instance, agricultural supply management to raise farmers’ incomes was effective and lasted until the present—in large part because there was more bureaucratic capacity in the Department of Agriculture than in the newly created NIRA (Finegold and Skocpol 1995).<sup>7</sup> Elsewhere, a Reconstruction Finance Corporation (initially launched by the Hoover administration but greatly expanded by FDR) made billions in loans to resuscitate private industry and aid the war effort. Though it was eliminated in 1953, the corporation helped launch the Federal National Mortgage Association (Fannie Mae) and the Export-Import Bank—both of which survive to this day. And the Brownlow Committee in 1936 helped rationalize the panoply of overlapping executive branch agencies—a basic cabinet and White House structure that still exists.

On a regional level, federal loans helped homeowners to electrify their homes and purchase goods from appliance-dealers, who in projects like the Tennessee Valley Authority (TVA) worked hand in glove with government officials. New Deal officials like Wendell Willkie used the TVA as a cudgel to get utility companies around the country to lower their rates. Home loans under the New Deal and Truman’s Fair Deal began a march toward more national control of the housing market, which had until then been a wholly locally governed affair. While New Dealers did not resort to extensive federally owned housing (fearing a court challenge), their first steps opened a crack for later federal policies to push for racial integration of neighborhoods (Tobey 1996).

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<sup>6</sup> A parallel National Resources Planning Board (NRPB), focused mostly on issuing reports about various planning ideas, lived on until 1943. Despite the name, the NRPB did not limit itself to natural resource matters, issuing reports on labor and wage questions, as well as one entitled “A Plan for Planning” (1934)—which advocated for a permanent and more empowered planning body.

<sup>7</sup> Roosevelt’s Secretary of Agriculture (and later vice president) Henry Wallace wanted to go even further, and he set up soil conservation districts to displace county governments—which had long been opponents of federal planning. While these bodies were set up, they never fulfilled the political role Wallace hoped they would serve (Graham 1976).





By and large, however, the **New Deal's industrial policies were racially exclusionary**. Southern segregationists used their veto power in the Senate to ensure that workers in industries dominated by workers of color—such as agriculture and domestic help—received less federal protection (Katznelson 2006). Development plans for Puerto Rico and Native American tribes were ambitious, but often poorly tailored for the specificities of the groups they were trying to help. Even progressive New Dealers often harbored racist attitudes that hindered their ability to effectively plan (Taylor 1980) (Rodriguez 2010).

Comprehensive planning returned as part of the war effort. From 1940 to 1945, government compelled auto factories to make warplanes, and consumer goods producers to make munitions. This effort drew on lessons from World War I, when (as noted above) the government allowed business to reap significant profits and failed to control prices. As Koistinen writes, much of the same dysfunction would have played out yet again were it not for the intervening episode of the New Deal. New Dealers insisted that army and navy bureaucrats service themselves and their suppliers, and ensured that the “mobilization maximally met public interests and [was] carried out for purposes of efficiency, stability, and equity” (Koistinen 2004, 502). FDR intervened personally on various occasions to ensure that the interests of workers were respected in the mobilization, and he signed laws capping profits of defense suppliers. Still, he did not go as far as some wanted. As the war was winding down, groups as varied as the National Association of Manufacturers and organized labor called for national planning—at least for the factory reconversion period (Hyde 2013) (J. W. Mason 2017). Despite imperfect management, the WWII planned-economy period was consistent with the three highest rates of annual economic growth on record—17.7 percent in 1941, 18.9 percent in 1941, and 17 percent in 1942. (The only other time the growth rate exceeded 10 percent was in the earlier New Deal, as the effects of the Depression wore off.) Far from crippling capitalism, the war mobilization aided it.

Four legacies stand out from the New Deal and WWII period. First, industrial policy remained in the policy domains where it survived court review—such as agriculture. Second, the legal community began to accept greater intervention. In 1948, the Supreme Court upheld the war profits tax in *Lichter v. U.S.* In the intervening years since *Schechter*, Roosevelt's pledge to pack the court had led to an overdue realignment (Tucker 2018). Third, the era created a lasting partnership between industry and the military, where we continue to see the most extensive industrial policies. For instance, in the 1950s, after the Soviet Union's launch of Sputnik, the Eisenhower administration created the Advanced Research Projects Agency (ARPA). Later renamed DARPA (with “defense” added to its title), the agency helped create the internet, global positioning systems (GPS), and computer speech recognition. Viewing innovation as a geopolitical imperative of the Cold War, the government began the financing of world-class research universities, which went on to



become major contributors to America’s economic performance. It directly supported the development of new technologies, mostly through the defense budget; this gave rise to American dominance in commercial jet aviation, semiconductors, computing, and packet switching—the building blocks of what would grow into the digital era.

Finally, the 1930s saw the transfer of much trade policymaking authority from the legislative to the executive branch. Prior to that decade, Congress was responsible for setting tariff rates on individual products and finalizing the content of trade agreements. But with the Reciprocal Trade Agreements Act of 1934, much of this authority passed to the State Department (and the US Trade Representative, in later years) (Tucker and Wallach 2009). There was a sound political economy logic to relieving lawmakers of having to interface with thousands of lobbyists demanding special protection for their industries. Nonetheless, **one consequence of not having long trade hearings about, say, the tinplate industry is that legislators became less conversant with the state of American industry.** As such, it is not surprising that industrial policy would fade from the national conversation.

Richard Nixon was the last US president to seriously focus on industrial policy. He created several major agencies, including the Occupational Safety and Health Administration, the Consumer Product Safety Commission, and the Environmental Protection Agency. The latter body institutionalized a type of government-wide planning, requiring federal projects to undergo an environmental impact assessment. Nixon made major changes to trade relations, closing the dollar window and momentarily imposing an across-the-board tariff of 10 percent on imports. Working with a cross-section of planning enthusiasts like Democrat Daniel Patrick Moynihan, Nixon created a National Goals Research Staff tasked with raising (but not implementing) the major questions a planner would need to answer. In 1970, the group published *Towards Balanced Growth*, a report that proposed national population control and land-use overhauls. Nonetheless, there continued to be obstacles to more fulsome planning—including, again, white male supremacy. As historian Otis Graham recounts, the first term of the Nixon administration prepared ambitious bipartisan plans to remake America by encouraging relocation away from crowded urban city cores and stabilizing population growth by boosting family planning. Yet **as Nixon approached the 1972 election, he discarded all of these plans—fearing that white suburbanites would recoil at having new Black neighbors, and that Christians would recoil at greater access to abortion** (Graham 1976, 232).<sup>8</sup>

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<sup>8</sup> A final point on the New Deal and Golden Age era. Unlike his predecessors, who justified planning using the “general welfare” or national security clauses of the Constitution (or suggested internal improvements amendments), FDR justified planning using Congress’ inherent authority to regulate domestic commerce. While this would ultimately prove to be a more lasting legal basis than the previous attempts, it encouraged generations of lawyers and policymakers to embed their normative arguments for a better society in the imperatives of unrestricted commerce. This subtly nurtured a bias that would feed naturally into the neoliberal era.



## NEOLIBERAL ERA (1973–PRESENT)

The 19th century history of trying to craft industrial policy in pulses—creating a stronger state, then breaking it up, then trying to build it again, then breaking it up—is the kind of policy agenda that both produces suboptimal results and tends to diminish the public’s faith in the public sector’s ability to tackle large endeavors. **The neoliberal era both responded to that cynicism and deepened it by marginalizing industrial policy, denying its existence in everyday politics, and implementing ineffective versions of it during national emergencies.** For a generation that came of age during the Cold War, industrial policy was synonymous with Soviet communism—and the non-Soviet success stories were written out of the history. It is only now, as younger generations come of age in an era of existential challenges like climate change and inequality, that the industrial policy and planning tradition is ripe for revival.<sup>9</sup>

A brief exception to this industrial policy and planning aversion came during the Carter administration and President Ronald Reagan’s first term, when rising competition from Asia had prompted many scholars and policymakers to take another look at industrial policy. In 1980, a cabinet-level Economic Policy Group was formed to learn from Japan’s industrial policies. In the years that followed, a number of what we would now call heterodox economists studied Japan’s successful deployment of industrial policy and wanted to see the US adopt something similar. These voices included Robert Reich, Ira Magaziner, William Diebold, Barry Bluestone, Bennett Harrison, Ezra Vogel, Lester Thurow, Pat Choate, David Gordon, Robert Kuttner, and others—each of whom published reports and books advocating for diverse approaches. This view commanded near-consensus support in the Democratic Party leading up to the 1984 election.

But momentum stalled, for various reasons. First, the pro-industrial policy scholars had numerous internal divisions, including different ideas about how industrial policy should be governed (e.g., what roles the federal government, state government, firms, and unions should play). This made it difficult to agree on any single vision. Second, presidential candidate Walter Mondale—once out of the primaries—never mentioned industrial policy. According to Mondale advisor Bill Galston, Mondale only wanted ad hoc industrial policy, with an emphasis on post hoc bailouts (Graham 1992, 165).

Finally, economists in prestigious outfits like the Brookings Institution and the (now Peterson) Institute for International Economics and many in Reagan’s Council of Economic Advisors (including Robert Z. Lawrence, Fred Bergsten, and Paul Krugman) were firmly opposed to any ambitious planning. In Krugman’s words, “the available evidence does not

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<sup>9</sup> I am indebted to Billy Fleming for this point.



support the view that selective industrial policy has played a crucial role in economic growth in any of” the US’s trading partners—though he acknowledged he didn’t take national security or equity effects into account (quoted in Graham 1992, 135). The skeptics argued that the state would have difficulty selecting industries for promotion, that there could be adverse reactions from trading partners, and that America’s deindustrialization was a natural progression that should not be resisted. Expunged from history was the extensive use of industrial policy in US and global history. These economists found a friendly ally among Republican advisors, one of whom stated “we ought to be dismantling our existing industrial policy, not enhancing it” (Graham 1992, 157).

Krugman highlighted the power of economists when he wrote,

*Support for some kind of targeted industrial policy comes from a remarkably wide political spectrum. The idea is favored by nearly all Democrats and many Republicans, nearly all liberals and many conservatives, nearly all unions and many businesses. The only fairly unified opposition comes from professional economists. It is a tribute to the force of free-market ideology that we have resisted industrial targeting as long as we have (Krugman 1983, 123).*

Indeed, **if the courts killed planning in the 1930s, and white male supremacy killed it in the 1970s, it was the economics profession that killed it in the 1980s.**

Today, only a hodgepodge of ad hoc industrial policy efforts remains. Banks and automakers have been bailed out multiple times—necessary interventions that nonetheless are reactive rather than proactive, increasing moral hazard in the marketplace. The mortgage market is largely underwritten by government. Farm subsidies, crop insurance, and tax advantages for land and farm equipment are driving the consolidation of land ownership and funneling significant government revenues to major companies like Cargill. Shipbuilding is protected through the Jones Act, which requires that goods shipped between two US ports of entry be transported on US-owned and -operated ships. Antitrust rules are selectively enforced, allowing Gilded Age rates of concentration. Large manufacturing corporations’ outsourcing of the bulk of parts production to other industries and firms puts a profit squeeze on the latter, which in turn squeezes workers’ paychecks (Helper 2019). **A common denominator of these efforts and non-efforts has been an elevation of private market actors over democratically determined national priorities.**

At the local level, a jumble of ad hoc subsidy programs like tax abatements remains active. But policymakers struggle with how to attach and enforce conditionalities on these financial benefits to private companies. The Line Hotel—a celebrated new development in Washington, DC—received a \$46 million tax break from the district government, on the



condition that it hire 300 local residents for construction jobs. While this condition was intended to help working-class people, the Line developers instead classified their high-income celebrity chef, owners, and art curators as “construction workers.” Local officials remain flummoxed about how to penalize the hotel. Now open, it is popular among city elites and has generated some jobs for local people (Schwartzman 2019). Would officials risk losing the business by enforcing the law?

Indeed, the most ambitious industrial policy of the era was the 2009 launch by the Obama administration of ARPA-Energy (ARPA-E) to fund high-risk projects that the private sector would not. The program worked as it should have, but became a target of the political right when a few of its projects (e.g., Solyndra) failed (Grunwald 2013). Moreover, Obama did not consistently campaign on the program, squandering an opportunity to educate the public about the nature of industrial policy, which involves a mix of failed projects, successful projects, and a general attitude of experimentation.

## SUMMING UP

Despite the contentions of some, the US has always practiced some form of industrial policy. Up until the 1930s, tariffs and planning by states and private actors dominated. Even war-making was often managed by corporate leaders. In the New Deal period, some lasting elements of industrial policy were put in place for agriculture, trade promotion, and military defense. Yet systematic industrial planning never took off due to the grip of institutional racism, fears of court pushback, and (in recent years) an increasingly neoliberal economics profession. A new industrial policy vision must bridge racist divides and adapt the legal system toward the outcomes we want to see—rather than the other way around. It must also embed planning in new constituencies that can counter the opposition that a new plan would face from courts and economists.



## SECTION FOUR

# A New Sustainable and Equitable Industrial Policy

The 2020s present an unparalleled opportunity to move past neoliberalism and reimagine industrial policy and planning for a new era. The reasons are many:

- Reliance on private-sector initiative has proven misplaced, as companies hoard more and more of their money and fail to reinvest in the real economy.
- Government spending and direction can help boost effective demand and ensure that underdeveloped regions get the investment they need.
- The geopolitical scene presents challenges for the US that can only be resolved by selective emulation of the new norms of our trading partners.
- The climate catastrophe demands ambitious action and massive reorganization of economic activity.

Crucially, we can enact planning in a way that is more democratic, sustainable, affordable, inclusive, and competitive than in the US's past or our foreign competitors' present. This section describes how a new approach to industrial policy can overcome the factors that led to failure in the past.

A new industrial policy need not be ad hoc (as it has been for the US in the past), nor authoritarian (as it is now for China). Industrial policy is more likely to be effective as part of an economy-wide plan, and more likely to be legitimate if this plan is inclusive, democratically decided, and accountable. Indeed, our contention is that the US can produce a distinctly American version of industrial policy that—if the whole country is mobilized to participate—could even exceed the performance of our competitors' industrial policies.

While this brief introductory paper is not the place to develop a new industrial policy in full, this section outlines some of the major considerations policymakers and the public will need to address going forward. Because of the importance of addressing climate change, we focus many of our examples there.



### **The Five Criteria for Forward-Looking Industrial Policy and Planning:**

- How can government capacity be expanded to sustain it?
- Is it environmentally sustainable?
- Does it fit in with a comprehensive political economy vision for growth?
- Is it equitable and inclusive of all races and genders?
- Does it bolster our global competitiveness?

## **PLANNING, CAPACITY, AND POWER**

Effective industrial policy is not ad hoc and does not pick individual firms for special privileges. Indeed, industrial policy by its nature affects allocations of capital and labor across economic sectors, and as such, should frontload consideration of how these industries interact. Subsidies to football stadium builders may encourage capital to shift away from child care centers and green battery manufacturing.

In some cases, industrial policy will create winners and losers. The Green New Deal, for instance, will allow clean energy manufacturing to win and necessitate losses for the fossil fuel industry.

In other cases, as economist Mariana Mazzucato emphasizes, innovation-minded industrial policies need not be about picking winners nor even industries or sectors, but rather setting goals. Infrastructure and public finance must be embedded within the greater systemic plans for change, or what Mazzucato calls *moonshots*. These are distinct from *snail crawls* (a gradual approach that focuses on fixing market failures and works within existing comparative advantage) or *leapfrogs* (a more ambitious iteration that tries to change comparative advantages in given sectors by imitating what other countries have done before) (Cherif and Hasanov 2019). Mission-oriented policies must also foster interactions among multiple fields. NASA’s mission to the moon required the interaction of many different sectors, from rocketry to telecommunications to textiles. Since the effects will be felt throughout the economy anyway, it is best to start with an economy-wide plan. This could be along the lines of France’s earlier indicative policy, or through more formal and binding five- or 10-year plans.

A mission-oriented revival of industrial policy requires a reinvestment in government itself. “Most of all,” argues Mazzucato, “governments should build the public agencies of the future, turning them into hotbeds of creativity, adaptation, and exploration” (Mazzucato 2015). Industrial policy of the past paid too little attention to whether the agencies who were





being assigned work had the right mix of “feeder” schools and training for their staff, budget capacity, freedom from competing jurisdictional claims by other agencies, autonomy from private firms, and embeddedness and awareness about real-time economic developments (Finegold and Skocpol 1995) (Andreoni and Chang 2019).

There are advantages to having a plan at the *federal* level instead of at the state and local levels. First, the federal government will have a better bargaining position as it interfaces with firms. Not only does it have more resources, but it is less likely to be bullied by the private sector into doing something irrational. In contrast, sub-federal agencies will compete with one another to offer the most generous terms to firms—depriving states of valuable tax revenue, often for investments firms would have made anyway (Jensen 2018). Even in cases where firms are bound by community benefits agreements to reinvest locally, city and state governments may be unwilling to enforce them. As a consequence, we see cases of state and local governments that are virtually owned by regulated industries (Chaffin 2019). Federalizing programs and program evaluation at the federal level allows for more expert and less capricious industrial policy.

The prevailing lesson of these cases is that industrial policy and planning cannot only mean doing the bare minimum and letting the private sector do the rest. Beyond mere *market correcting*, a more holistic approach would also look at how industrial policy can be used as a *market structuring* and *public power structuring* device. The rationale for these other goals was developed in “New Rules for the 21st Century,” a major report released by the Roosevelt Institute earlier this year (Abernathy, Hamilton, and Margetta Morgan 2019). For instance, to address concerns that private actors in the social media or fossil fuel industries are developing too much power relative to working people, we could encourage labor and capital to move elsewhere by enacting size limits or bans. Similarly, we may worry that firms’ development of cloning and drone technology could make them more powerful than the government. To retain appropriate public sector monopolies of force, we may push these firms to divest. Moreover, we may wish to counter neoliberals’ successful convincing of many that the government is too incompetent to accomplish public goals, or that public interventions cannot be racially inclusive. Successful industrial policy can demonstrate that the reverse is true, and lead to a virtuous cycle of increased legitimacy leading to more effective governance.

Finally, the US experience shows that political structures and decisions can stand in the way of enacting and maintaining effective industrial policy. This is an executive branch, legislative branch, judicial branch, and professional issue. On the executive side, past US planning exercises (whether the War Industries Board in the 1910s or the National Recovery Administration in 1933) suffered from a lack of unified command and competition with rival agencies. On the legislative side, the overrepresentation of state interests in US life—





namely in the influence of the state-centric US Senate – presents would-be reformers with manifold veto points. The judicial branch has been overly eager to second-guess a regulatory apparatus that judges are ill-equipped to judge (Tucker 2019b). All of this combines to muck up government effectiveness, which in turn limits our international competitiveness (since our allies face fewer veto points). So **effective industrial policy may require substantial overhaul of anti-democratic features of our republican government** (Tucker 2019a). Finally, the industrial policy experience of the 1980s shows that the economics profession can play a detrimental role. To counter this, progressive philanthropists should make investments in other social sciences (and in individual economists) who are open to using broader metrics for policy evaluation, including national security, equity, and sustainability.

## SUSTAINABILITY

The US and planet as a whole face profound existential challenges. The latest science concludes that—with an increase in 1.5 degrees Celsius in the coming decades—we will see sharp increases in extreme weather days, severe droughts, sea-level rises, loss of species, and deforestation.<sup>10</sup> The US Navy began warning as early as 1990 that nearly all its operations were threatened by the phenomenon. Yet recent years have set us back as we’ve experienced the highest emissions on record. The Trump administration left the Paris climate deal. The Obama administration saw the largest expansion of drilling on record and cut a modest pilot project aimed at simply measuring green job creation. Moreover, leading economists have emphasized (formally) industry-neutral mechanisms such as the carbon tax, which—absent complementary political and economic programs to ensure that this is not a regressive tax on everyday workers and commuters—could be dead upon arrival.

Sustainability requires a more thoroughgoing industrial policy, and any industrial policy should prioritize decarbonization; if the planet is not habitable, it won’t matter which country is the best widget maker.

This is not as much of a leap as it might sound. Climate policymakers are already used to thinking in terms of which sectors of the economy—transportation, agriculture, real estate, manufacturing, and so on—are the biggest emitters. And financial regulators are increasingly aware of the risk that climate change poses to industries across the economy, from increased food costs to rising insurance claims to wildfires to electricity and water shortages (Davenport 2019). In 2007, the Supreme Court signed off on the appropriateness of a regulatory response—which the Obama administration was already beginning to enact through what were effectively industrial policies for coal mines (phasing them out),

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<sup>10</sup> <https://www.ipcc.ch/sr15/chapter/summary-for-policy-makers/>



automobiles (changing their tailpipes), and more. And, as noted above, a plan like the Green New Deal is already essentially an industrial policy. Its 14 projects aim to remake US infrastructure, energy, construction, manufacturing, farming, transportation, innovation, and more. And the 15 evaluation criteria it proposes to judge the quality of those projects envision major changes to the US educational, health care, and labor sectors, among others, to guarantee equitable outcomes (Ocasio-Cortez 2019). The Green New Deal is explicitly premised on replicating for a 10-year mobilization the logic of the most successful period of industrial policy in US history—World War II—without the war.

Let's take just one example. A sustainable industrial policy must include a rethinking of America's food systems. As a recent report by the Center for American Progress documents, US agriculture in recent decades has seen a radical increase in concentration. Inputs like seeds and livestock pharmaceuticals are in the hands of a few firms; buyers of crops are also few in number. In between, family farmers are being squeezed (Willingham and Green 2019). A major plank of the New Deal was agricultural planning and checking the power of monopolies, but in the 21st century, mega-companies like Cargill are the ones effectively planning the farm economy in their own interests. A sustainable industrial policy would tackle the rising costs of inputs to family farms, the low prices in the markets they sell to, the private governance structures that stifle competition, and the coordination with the manufacturing and urban economies.

## AFFORDABILITY AND GROWTH

Critics of industrial policy fear its costs while seeing no upside. Meanwhile, even some advocates of industrial policy have no plan for how to pay for it, or pit sustainability against economic growth. The foremost Republican proponent of industrial policy—Sen. Marco Rubio (R-FL)—has celebrated both industrial planning and Trump's tax cuts, which deprive the government of needed revenue (Rubio 2019a). In a critique of another prominent industrial policy advocate, Sen. Elizabeth Warren (D-MA), Rubio wrote that “greater production of America's highest value exports, like airplanes and automobiles, will inevitably increase carbon emissions. This is the cost of any increase in economic output. A changing climate will require investments in mitigation and restoration, but a progressive ecological utopia can only come at the direct expense of high-value jobs and long-term economic prosperity” (Rubio 2019b).

The good news: America can afford a sustainable industrial policy, and raising the necessary taxes will have other useful benefits, including for growth. New research by the Roosevelt Institute finds that a mix of increased income taxes, financial transaction taxes, wealth taxes, and borrowing could easily generate revenue equivalent to 5 percent annual increases



in GDP, which might be necessary for a Green New Deal—one prominent industrial policy proposal. As the authors write,

*The macroeconomic case for a Green New Deal is straightforward. On the one hand, there is overwhelming evidence that the economy’s productive potential could support increased spending on decarbonization of at least 5 percent of GDP annually, without the need to crowd out any existing spending. In fact, the demands on real resources of decarbonization—if they take the form of targeted public investment, along with measures to channel credit and private spending—should properly be seen as one of the strongest arguments in favor of a massive program of decarbonization and not as an argument against it. And on the other hand, the financing problem—how to generate the sources of funds equal to the new uses of funds—can be straightforwardly solved with a mix of new debt and targeted tax increases. In an environment of interest rates well below growth rates, and given a plausible case that new public spending would generate significantly faster growth, there is no reason a decarbonization program should require tax increases except where these are desired for their own sake. If a Green New Deal includes broader spending—especially universal health care—as well as decarbonization, financing some part of it with broader income-tax increases is reasonable” (Paul, Mason, and Fremstad 2019, 65).*

An industrial policy can generate further income and revenue by, for instance, requiring firms that benefit from subsidies to reinvest monies back into their own research capacity. These conditions will further boost taxable economic activity.

## EQUITY AND INCLUSION

The way many pundits and policymakers talk about industry and competitiveness is often trapped in a hypermasculine image of men (usually white) building things with their hands. Trade stories often include pictures of factories, farm goods, and manufacturing goods in containers.

There is no necessary reason for this association. Industrial policy by the definitions above can and does encompass every industry, including service sector ones like care work, convenience stores, cosmetology and barber school, and home health-care services. Any industrial policy regime worth its salt would spend at least half of its energies on the service sector—which employs 80 percent of Americans (manufacturing accounts for only around 12 percent, agriculture 1.5 percent, and self-employed the remainder).



Work in the service sector is disproportionately female. Eighty-eight percent of hours worked by women are worked in the service sector, while the comparable number for men is 65 percent. Women’s exclusion from manufacturing has remained fairly constant over time, while their massive entry into the workplace has coincided with an expansion in the importance of the service sector. In 1968, the female intensity of goods-producing sectors was 18.1 percent. Four decades later, it was only 21.1 percent. In contrast, the female intensity of service sector work surged from 37.4 percent in 1968 to 52.1 percent in 2008 (Ngai and Petrongolo 2017). The top three industries for women by female intensity are child day care services (93.8 percent women), private household work (93.2 percent), and beauty salons (90.5 percent).

The service sector is also where we see higher shares of people of color. The three industries with the highest share of Black workers are bus service and urban transit (35.6 percent Black), taxi and limousine service (30.2 percent), and barber shops (30.8 percent). These figures are over twice Blacks’ share in the population as a whole. The top three service industries for Latinx workers are landscaping services (44.2 percent), private household work (43.6 percent) and building repair (40.8 percent). These are also well over twice their 18.3 percent share of the population as a whole. Finally, Asians represent 5.9 percent of the population, but 47.2 percent of nail salon workers, 26.5 percent of internet publishing and search workers, and 23.6 percent of computer systems designers.

In short, industrial policy and planning that focuses only on manufacturing reinforces sexism and racism.

A new industrial policy and plan of the future would extend some of the logic of “targeted universalism,” whereby workers are helped, but some are helped more on the basis of historic disadvantages (Flynn et al. 2016). This means that industries would be selected for favorable government treatment based partly on their employment of women and people of color. For instance, a Center for American Progress report finds that up to 77 percent of families in some American states live in “child care deserts,” where there are more than three young children for every licensed child care slot. The authors find that “Hispanic/Latino families disproportionately reside in child care deserts, with nearly 60 percent of their population living in areas with an undersupply of licensed child care” (Malik et al. 2018). Thus federal policy to move qualified workers into child care services, improve quality, or subsidize the construction or renovation of buildings for child care use would all represent a type of intersectional industrial policy.<sup>11</sup>

Likewise, a policy like Medicare for All would be a kind of reverse industrial policy, by

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<sup>11</sup> It is not for nothing that reparations have been described as a type of industrial policy (Hammond 2019).



radically shrinking the role and power of the private medical insurance industry. This policy would not only resolve a pressing social problem (undercoverage in the private markets), but it would also solve a political one—by eliminating a well-resourced industry that can be counted on to oppose reform.

Finally, policymakers now are frustrated that China appears to be dominating so many different industrial sectors. The Washington, DC Metro system, for instance, needs new railcars—but there are no American companies left that can supply them. The system also has been stymied by poor rail infrastructure, which has led more and more commuters to switch to driving Chinese-made electric scooters. An inclusive industrial policy might ban scooter imports and fund railcar and bus construction in West Virginia (ground zero of the opioid crisis) and impoverished-majority areas like Black Southeast DC and Prince George’s County, Maryland. These new vehicles will in turn create driver jobs, which as we noted above comprise a predominantly Black industry.

These examples echo a key insight of the historical institutionalist literature in political science: **Every policy regime needs to have a constituency.** If one doesn’t exist, smart regimes create them (Pierson 2004). The economics and legal professions have been a sort of anti-constituency for industrial policy, and can be expected to organize to fight any new efforts in this space. Countervailing power is necessary. In the child care example, the millions of workers that work at new care centers and the families that use them are a constituency that can help fight for passage of the initial law, and then defend it from budget cutbacks. In the health insurance example, the policy deals with the veto players that can block reform from ever getting off the ground.

## GLOBAL COMPETITIVENESS

Just because we critique Trump and other industrial policy experts for focusing *only* on manufacturing, this does not mean that an adequate plan could ignore manufacturing. Quite the contrary.

How should we think about this sector? White House advisor Peter Navarro teased one option early in the Trump administration, suggesting the US should adopt a target of having the same share of workers in manufacturing as Germany—20 percent—or double the current percentage (Belvedere 2017). To our knowledge, no country has ever adopted such a labor market target, though many have and still do adopt targets for the manufacturing share of national product. In Trump’s rhetoric on pulling out of NAFTA or imposing tariffs on China and Mexico, he regularly makes the point that US companies that wish to avoid tariffs can do so by reshoring production.



While this rhetoric is counterproductive in many respects, the Trump administration is not wrong to be purposive about manufacturing. It is too broad, for instance, to criticize Trump's tariffs because costs could go up. That would be true for many industrial policies, and indeed for basic labor market policies like minimum wage increases. The relevant questions: If costs go up, what benefit do we get? Who wins, who loses, and who decides? And is the distribution of that burden fair within the domestic economy?

There are numerous reasons to care about manufacturing. First, while America's factories need fewer workers than they did decades ago, nearly one in 10 US workers continues to operate in the sector. If one redefines industries by their interaction with and reliance on goods-making industries, the number is even higher, as much service sector work is simply about providing inputs or distribution for goods (Andreoni and Gregory 2013). While the US economy can do with less manufacturing employment than it had at its peak, no serious plan would lack a robust manufacturing component.

Second, even if one only cares about innovation and efficiency, there are some industries where it is crucial that goods assembly be kept onshore—close to the engineers and managers, so that there is continuous feedback and perfecting between the two layers. These include more mature industries like metal and specialty chemicals production, as well as younger ones like biotech drugs and nanomaterials production (Pisano and Shih 2012).

Third, there are precautionary reasons to maintain manufacturing onshore. If supply chains become too concentrated too far afield, US businesses and consumers become vulnerable to sudden supply shocks that could deprive diabetes patients of insulin or car manufacturers of needed parts. Moreover, national security becomes imperiled if the Pentagon cannot at a moment's notice get all the supplies it needs in the event of a war (Lynn 2006). Much of the handwringing about Trump's tariffs is that supply chains are too globalized to permit reconsideration of the nation's trade policies without significant disruption. But there are reasons to be skeptical of this reaction. As an empirical matter, most manufacturing industries still use mostly domestic inputs. For several important sectors like food manufacturing and chemicals, the percentage of inputs that are American-made is well over 80 percent of the gross output (Nicholson and Noonan 2014). Moreover, as a small-d democratic matter, if supply chains are unduly constraining a nation's freedom of choice over important questions, then the process has gone too far and should be reined in (Tucker 2017). Finally, political scientists Henry Farrell and Abraham Newman have demonstrated how supply chains provide a new source of leverage for bad actors in international affairs (Farrell and Newman 2019).



Fourth, there are reasons to doubt whether “international services trade” can ever really take the place of manufacturing. The concept didn’t even exist in the policy lexicon until think-tanker Geza Feketekuty almost singlehandedly invented it in the 1970s. And as economist Brad Setser has described, much of services trade appears to be little more than a tax dodge by multinational companies to book profits in overseas havens (Setser 2019).

Fifth, it is not necessarily inequitable as a matter of domestic politics to have a bold manufacturing strategy. While white men are well-represented in manufacturing, that is not monolithically so. Women are overrepresented in retail bakeries (69.1 percent), apparel manufacturing (66.5 percent), and textile manufacturing (52.9 percent). The top industry for Latinx workers is apparel manufacturing (47.1 percent), and the third most important industry for Asians is electrical component manufacturing (24 percent). In animal slaughtering, Blacks represent 25.5 percent of the workforce—making it the tenth most important industry for Black workers.

Relatedly, negotiations over rules for goods trade can be a useful lever for a broader conversation about global cooperation. For instance, the Green New Deal resolution outlines five goals, 14 projects, and 15 requirements to evaluate those projects. But only three of the first, six of the second, and three of the third are explicitly national in focus. The remainder are either explicitly international or potentially could be. The proposals to promote union jobs, for instance, could translate readily into a new Paris-style accord for labor, whereby countries would commit to higher unionization rates (Tucker 2019c). Because enforcement would likely come down to trade punishment, it is reasonable that the trade and climate talks be linked.<sup>12</sup>

Finally, as we saw with the US experience, taking trade power away from Congress has led to a general de-skilling on trade. Having a strong role for Congress and the public to help shape these trade and climate rules will ensure that they have the capacity and familiarity to engage in these matters in the future.

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<sup>12</sup> Any industrial policy needs to have a theory of if and how it can be made compatible with current global economic, political, and legal dynamics. If it cannot, the plan needs to include a theory of how these rules will change. In many cases, the legal constraints are real. Countries have given up ample policy space as part of the globalization process, and many are eager to begin reclaiming some of it to help their economies develop (Gallagher 2005).





## Addressing Criticisms

Before concluding, it is worth addressing some general criticisms of industrial policy. Opponents of industrial policy regard it as bureaucratic interference that is at best irrelevant, or culture-specific—and less generously, as a rival to more knowledgeable local intelligence and talent, favoring incumbents and crowding out private investment. We do not see these criticisms as holding up to close scrutiny.

### PER SE OBJECTIONS

One line of argument is simply that industrial policy is not necessary or is indeed counterproductive. Government is less equipped than the market to make specific investments—leading to greater rates of failed investments than the private sector. One big reason for this greater rate of failure, free-market proponents argue, is that government lacks all-important local knowledge (Hayek 1945).

Pointing to cases like Solyndra, the solar panel manufacturer that received stimulus funds and then went bankrupt, critics claim that markets are better allocators of capital. In the words of Larry Summers, President Obama’s economic advisor, “the government is a crappy venture capitalist”—unknowledgeable about market conditions and prone to political capture (Boskin 2012). More recently, Veronique de Rugy of the libertarian Mercatus Center claimed that industrial policy has always failed, and even its apparently successful implementers (e.g., China) would have performed even more successfully if they had left allocation to the market (Rugy 2019).

These per se objections miss that there is no avoiding having an industrial policy in the name of non-intervention in the economy. We’ve catalogued the many examples of US industrial policy even as the country pretends that it doesn’t have one. Large banks in the private financial sector already plan much of the economy, but do so in a way that is beyond democratic control (J. W. Mason 2016). Even “arms-length regulation” and “deregulation” entail as much if not more state intervention than a declared industrial policy. For one reason, a deregulated industry jealously guards proprietary information that the state might need in order to identify economic bubbles before they inflate. This makes constant supervision a must (Vogel 2018).

More ominously, industrial policy has been tarred by associations with right-wing



authoritarianism. Some in FDR’s administration looked admiringly on fascist planning experiments in Italy and Germany as a way to address the Depression. However, the degree of this admiration has been exaggerated (Ohl 1985). And, as an empirical matter, this association obscures the ways in which fascist planning was less effective than the democratic variety. Nazis’ fealty to big business and disdain for labor unions meant that they were ill-prepared to make tough calls to rationalize production and cultivate human capital (T. Mason 1993) (Tooze 2008). Because they shut down dissenting information, authoritarian governments do not get accurate feedback on how well or poorly their management of the economy is going.

## UNDESIRABLE CONTEXTS OR EFFECTS

A second sort of objection acknowledges the utility of industrial policy in principle, but takes issue with its consequences. Industrial policy is needed, in other words, but the cure is simply worse than the disease. There can be fairness dimensions to this objection: Picking winners may seem like an oppressive wielding of government power for any who are not on the winning side. For every South Korea success story, they say, there were many so-called African “white elephants”—a derogatory term for loss-sustaining projects undertaken for “political” rather than “efficiency promotion” reasons (Robinson and Torvik 2005). Likewise, import substitution industrialization—a common industrial policy of Latin America—tended not to be as successful, in part for similar reasons. As there were many more African and Latin American failures than Korean successes, cross-country regressions would tend to show a net economic negative from industrial policy.

But this interpretation suffers from aggregation problems. As economist Dani Rodrik points out, government interventions motivated by pursuit of the public interest to help dying industries and those driven by rent-seeking and corrupt cronyism often look the same from the outside, as either could result in subpar performance of protected firms (Rodrik 2012). Yet modern econometric techniques allow for more careful parsing of industrial policy experiences by focusing on cases where exogenous elements affected the phase-in or phase-out of an industrial policy, such as the death of a dictator, invasion by a foreign power, or agencies that by mistake or lack of funding could not fund all regions within a country equally (Juhász 2018) (Giorcelli 2019) (Lane 2019). Moreover, a reason for failure may be that the state lacked sufficient autonomy from the private sector to credibly withdraw support or avoid becoming entangled in self-seeking corruption. Looking at those cases where government was set up to succeed helps yield more granular insights (Evans 1995).

A final objection is more rooted in an observation about the nature of democratic regimes. Simon Lester at the Cato Institute writes that advocates of industrial policy “need to take



into account that they are not always going to be in power...You can't just say, we want economic statecraft but only the good kind. Once the principle has been established, it can be used for anything, and you know that in advance." Even if one wants the tool for only progressive ends, "that also means President Trump has the power for some non-progressive thing. Given the way such power will actually be used, it's worth considering whether it would be better if the US government simply didn't exercise this power, or exercised it a lot less" (Lester 2019).

But to some extent, these critiques could be successfully levied about any activist government policy. Why legislate at all if one's program could be repealed or co-opted in the future? The hope is that by demonstrating the value of an industrial planning program and approach, it becomes harder to roll back in the future. We can already see this effect happening, with Republicans like Rubio questioning the Beltway consensus. Politics isn't static, and good programs can help shift the political dial.

Nonetheless, there is a danger in democracies that industrial policy will interact with the political system to the detriment of both. For instance, research by political scientist Stephanie Rickard suggests that plurality electoral systems like the US are more likely to target industrial policy toward geographically concentrated industries. Geographically diffuse industries, meanwhile, are less likely to receive support. Because international rule restraints tend to target particularistic policies, one implication of Rickard's argument is that countries with plurality systems will be more likely to violate international agreements (Rickard 2018). This is why a transformative industrial policy would need to be paired with political reform to make the former more likely—such as reducing the power of the US Senate (Tucker 2019a).

## Conclusion

This report has addressed the what, why, and how of industrial policy and planning. As a horizontal lever of the state, it distributes income among industries—bearing close resemblance to other horizontal policies that distribute income among regions and races. It is distinguishable from and intersects with vertical levers that distribute income among classes, and temporal levers that distribute income among generations. Though often thought of as a euphemism for tariffs, industrial policy's toolkit goes far beyond that—from policies that affect input costs, like workforce training; to those that change output demand, like government procurement; to those that alter ownership structures, like nationalization; to those that affect coordination among industries, like development banking.



Far from some communist artifact, industrial planning is at the heart of many Western European capitalist economies. And though the US has never developed an economy-wide plan, it has engaged in ad hoc industrial policies like the Wall Street bailout. As this report argues, racism and legalism from the Hamiltonian Era to the Nixon administration explain much of the failure to develop an American plan. In the neoliberal era since, one can point to the influence of the economics profession—which has systematically erased the history of successful industrial policy, even as successful implementers like China become superpowers.

The US faces numerous challenges that make a more robust industrial policy and plan necessary. These include climate change, trade competition, corporate outsourcing, and private capital's short-termism. In this environment, the state is the only actor that can change private actors' incentives, think long-term, and address existential threats. But such a policy shift must look different from Trumpism's blunt and ineffective tariffs, neoliberalism's allergy to active policymaking, or China's top-down authoritarianism. Rather, it will require a radical democratization of policymaking, close attention to racial inclusion, and a continual reinvestment in government capacity and know-how.

The issues canvassed in this report are just the beginning of the hard work of fleshing out a specific industrial policy and plan. Tough choices will need to be made about the purpose, specific tools, and evaluation criteria that will be employed to make sure that a new plan works in practice (not just in theory). For example, should a Green New Deal favor importing Chinese solar panels (due to their low price), but raise tariffs on next-generation green batteries where US workers and industry might excel? What are the trade-offs between trade-related tools versus other tools that affect only the domestic economy? Finally, how can industrial policies cultivate constituencies that will benefit from and thus support the planning process over time? In this, we can draw lessons from experiences in other Western democracies like France and the Netherlands that have shown how industrial policy and planning can be done right.

Doing nothing is not an option. While it is true that the US has lacked a systematic peacetime plan of the kind many of its competitors have developed, we argue that this lack of a plan is itself an implicit plan and choice about prioritization. To quote Sen. Rubio, "In a world of state competition for valuable industries, a domestic policy of neutrality is itself a selection of priority. 'Not choosing' is a choice, however it is made. The critical policy consideration, then, is not whether states should organize their economies, but how they should be organized" (Rubio 2019a). Or as Sen. Warren has said, "The truth is that Washington policies—not unstoppable market forces—are a key driver of the problems American workers face" (Warren 2019). By rewriting the rules, we can change who benefits.



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