

Report Part Title: Do Other Countries' Industrial Policies Demand U.S. Industrial Policy?

Report Title: Questioning Industrial Policy:

Report Subtitle: Why Government Manufacturing Plans Are Ineffective and Unnecessary

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Published by: Cato Institute (2021)

Stable URL: <https://www.jstor.org/stable/resrep35547.8>

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federal industrial policy, but instead local policies and these specific communities' inability to adjust to global economic forces *and* competition from other states.

Second, as the Peterson Institute's Adam Posen recently explained, "there are precious few examples of a government successfully reviving a community suffering from industrial decline."¹⁶⁰ He cites failed U.S. efforts to revive the Massachusetts textile towns of Lawrence and Lowell, and similar efforts in the Midwest. Then there are the continued struggles of former steel town Youngstown, Ohio: "A succession of presidents has promised—and failed—to turn around Youngstown, which, despite all the political attention and federal dollars lavished upon it, doesn't have a supermarket in the residential neighborhoods closest to downtown."¹⁶¹

Posen details similar failures to revive struggling communities or regions in Germany, Italy, Japan, the United Kingdom, and even China – "a country that has protected heavy industry on an unprecedented scale for years on end, has run substantial manufacturing trade surpluses, and has a government willing to restrict internal migration and locate industries by edict."¹⁶²

Thus, leaving aside whether national economic policy should relieve states and towns of their responsibilities to create viable commercial centers, little evidence indicates that it can.

Do Other Countries' Industrial Policies Demand U.S. Industrial Policy?

Finally, the industrial policy experiences of other countries, particular China, cannot justify similar policies in the United States. Significant political and economic differences limit the extent to which these experiences can inform U.S. industrial policy efforts. Regardless, countries' industrial policy successes have been exaggerated, while numerous failures have been ignored. This includes China, which has commonly been cited to justify new U.S. industrial

policy yet has a spotty industrial policy record and faces numerous economic challenges in the years ahead – some caused by its own industrial policy efforts.

The Perils of Cross-Country Comparison

In general, real or perceived industrial policy successes in other countries cannot inform whether similar results are possible in the United States or whether the federal government should adopt “industrial policy” broadly defined. As noted above, for example, reviews of the economics literature conclude that the empirical studies of industrial policy are limited and, of the few that have been published, primarily assess specific cases, industries, and policy episodes, and that these papers cannot therefore predict whether the analyzed cases would translate to the United States. As José Luis Ricón Fernández explained, “If there is one conclusion from the recent empirics of [industrial policy] it’s that it’s pretty much dependent on which industry, which country, in which period of development it is applied.”¹⁶³

This challenge is particularly significant for proposed U.S. industrial policies, given our political system and the special obstacles that industrial policies face here. As economist Nathan Lane explained in 2020 after reviewing the academic literature, “Without a doubt, future research must do more to understand the interaction between political economy and industrial policy. Because industrial policy is state policy, its success, scope, and efficacy is sensitive to institutional context.”¹⁶⁴ He adds that, thus far, “surprisingly few empirical papers explore the political endogeneity of industrial policy, and that “the relationship between the success of industrial policy and regime type is still an open question.”¹⁶⁵

As noted above, the U.S. political system is particularly susceptible to public choice problems due to the short duration of many elected federal positions and our well-developed lobbying and interest group system. One would also need to consider the U.S.-specific laws and regulations, such as Buy American restrictions and NEPA, and the sheer size and diversity of the

U.S. economy (as opposed to, say, Israel) – both of which would further diminish assertions that industrial policy can “work” in the United States simply because specific programs worked in other countries.

Industrial policy successes abroad are also routinely exaggerated. Numerous analyses, for example, have punctured the myth that Japanese industrial policy was primarily responsible for the country’s impressive growth and productivity in the 1970s and 1980s.¹⁶⁶ As the *Wall Street Journal* reported in 2002, Japan’s own “Ministry of Finance admitted that the interventionist and protectionist policies of the Ministry of International Trade and Industry eroded the competitiveness of the industries the government had sought to support. ‘The Japanese model was not the source of Japanese competitiveness but the cause of our failure.’”¹⁶⁷ Lach’s 2003 assessment of much-heralded R&D subsidies for Israeli manufacturers found such funds did benefit small firms but had negative effects on large firms, and, because most subsidies went to the large firms, they generated statistically insignificant improvements in company-financed R&D.¹⁶⁸

In his 2019 book, *Free Trade and Prosperity*, New York University’s Arvind Panagariya shows that the supposed industrial policy success stories of Taiwan and South Korea, both of which experienced rapid, manufacturing-led economic growth in the mid to late 20th century, are less accurate than alleged:

- Taiwan’s growth should be attributed to a general shift in trade policy away from import substitution towards trade and investment liberalization (particularly for industrial inputs), and to various domestic policies, such as political stability, labor market flexibility, macroeconomic stability, infrastructure expansion, and secondary education.¹⁶⁹ Government intervention, moreover, did not cause economic outcomes “to deviate significantly from what a neutral policy regime would have produced.”

Instead, “sectors that showed the best performance on the export front were invariably labor intensive and were not subject to selective targeting” via industrial policy, and the public sector’s share of manufacturing output declined significantly over the growth period examined.¹⁷⁰

- The Korean government intervened more heavily in its economy, promoted exports, and maintained import restrictions in the 1950s through the 1970s. However, “calculations show that when the economy-wide implication of all interventions are considered, the policy regime exhibited a slight bias in favor of exports relative to what would have prevailed under free trade.”¹⁷¹ In other words, the overall industrial policy effects were modest. Moreover, the exported goods that grew rapidly during the 1960s – plywood, woven cotton fabrics, clothing, footwear, and wigs – were labor intensive and not subject to state targeting.¹⁷² The Korean government also implemented domestic policies similar to those in Taiwan, and pushed industrial targeting in a “very small number of sectors.” The government pursued greater targeting of heavy and chemical industry (HCI) between 1974 and 1982, but supported industries performed poorly during this period, with relatively low total factor productivity as compared to unsupported industries, and the nation’s overall GDP growth rate was significantly below that achieved during the previous, less-interventionist period. Economic growth returned to this level and HCI industries’ performance improved only after the government in 1983-95 ended the HCI drive, ceased promoting strategic industries, and liberalized both import restrictions and its financial sector.¹⁷³

In both cases, Panagariya’s evidence leaves those crediting industrial policy with Taiwan’s and Korea’s growth to argue not that government interventions boosted growth above that which

a more liberalized regime would have produced, but instead that such benefits cannot be dismissed as implausible.¹⁷⁴ Such a standard is hardly a ringing endorsement of industrial policy, but even it is too kind, given that – as Panagariya also shows – the less interventionist Singapore, Hong Kong, and Taiwan grew faster than the more interventionist Korea.¹⁷⁵ Indeed, a 1991 analysis from Jaime de Melo and David Roland-Holst finds that Korea’s industrial policies in the 1970s erected barriers to entry and allowed incumbent firms to exploit their policy-induced market power, and that additional liberalization would have increased national welfare by as much as 10 percent of GDP.¹⁷⁶

Finally, industrial policy successes must be balanced against the numerous failures of such policies in countries around the world. This includes not only the U.S. policies noted in this paper, but also well-known debacles abroad, such as British aviation (e.g., the Concorde), computer, and automotive (e.g., British Leyland) efforts in the 1960s and 1970s; French “national champions” in computers and machine tools during the same period¹⁷⁷; numerous European technology projects in the 1990s and 2000s¹⁷⁸; Argentina’s national smartphone initiative (and several other consumer electronics failures)¹⁷⁹; Tunisia’s “Ben Ali” firms (named after the country’s leader, who owned most of the favored firms)¹⁸⁰; India’s Planning Commission and License Raj between the 1950s and early 1990s¹⁸¹; and numerous iterations of Brazilian automotive policy.¹⁸² (Other, lesser-known industrial policy failures are also plentiful.¹⁸³)

The “China Threat”

The newfound push for American industrial policy has been motivated in large part by China, with U.S. advocates, including high-level officials in the Biden administration, citing China’s growing economic and geopolitical power – both supposedly fueled by Chinese government industrial policy – as necessitating urgent federal government action.¹⁸⁴ China’s

recent and troubling embrace of illiberalism and expansionism, as well as pandemic-induced challenges to U.S. and global supply chains, have amplified these views and lead to a bipartisan push for American industrial policy to counter the “China threat.”

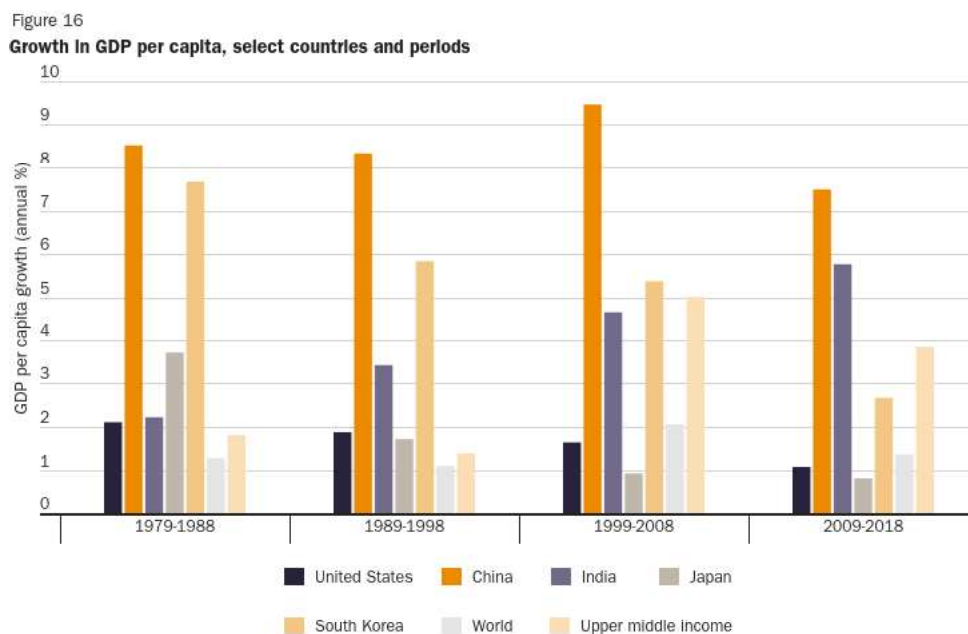
However, while China’s deepening authoritarianism surely warrants criticism and U.S. attention, the view of Chinese industrial policy as an urgent threat to the United States – one justifying a broad rejection of free markets and strong embrace of American industrial policy – is mostly misguided. Similar to its Asian neighbors, China’s rapid growth since the 1980s can be largely attributed to market-based domestic reforms following decades of self-imposed poverty and its general liberalization of trade and investment policy, including its accession to the WTO, *not* industrial policy. Despite this “catch-up growth,” moreover, China still lags the United States in both GDP per capita and many important industries. Chinese industrial policy may have helped some other industries, perhaps even overtaking Western competitors in the process, but the cost of doing so was enormous, and those policies have introduced systemic challenges that could hamper future growth. China also faces several other headwinds, financially and demographically, that could derail its ascension to the top of the global economic order.

Combined, these facts rebut the all-too-common perception in the United States of China as an unstoppable economic juggernaut that – fueled by industrial policy – will inevitably overtake the United States unless we adopt similar policies here. U.S. industrial policy should be considered on the merits, not out of an overwrought fear of the “China Threat.”

China’s Rise and Subsequent Embrace of Industrial Policy

China’s economic rise is undeniable. Growth in GDP per capita over the past four decades has been relatively steady, with a slight decline over the past decade (see Figure 16), at rates easily surpassing the United States and other countries. Furthermore, China’s share of global trade grew from 3 percent in 1995 to 12 percent in 2018, and China is now the world’s largest

manufacturing nation, with growing high-tech and internet industries. Over the same period, China became the world's second largest economy and the largest trading partner of many economies' including the European Union.¹⁸⁵



Little of China's impressive historic growth, however, can be attributed the nation's industrial policies. Instead, China's economic out-performance began during its period of reform and opening up in 1978 (starting from a very low, communism-induced baseline), followed by its integration into the multilateral trading system—i.e., the World Trade Organization—in 2001 and the requisite structural and economic changes that said accession required. For example, a 2012 study by the University of Toronto's Xiaodong Zhu concluded that China's growth "has been driven by productivity growth rather than by capital investment," which can be attributed to "gradual and persistent institutional change and policy reforms that have reduced distortions and improved economic incentives."¹⁸⁶ Numerous other economists have found that most of China's export competitiveness stemmed from internal, market-based reforms—on property rights,

privatization, price controls, trading rights, and import liberalization, for example – often in response to new WTO commitments.¹⁸⁷

Along the same lines, Barry Naughton, an economist specializing in China and author of *The Rise of China's Industrial Policy*, explained that China's impressive pre-2010 economic growth did *not* result from the type of top-down industrial planning and state intervention that has become prevalent in China today:

[T]here is a huge disconnect between the success that we attribute to the Chinese economy today and the orientation of Chinese policy today. China's emergence as an economic and technological super-power is due primarily to the policy package that it followed from 1978 through the first decade of the 21st century, that is, until about 2006-7. China's policy package today —that is, the policies that started tentatively after 2005 but were fully in place by 2008-2010— are radically different. Because of this, it is a mistake to attribute China's success to the policies China is currently following.¹⁸⁸

By contrast, Naughton agreed with the aforementioned economists – and many others – that the “driving force of industrial development” in China was “market-oriented economic reform,”¹⁸⁹ with the government primarily relying on market forces and minimizing direct government interventions¹⁹⁰ and economic success particularly tied to China's WTO entry. “How much of that success could be attributed to industrial policy and planning?,” Naughton asks, “The answer is simple: none.”¹⁹¹

As Naughton notes, the Chinese industrial policies that American critics today target only began in 2006 when Beijing adopted plans focusing on innovation and seeking to match the industrial capabilities of advanced economies.¹⁹² The 2008 global financial crisis amplified these efforts, with China by 2010 establishing innovation priorities for “strategic emerging industries” programs and desiring to surpass, not merely match, other nations.¹⁹³ Five years later, China adopted a new wave of industrial policies – focused on emerging and general-purpose technologies and supported by new public-private “industrial guidance funds” (IGFs) – to become a technological frontrunner.

Today, Chinese industrial policy covers a wide range of government actions, including direct investments, budgetary support, cheap loans, tax breaks, and regulatory preferences, and it is therefore difficult to estimate these initiatives’ total price tag.¹⁹⁴ However, the IGFs offer some insights into the magnitude of China’s industrial policy: by June 2020, IGFs had raised approximately 40% (\$672 billion) of a targeted \$1.55 trillion¹⁹⁵, the majority of which (61% or possibly higher) is dedicated to high technology and advanced manufacturing, with infrastructure, agriculture, and services also prioritized.¹⁹⁶

Chinese Industrial Policy’s Mixed Record

While American politicians and pundits often portray Chinese industrial policies as uniformly successful, the reality is much more complicated. Surely, not all Chinese industrial policies have been costly failures. The China State Grid Corporation, for example, developed ultra-high-voltage transmission projects and now is a world leader in the field.¹⁹⁷ Similar, industrial planning and subsidies have helped cultivate China’s renewable energy sector,¹⁹⁸ which now leads the renewable energy output world-wide. China’s industrial policy in steelmaking, high-speed rail, and machinery has also helped the nation become an economic power in those industries.¹⁹⁹

However, Chinese industrial policy “successes” are matched by failures. Perhaps the most notable example is China’s unsuccessful decades-long quest to be a global leader in semiconductors, an industry considered by U.S. industrial policy advocates as “too critical to fail.”²⁰⁰ Despite receiving billions of dollars in government funding and being prioritized in government policy documents, such as the Guidelines to Promote a National Integrated Circuit Industry, Made in China 2025, and the Technical Area Roadmap²⁰¹, China’s domestic players still, by most expert accounts, decades behind the world’s best producers.²⁰² Its share of the global installed capacity jumped from 1 percent in 2000 to 15 percent by 2020, but three-fourths of that capacity is owned by foreign multinationals.²⁰³

Government support also has not stopped six multibillion-dollar Chinese chip projects from failing over the past two years, and high-profile manufacturers, such as Wuhan Hongxin, Tacoma, and Dehuai, have dissolved or declared bankruptcy.²⁰⁴ The ones that have survived are still two-to-three generations behind the United States (not to mention current industry leader TSMC)²⁰⁵, and China’s national champion, Semiconductor Manufacturing International Corporation (SMIC), is developing facilities to produce chips that “are five to six years behind the industry’s leading edge at 10 percent of the volume of the world’s leading firm.”²⁰⁶ By contrast, China’s major advances have come in less technically-challenging and more labor-intensive “back-end manufacturing,” and “fabless” design companies that “have low barriers to entry due to widely available off-the-shelf design tools.”²⁰⁷

SMIC and other producers also remain heavily reliant on the United States and other countries for semiconductor manufacturing equipment; hence, why Chinese industrial policy is now focused on simply surviving U.S. sanctions, rather than leading the world.²⁰⁸ According to a 2021 report in Nikkei—

U.S. research firm IC Insights in January predicted that China's self-sufficiency ratio for semiconductors would be only 19.4% in 2025. This was a slight downward correction after the firm in 2020 predicted the ratio would rise to 20.7% by 2024. It also noted that over half of the ratio was accounted for by mainland China units of overseas manufacturers, such as Taiwan Semiconductor Manufacturing (TSMC), and South Korea's SK Hynix and Samsung Electronics, with the self-sufficiency ratio that involves only Chinese manufacturers estimated at around 10%.

China's government under Xi had put large amounts of subsidies into semiconductor projects across the country until 2020, but the results of the funding were limited, with many projects failing. The government now seldom mentions the 70% self-sufficiency target laid out in its Made in China 2025 industrial policy.²⁰⁹

Indeed, industrial policy shoulders much of the blame for the current state of the Chinese semiconductor industry, which features rampant misallocation of resources, ineffective implementation, corruption, and a significant shortage of human capital²¹⁰, as well as heavy reliance on well-funded but uncompetitive SOEs.²¹¹ Future success is also far from guaranteed. As Christopher Thomas from the Brookings Institution explained, “most segments of China’s semiconductor industry remain behind its foreign competitors, and its efforts to catch up face major economic obstacles.”²¹²

The aforementioned IGFs, intended to combine government direction with private capital and market forces, also have proven unsuccessful thus far. In particular, they have not met their objective of attracting private investors and instead rely on state-owned entities for funding.²¹³

Because of poor management and risk-assessment, moreover, many funds are underinvested, redundant, or wasted on illicit activities.²¹⁴ It is also unlikely that these investments, if they materialize, will be profitable because the government is targeting only a 5 percent rate of return in order to focus on “import substitution, acquiring intellectual property, and building a domestic industry” rather than profits.²¹⁵ Even these alternative goals, however, could prove to be wishful thinking, because “[p]ast experience indicates that new [general purpose] technologies take decades to spread through the economy, and their impact often comes in ways that were poorly anticipated at the beginning.”²¹⁶

Even where Chinese industrial policy has developed a competitive industry, its efforts in electric vehicles (EVs) show that the costs can be astronomical, successes modest, and future, market-based growth uncertain. The Chinese government started providing subsidies to the EV industry in 2009, aiming to develop quality domestic manufacturers and a domestic supply chain ecosystem.²¹⁷ These subsidies helped Chinese EVs to go from 10 percent global market share in 2011 to 53 percent in 2019, with 1.5 million EVs sold in China in 2018 alone.²¹⁸

It is estimated, however, that the Chinese government spent nearly *\$60 billion* cultivating its EV industry between 2009 and 2017, through a mixture of R&D grants, consumer subsidies, public procurement, and local protectionism. These subsidies may have created an EV market from scratch, but they also “sprouted a litany of problems that made Beijing worried that it was replicating the mistakes in the traditional auto industry.” In particular--

Instances of fraud and collusion were made public by a 2016 government investigation. In several instances, manufacturers received subsidies for vehicles that existed only on paper or that were equipped with batteries that didn't meet subsidy eligibility

requirements. In some cases, vehicles were sold to companies related to the manufacturer so they could pocket the subsidies....

The cost of subsidies may have been worthwhile if the irrational exuberance that accompanied this “let 100 EV firms bloom” period also led the way in technological superiority. Yet even as registered EV firms mushroomed to more than 400 by 2018, according to some estimates, only about 15% of them are actually manufacturing cars. The vast majority of these firms appears to have either not reached the production stage or have products of questionable quality.²¹⁹

The Chinese government quickly curtailed EV subsidies and “launched a market-based program focused on raising quality and fuel efficiency and relying more on competition.”²²⁰ (It is far from certain that the U.S. political system could so quickly permit the same.) The EV sector, however, may not be sustainable in the absence of state interventions, as consumer subsidies alone accounted for one quarter of total EV sales. Indeed, EV sales in China declined by 20 percent in 2019 compared to one year prior, shortly after subsidies to private passenger EVs were terminated in June 2019.²²¹ Chinese EV companies still lag behind the world’s leaders²²², and the United States’ Tesla is venerated there.²²³

China’s shipbuilding sector offers another example of industrial policy subsidies not commensurate with returns. According to a 2019 study from Panle Jia Barwick and colleagues, Chinese industrial policy generated more production and investment in the domestic shipbuilding industry, but it not only came at a very high cost but also generated “sizable distortions and led to increased industry fragmentation and idleness.” The authors estimated that between 2006 and 2013 the Chinese government directed policy support totaling 550 billion yuan (approximately

\$80 billion at the time) to the shipbuilding industry, but that these subsidies generated only 145 billion RMB (\$21 billion) of net profit for domestic producers. Furthermore, a large share of the subsidies (230 billion RMB / \$33 billion) went to global ship owners – of which Chinese shipping companies are a small share – via lower ship prices.²²⁴

Similar evidence of Chinese industrial policy problems can be found in the domestic aircraft and automotive manufacturing industries,²²⁵ as well as 3G mobile technologies.²²⁶ These and other examples call the overall economic benefits of China's recent embrace of industrial policy into question. Not only do projects' direct costs often outweigh their benefits (if there are any), but the broader costs imposed by China's industrial policies may actually hinder rather than accelerate China's economic development. In particular, China's industrial policies have been shown to create the following problems that hinder stable, long-term economic growth:

- **Resource misallocation.** According to a 2013 government audit, for example, the new energy sector generated 1.6 billion RMB (approximately \$258 million) of misallocated funds between 2011 and 2012 alone.²²⁷ A 2021 paper from Chong-En Bai and colleagues finds significant talent misallocation in China, with potential entrepreneurs instead attracted to the large state sector.²²⁸ Given the extent of Chinese industrial policy activities since 2010 (not to mention the Chinese government's penchant for downplaying economic problems in official statistics), the total amount of resource misallocation – capital, labor, materials, equipment, and time – caused by such policies is likely substantial.
- **Corruption.** Corrupt behavior stems from the state's control over resources and financing, and is evident in Chinese sectors such as tobacco, banking, and infrastructure, in which state monopolies dominate.²²⁹ In general, corruption is more prominent in counties with active industrial policies²³⁰, and this appears to be the

case in China too: according to Transparency International's Corruption Perceptions Index, China ranks 87th out of 180 countries, indicating a fairly high level of corruption.²³¹ Such corruption slows economic growth and development by thwarting competition, deterring investment,²³² exacerbating market distortions, and reducing tax revenue.

- **Investment bubbles.** Chinese industrial policies also have created investment bubbles and overcapacity in many targeted industries – bubbles that Beijing is now trying to deflate. As already noted, for example, both China's semiconductor and EV industries show signs of irrational exuberance and financially-stressed “paper companies” that will never be productive. The large-scale bankruptcies and business failures associated with Chinese industrial policies contribute to broader financial challenges in China, such as its growing debt load and share of non-performing commercial loans.
- **Overcapacity.** Meanwhile, the subsidized companies that survive may engage in duplicative projects or produce *too many* goods, resulting in overcapacity (where supply exceeds demand) that is evident in China's steel, cement, chemical fiber, aluminum, solar panel, and other industries.²³³ This not only threatens China's economy, but also fuels tensions among China's trading partners and generates global economic distortions. Chinese government efforts to rein in overcapacity have thus far had limited success.

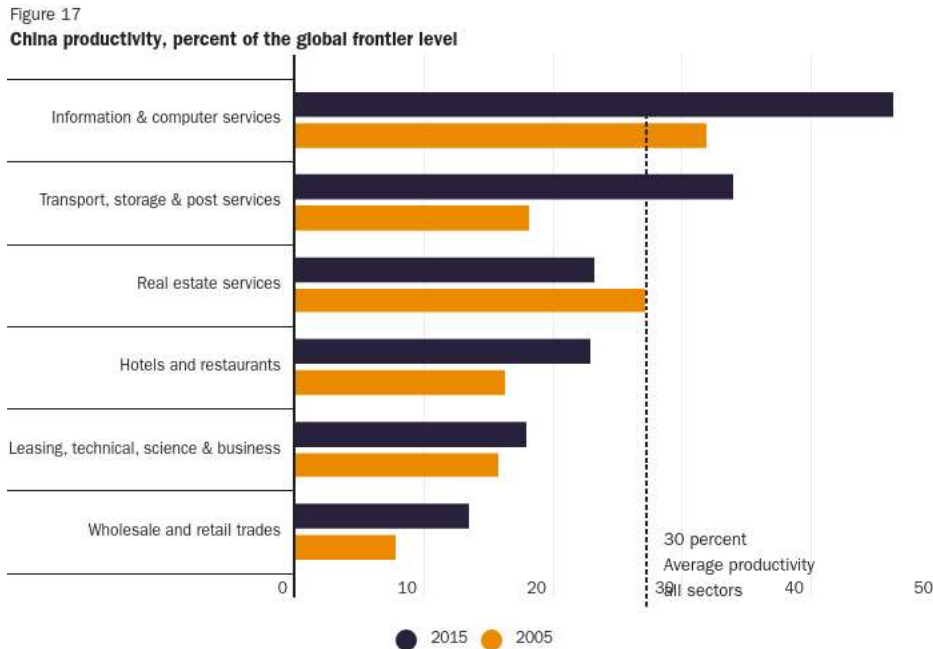
Finally, one must consider whether the United States *could* emulate Chinese industrial policy, even if doing so were desirable. China's industrial policy model is unique: the Chinese government controls a large share of the economy and therefore has an enormous amount of

money at its disposal. As Naughton explains, this “puts limits on the degree to which industrial policies can impose costly distortions on the economy.”²³⁴ The U.S. system – thankfully – lacks such characteristics and would therefore suffer far more damage from “China-style” industrial policy interventions. As noted above, moreover, the United States also differs from China in that our political system is less tolerant of costly public failures, particularly in the commercial (as opposed to, say, national defense) arena. Popular backlash, which the U.S. system fortunately permits (again, unlike China), would be all but guaranteed.

China’s Systemic Challenges

China also faces broader, systemic challenges that call its future global economic dominance into question. First, China is experiencing significant demographic headwinds that will only accelerate in the coming years. Despite relaxing its decades-long family planning policy, China continues to have a falling birth rate. Last year, its population rose to only 1.41 billion from 1.40 billion in 2019, with individuals over 60 now accounting for almost one fifth of the population.²³⁵ An aging China creates pressures on its health care system and the overall economy.²³⁶

China could offset demographic concerns with rising productivity (it appears uninterested in immigration), but this factor is also lagging – likely due in part to Chinese industrial policy. According to a 2020 International Monetary Fund Report, China’s average productivity rate is only a third of that in other developed economies – including Japan, Germany, and the United States.²³⁷



Source: IMF People's Republic of China: Staff Report for the 2020 Article IV Consultation

A 2014 study published by Europe China Research and Advice Network corroborates the IMF's findings: although Chinese Global 500 firms grew from 3 in 1995 to 89 in 2013, these firms compared unfavorably to their western counterparts, with larger payrolls, less capital intensity (assets / employees), lower profitability, and less innovation capacities.²³⁸

It is an open question as to whether China will catch more productive developed economies. Productivity growth has stagnated in recent years, with average annual growth dropping from 3.5 percent between 2007 and 2012 to only 0.6 percent from 2012 to 2017.²³⁹ Growth in Total Factor Productivity is now only a third of what it was before the Great Recession, a much sharper decline than other countries.²⁴⁰ As noted by the *Wall Street Journal*, much of China's productivity slowdown is attributable to the government's "massive stimulus program to prop up economic growth" after the financial crisis, and has further deteriorated under President Xi Jinping.²⁴¹ Other contributors include recent government efforts to control private businesses, especially technology firms, and growing bureaucratization, which has confounded central

government efforts to implement economic and social reforms that might boost national productivity.²⁴²

Inefficient SOEs are also a significant cause of China's productivity issues. Despite constituting a smaller share of China's economy today as compared to decades ago, "SOEs are dominant in key industries, including energy, aviation, finance, telecoms and transportation."²⁴³ A 2021 Bruegel study similarly found that "China's competitive environment is generally poor," with Chinese SOEs generally in an "advantageous position" across most economic sectors.²⁴⁴ However, even though SOEs benefit from privileged access to credit and other resources, they lag in productivity behind privately-owned counterparts by 20 percent.²⁴⁵ As noted by Cato Institute adjunct scholar Terence Kealey, "as judged by the numbers of patents granted for every unit of investment in R&D, private companies in China are three times more efficient than are state-owned enterprises."²⁴⁶

Unfortunately, Chinese SOEs' economic prominence appears to be growing, with the government increasingly favoring these entities²⁴⁷ while cracking down on private firms and entrepreneurs²⁴⁸, and limiting foreign investment. As explained by China expert Nicholas Borst, much of SOEs' rise is attributable to Chinese industrial policy: "State-owned firms have been at the forefront of the Chinese government's drive to develop domestic sources of key technologies, such as semiconductors."²⁴⁹

Finally (and in part due to the aforementioned issues), China faces a growing debt burden that will, unless tamed, weigh on future growth. China's debt-to-GDP ratio reached approximately 280% in 2020 (295% if foreign debt is included), the majority of which is in the form of corporate bank loans. However, China's banks – long considered tools of Chinese industrial policy (via, for example, low-interest loans to preferred industries) – are showing signs of strain. In 2020, Chinese banks had a record high of \$466.9 billion in non-performing assets –

a number that is expected to continue rising in the future.²⁵⁰ According to the Bank of Finland, moreover, “China was already engaged in efforts to bail out small and medium-sized banks before covid-19 struck,” and stress tests released by People’s Bank of China in November showed that 10 of 30 banks – including all of China’s “systemically critical banks” would fail “even under the mildest stress scenario.”²⁵¹

Chinese government debt may be more manageable (approximately 70 percent of GDP), but is expected to expand significantly in the coming years as the government funds a social safety net for its aging population.²⁵² (Certain Chinese industrial policy projects, such as high-speed rail, also contribute to China’s growing public debt burden.²⁵³) As the Bank of Finland analysis put it, “China’s piling on of debt has long raised concerns among observers of the Chinese economy because rapid descents into indebtedness in other countries have typically led to major economic collapse or severe banking crises.” While a crisis seems unlikely in the near term, such concerns are almost certain to weigh on future growth and other government initiatives.

It is possible that China can overcome these economic headwinds and others (e.g., environmental degradation, overseas project failures, restive populations, alienation of foreign firms, and increasing illiberalism²⁵⁴). It is undeniably a large economy with an increasingly educated population. But China’s economic challenges, caused in no small part by its relatively recent embrace of industrial policy, argue strongly against the implementation of U.S. industrial policy as a last-ditch effort to counter an unstoppable global hegemon.

Conclusion

Resurgent calls for American “industrial policy” suffer from several flaws. They depend on a malleable definition that prevents legitimate analysis, omit past industrial policy failures, and