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Ten Lessons for Industrial Policy and One Chart

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The United States practices many forms of industrial policy and has long done so. I will offer some empirical observations about U.S. industrial policy, touch on a few examples, and distill some broader lessons. I won't confine my remarks to national security matters, because the main challenges that arise with industrial policy are generic.

A Definition of Industrial Policy: Government interventions that pursue policy objectives by favoring or disfavoring specific technologies, industries, companies, and economic activities.

Observation: Industrial policies create "special interests" that benefit from the policy and lose out when it ends. Naturally, these interests organize politically to preserve their benefits. As a result, industrial policies are self-entrenching within a democratic political process.

Lesson 1: Once implemented, industrial policies are hard to kill. That also holds when they fail to meet their objectives, when they are not cost effective, and when they outlive their usefulness.

Example: Large-scale government support for the ethanol industry dates back to the 1978 Energy Tax Act, which granted a motor fuel excise tax exemption of 40 cents a gallon on gasoline blends with more than 10% ethanol. The stated purpose was to reduce greenhouse gas emissions. Two years later, however, the U.S. placed a tariff of 54 cents a gallon on imported ethanol – making ethanol blends more, not less expensive to consumers. The new stated purpose was to support energy security and American farmers. Politically, this was a winning formula, especially given Iowa's role in the presidential primary process. Later legislation in 1990, 2004, 2005, and 2007 provided tax credits for ethanol use and introduced, then extended ethanol blend mandates.[1]

Have ethanol support programs lowered greenhouse gas emissions? It's unclear. They have raised corn, wheat, and soybean prices. In any event, the durability of ethanol support programs reflects a political logic, not any success in achieving the original objective.

[1] Diamond and Engebretson (2019).

Observation: No matter how carefully the experts design an industrial policy, it gets mangled and distorted as it passes through the political process of enactment and implementation.

Lesson 2: Even sound, well-conceived industrial policies usually underperform in practice, as implemented, because they are not ultimately designed, implemented, and operated as conceived.

A former U.S. Secretary of Defense famously remarked "You go to war with the Army you have, not the Army you might want." Likewise, we must implement industrial policy with the government we have – not the far-sighted, benevolent, highly competent social planner that many academics imagine, and some policy mavens crave.

Observation: Industrial policies are often rife with unintended consequences. When commercial concerns produce costly, unexpected consequences, firms lose money and stop. When public sector initiatives yield costly consequences, they go on and on. See Lesson 1.

Example: Our many policy efforts to force-march American households and auto firms from internal combustion engines to EVs is costly and misguided in national security terms. China leads the United States in battery technology, battery production, and control over the battery supply chain. Yet, we pursue expensive policies that push us to greater dependence on batteries and battery technology, accentuating the economic leverage of our chief geopolitical adversary.

Lesson 3: New proposals for industrial policy warrant intense advance scrutiny, great humility about unintended consequences, and a sober recognition of Lessons 1 and 2.

Observation: The political process is ill equipped to assess policy performance against vague, open-ended objectives ("beat China," "win the future," "win the war" on this or that, etc.). Performance assessment against such objectives is hard even for experts, let alone political leaders and voters. As a result, the political process is slow to recognize policy failures, to verify why they happened, and to respond with corrective actions.

Observation: In contrast, market processes mitigate these challenges or obviate them entirely. The profit-and-loss system compels hard choices without the need to explain why to politicians and voters. If a consumer dislikes a particular product or a business finds fault with an input supplier, there's no need to "verify" the dislike or explain why. That consumer or business simply withholds their spending power. The compulsion to stop spending taxpayer money on failed public sector initiatives is much, much weaker or absent altogether.[2]

Lesson 4: Be especially wary of industrial policy initiatives in pursuit of vague, open-ended objectives and initiatives that lack clear yardsticks for success and failure.

[2] See Sowell (1996) for a deep analysis of how the assignment of decision-making authority governs feedback to the decision maker and the quality of decisions. Cochrane (2026) offers an excellent précis of Sowell's book.

Observation: Despite the challenges, U.S. history offers some examples of industrial policies that largely achieved their stated objectives. Here are three:

- The Manhattan project: Design, build, test, and deploy an atomic bomb in theater. Success was evident. The objective was easy to explain and understand — before the fact for those who participated, after the fact for political leaders and voters. The benefit-cost calculus was highly favorable for the U.S. and its allies.
- Operation Warp Speed: Quickly develop and manufacture a COVID vaccine. The objective and its urgency were transparent and easy to grasp. The extent of success was reasonably evident, and the project was essentially self-liquidating. The guaranteed procurement feature was also important, which yields another lesson (one that is highly relevant for munitions production).
- JFK's pledge to put a man on the moon also had a clear, verifiable objective. (One can argue about how the moon program stacked up in terms of cost and benefits.) NASA began to flounder after the Apollo program and in the absence of an equally clear objective. That's probably not coincidental.

Lesson 5: Successful industrial policies often involve clear, easy-to-grasp objectives for which success or failure is easy to perceive (for voters, not just for experts). It helps if the policy naturally expires.

Observation: It's often claimed that some countries have accelerated their economic development by the well-designed industrial policies. Japan, South Korea, Singapore, and Taiwan, are often held up as exemplars in this regard.

Let's accept that claim. It does not follow that industrial policy will work for the United States. Why not?

- Our "enabling infrastructure" is inferior in key respects, especially in the lack of high-quality primary and secondary schooling in many parts of the U.S. and in the scarcity of high-quality job training programs. These were essential elements of the East Asian development miracles.
- The United States is at a different stage of economic development.
- As a much larger share of the global economy, the United States cannot succeed by excelling in just a few sectors and exporting from those sectors to the rest of the world.
- We must implement industrial policy with our government, not theirs. (Lesson 2)

Lesson 6: Successful industrial policies are not readily portable across time and space.

Observation: Other aspects of our "enabling infrastructure" are best in class, or nearly so: Our universities, capacity for basic research, innovation ecosystem, capacity to allocate capital at scale to promising new technologies and commercial ventures and, historically, our ability to attract STEM and entrepreneurial talent from the rest of the world are enormous strengths.

Lesson 7: The U.S. should leverage its strengths in pursuing its national security objectives.

Lesson 8: Import tariffs are poorly suited for most national security objectives.

a. They distort multiple production and consumption margins in the pursuit of national security objectives that often pertain to concerns about production capacity (not production itself) and resilience in the face of supply disruptions.

Example: Steel tariffs discourage domestic consumption of steel-using products, American exports of steel-using products, and overall domestic production of steel-using products. None of that is in the U.S. economic or national security interest. Tariffs on U.S. steel imports do encourage U.S. steel production. Whether they encourage U.S. steel production capacity is a more complex issue that turns on expectations about future tariffs, among other things.

b. Tariffs generate ill will among trading partners and invite retaliation, which causes additional harm to our economy and theirs.
c. Tariffs often run afoul of U.S. trade agreements.
d. Tariffs imposed on dubious national security grounds weaken the credibility and value of future trade agreements — including President Trump's "deals."

Observation: The United States is awash in "negative" industrial policies that damage our economic performance and directly or indirectly weaken our national security.

Lesson 9: Fix or end our many broken and negative industrial policies.

Some examples (in addition to ones already mentioned):

- Regulations and permitting practices that prevent, delay, and raise the costs of constructing new energy infrastructure, factories, and housing.
- A slow, bureaucratic weapons acquisition process and defense procurement system. "The Federal Acquisition Regulation and its Pentagon supplement are more than 5,000 pages, a labyrinthine barrier for most companies." (Alperovich, 2025)
- Occupational licensing restrictions that deter the entry of new workers and firms, and that inhibit the reallocation of experienced workers and their skills across state lines.
- Trade policies and practices – e.g., chaos, volatility, and uncertainty around tariffs – that undermine the reliability of the United States as a trading partner, discouraging trade between the United States and other countries, and diminishing an important source of geo-economic strength and influence. See Davis (2025).
- Policy-generated economic uncertainty discourages investment, especially long-lived investments that are costly to reverse – e.g., shipyards, aircraft production facilities, weapon systems, munitions production capacity, …

Observation: Heavy reliance on industrial policy fosters a rent-seeking outlook among business executives because their success then becomes dependent on anticipating and shaping government policies, and on remaining in the good graces of government officials.

This dynamic is on vivid display in the second Trump administration. See this 60-second video clip of many of America's most successful business executives praising President Trump: https://www.washingtonpost.com/video/politics/at-white-house-dinner-tech-ceos-cant-stop-thanking-trump/2025/09/04/2d1e722c-d771-4d40-b1c4-e5fcdac3957f_video.html

Lesson 10: If ring kissing becomes necessary for commercial success, the ranks of senior business leaders will become populated with world-class ring kissers rather than men and women who owe their success to outstanding customer service, better products, efficient operations, and the commercialization of cutting-edge technologies.

Where the United States could, in principle, benefit from new or better industrial policies:

1. Munitions production, capacity, and stockpiling
2. Shipbuilding production and capacity
3. Defense acquisition and procurement reform
4. Chokepoints:
    a. Data collection, dissemination, and analytic assessments of risks and vulnerabilities. See Spence (2026).
    b. Active policy responses to ensure economic resilience, deter strategic abuse by adversaries, and safeguard national security.
5. Ensuring secure, reliable infrastructure systems for water, energy, communications, transport, and data storage and protection – including the hardening of these systems against attacks by adversaries.
6. Immigration as a wellspring of innovation and entrepreneurship – reinvigorating one of our traditional strengths.

The Neglect of Industrial Policy Failures

Many discussions of industrial policy, especially by advocates, neglect the many, many failures of industrial policy. Puerto Rico is a case in point. Its basket-case economy was subject to aggressive industrial policy for decades, yet it rarely gets attention in this regard. There must be hundreds of articles about East Asian successes with industrial policy for every article about its failures in Puerto Rico.

My 2006 article with Luis Rivera-Batiz covers some of the relevant ground. As we discuss, industrial policy as practiced in Puerto Rico gave it an industry structure that was profoundly misaligned with the skills of its population at a huge cost to U.S. taxpayers. See, especially, Sections 2.4 and 3.3. Section 3.2 discusses the role of the Jones Act (another highly counterproductive industrial policy) and protectionist policies more generally in stunting Puerto Rico's economic development. Section 3.4 describes the rent-seeking culture in Puerto Rico that

arose and thrived hand in hand with the interventionist approach of the government. Puerto Rico also created its own version of permitting hell before the U.S. mainland. See Section 4.

The dismal failure of industrial policy in Puerto Rico (and many other places) doesn't mean that beneficial industrial policy is impossible. But these experiences serve, or should serve, as cautionary flags. It's challenging to design and execute a sound industrial policy, and it's even harder to get the politics and the political economy right. And in this light, it's worth remembering that Puerto Rico is part of the United States.

The Subtext of Public Discourse around Industrial Policy and National Security

By my reading, enthusiasm for industrial policy to advance U.S. national security correlates positively with what I see as an exaggerated sense of China's relative economic performance in recent decades. So, I want to close with a chart that shows China's GDP per capita relative to the United States in recent decades. For comparison, I show the same type of chart for the Soviet Union before its dissolution. Another chart and table appended below show related comparisons.

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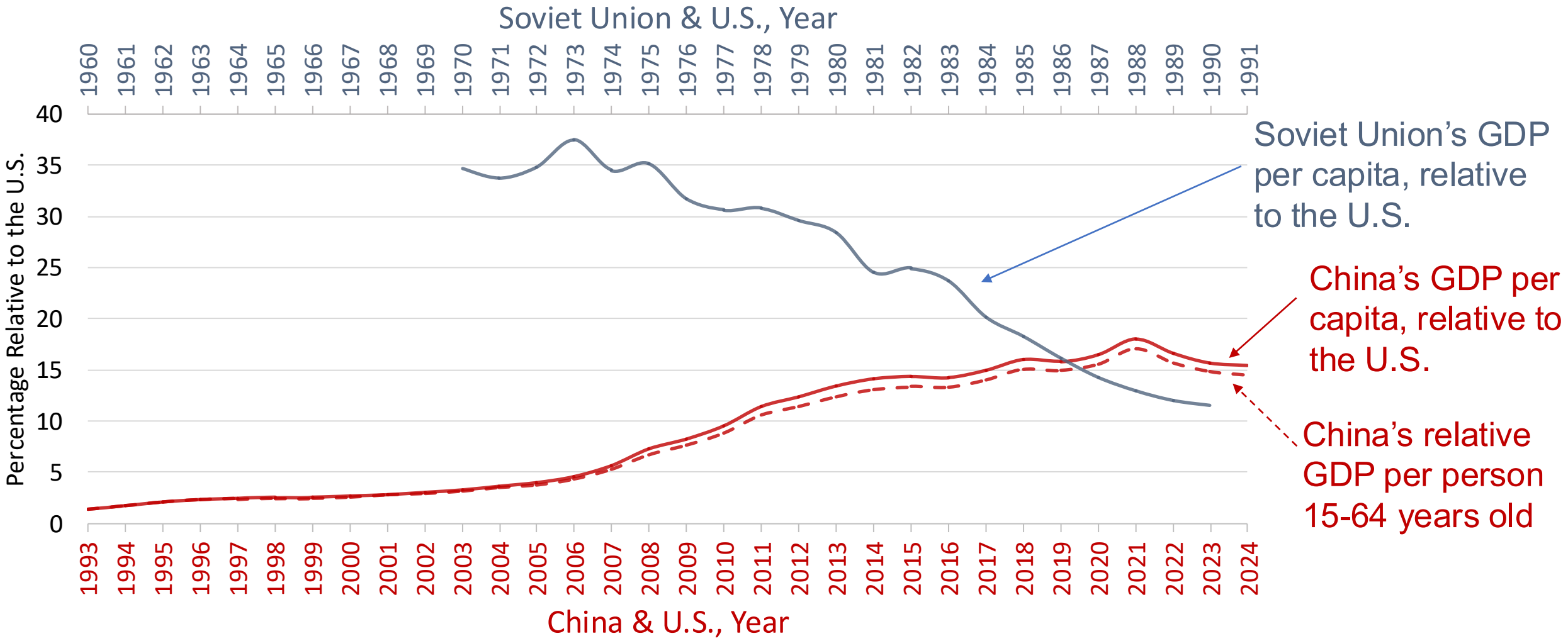
GDP per Capita at Current Exchange Rates Relative to the U.S., Soviet Union (1960-1991) and China (1993-2024)



Sources: World Bank, *World Development Indicators* (China-U.S. comparison), data.worldbank.org/indicator/NY.GDP.PCAP.CD ; United Nations Statistics Division, *UNdata* (Soviet Union-U.S. comparison), unstats.un.org/unsd/snaama/Basic.

Note: GDP per working-age person is calculated as total GDP at current exchange rates divided by the population ages 15 to 64 for each country and year. All other indicators are reported directly from the original sources.

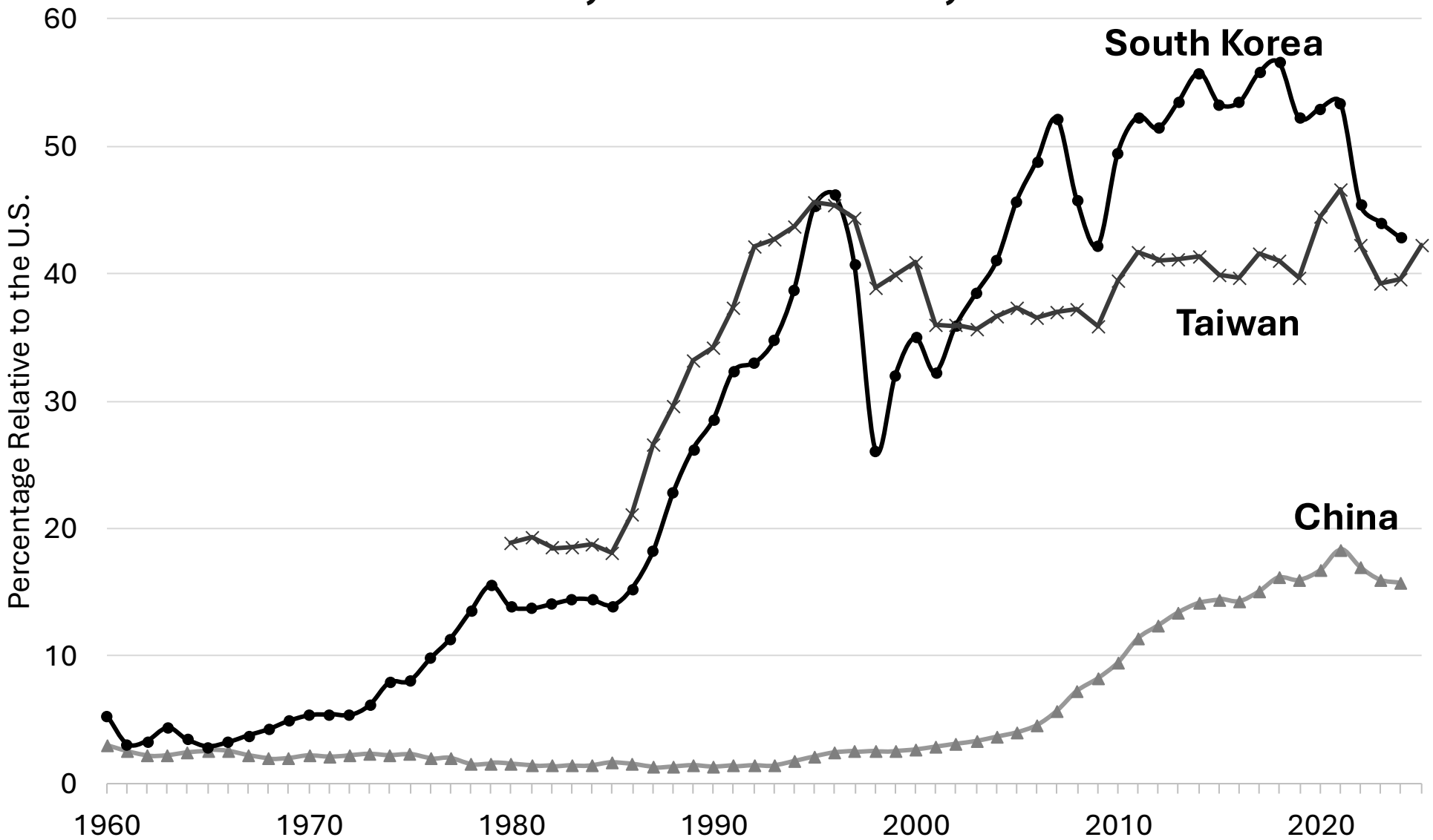
GDP and Consumption Per Capita and Population, China and the Soviet Union Relative to the U.S.

Relative values in percent (compared to the U.S.)	Soviet Union			China			
	1960s	1970s	1980s	1990s	2000s	2010s	2020s
GDP per capita							
-Current exchange rates[1,2]	-	33.3	18.8	2.2	4.5	13.6	16.5*
-PPP adjusted[3,4]	21.4	29.0	36.1	6.1	10.7	22.1	30.3**
Consumption per capita							
-Current exchange rates[1]	-	26.3	14.5	1.6	2.6	7.6	9.5*
-PPP adjusted[2,3]	17.5	21.5	26.1	3.6	5.8	12.7	17.1*
Population[2,3]	1.19	1.18	1.16	4.52	4.41	4.29	4.21*
Working Age (15-64) Population[2]	-	-	-	4.58	4.66	4.61	4.48*

* 2020 – 2024 ** 2020 – 2025.

Sources: 1. United Nations; 2. World Bank, *World Development Indicators* (China-U.S. comparison); 3. Feenstra, Robert C., Robert Inklaar and Marcel P. Timmer (2015), "The Next Generation of the Penn World Table" American Economic Review, 105(10), 3150-3182, www.ggdc.net/pwt (Soviet Union-U.S. comparison); 4. IMF, *World Economic Outlook October 2025* (China-U.S. comparison).

GDP per Capita at Current Exchange Rates Relative to the U.S.: China, South Korea, and Taiwan



Sources: IMF, *World Economic Outlook* (1980 to 2025), www.imf.org; World Bank, *World Development Indicators* (1960 to 2024), databank.worldbank.org. ***Note***: World Bank data are not available for Taiwan.